EXTENDED PROJECT ACTIVITY PACK

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Extended Project Activity Pack

Contents

Starting the project

The Extended Project: true or false?

It is very rare at school or college to be told you have the freedom to study exactly what you want. The Extended Project Qualification (EPQ) gives you that chance. Maybe there is something that you are really interested in but you have had no opportunity to pursue further because it is not on the specification of the subjects you are studying. Perhaps you love Shakespeare, care about human rights issues, want to learn more about the British Empire, are an excellent dancer, want to produce a play, create a piece of artwork or investigate gender inequality. This activity will help you to learn more about a qualification that lets you take charge of your own learning.

AIMS

This activity will help you understand more about Extended Projects. By working through a series of statements and deciding whether they are true or false, you will gain a better understanding of what an Extended Project is and why you might want to complete one.

Task 1

Decide whether the statements below are true or false, and explain your reasoning.

Statement	Answer and explanation
1. I can choose what I do for my Extended Project.	
2. I will have an exam at the end of the year.	
3. I will have to do some sort of presentation at the end of the project.	
4. I will develop important skills.	
5. Only an individual can complete an Extended Project.	
6. I won't have a teacher.	
7. I have to write a dissertation.	

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8. Doing an Extended Project will develop my confidence.	
9. If things go wrong I will be marked down.	
10. I will be assessed on planning and time management, using resources, and developing an idea.	
11. I can decide when I want to spend more time on my project.	
12. It won't help my other subjects.	
13. It will help me get a job.	
14. An Extended Project is an easy option.	
15. I must already have studied my chosen topic.	
16. Good IT skills will be an asset.	
17. The Extended Project is not worth any UCAS points.	
18. The highest grade I can achieve is an A.	

Task 2

Using the information from task 1, write a paragraph explaining how and why completing an Extended Project could benefit you personally. What skills do you hope to develop? What do you hope to achieve?

Aims and objectives

This activity will help students understand more about the Extended Project and the benefits of choosing this qualification.

Anticipated student responses

You may have to develop the answers/reasons with students.

Task 1

Statement	Answer and explanation
1. I can choose what I do for my Extended Project.	**True:** but titles do have to be agreed by a supervisor and your school or college may decide to limit your choice in some way.
2. I will have an exam at the end of the year.	**False:** instead there is a piece of written work and a presentation.
3. I will have to do some sort of presentation at the end of the project.	**True:** you are required to present and discuss your project in some way – and this will be assessed.
4. I will develop important skills.	**True:** skills will include time management, research and referencing skills, independent learning and presentation techniques.
5. Only an individual can complete an Extended Project.	**False:** it is possible to work in a group but each member of the group must have a specific role and produce their own individual work.
6. I won't have a teacher.	**True (in most cases):** but you will have a project supervisor who will monitor your progress and provide advice and guidance.
7. I have to write a dissertation.	**False:** you could choose to perform, investigate or even make something for your Extended Project. All involve some assessed writing.
8. Doing an Extended Project will develop my confidence.	**True:** you will have developed important skills and knowledge.
9. If things go wrong I will be marked down.	**False:** actually as long as you comment on and evaluate the things that have gone wrong with your project you could actually gain marks.
10. I will be assessed on planning and time management, using resources, and developing an idea.	**True:** but also on an evaluation of the project and a presentation involving answering questions.
11. I can decide when I want to spend more time on my project.	**True:** although you may be required to do set work in class time you can decide which parts of your project you tackle and when.
12. It won't help my other subjects.	**False:** all the skills are transferable.

13. It will help me get a job.	**True:** important work skills are developed.
14. An Extended Project is an easy option.	**False:** it is hard work but very rewarding.
15. I must already have studied my chosen topic.	**False:** it could be something you are interested in outside of school or college or an area of a subject you have not explored.
16. Good IT skills will be an asset.	**True:** but you will probably learn IT skills during the course too.
17. The Extended Project is not worth any UCAS points.	**False:** the EPQ is worth the same number of points as an AS level.
18. The highest grade I can achieve is an A.	**False:** it is possible to achieve an A* for an Extended Project. This is because it is seen as being the same standard as an A level.

Task 2

Variable answers depending on why students have chosen the course.

Variations/developments

Students could discuss the statements in groups or come up with their own statements about what they think the project will involve.

Relevant pages in Managing Extended Projects

What is an Extended Project? Pages 6-7
Why do an Extended Project? Pages 8-9

Further information

It would be useful to do this exercise during the recruitment phase of the project as it will help students develop a clear understanding of what to expect.
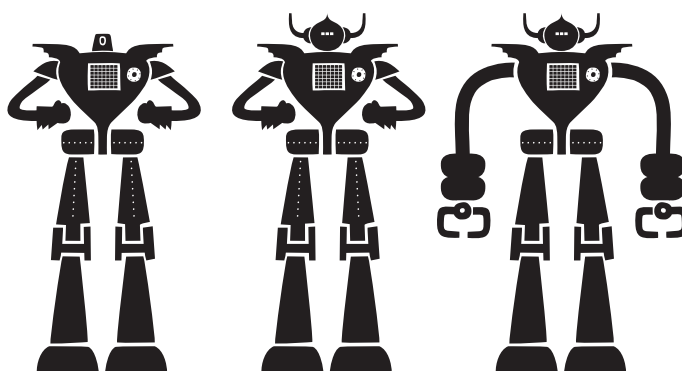
Which project? Mix and match

The best, and most frightening, thing about the Extended Project is the freedom to choose what you want to do. Sometimes the thought of free choice can be quite daunting, but usually there are ways to narrow down your ideas by thinking about what you want to do in the future or what you enjoy. This activity will make you think carefully about which Extended Project is right for you. By matching people to potential projects based on short descriptions about their interests, subjects of study and future ambitions, you will begin to understand how to start thinking about your own project.

AIMS

This activity will help you to develop ideas for an Extended Project by making you think about some of the factors that need to be taken into consideration when choosing a project. It will also help to begin your thinking about different ideas for projects.

Task 1

Decide which student should select which project and give a reason.

Students	Project
1. Grace studies English, History and Politics. She is a keen member of Amnesty International and is interested in studying International Relations at university.	
2. Lydia studies Chemistry, Biology and Geography. She is really interested in animals and would like to study Ecology at university.	
3. Ben loves rugby. He studies Biology, PE and History. Ben is unsure whether he wants to go to university so plans to take a gap year. His father is from South Africa.	
4. Anna studies Sociology, Politics and Maths. She knows she would like to do a sociological investigation.	
5. Paul studies Art, English Literature and Language and History. He really likes all of his subjects and writes short stories in his spare time.	
6. Ethan loves technology. He studies Business, ICT and Art. He is also interested in fashion and is considered to have a 'unique' fashion sense by his friends.	
7. Amina studies Psychology, Communication and Culture and Music. At college she is part of a group that fundraises for a local charity and she loves the practical 'hands on' experiences this gives her.	
8. Liam studies Maths, English Literature and Dance. He wants to become a professional dancer and is interested in the history of different dance styles.	

Task 1 projects

a. Designing a website for a 'vintage' clothes shop.
b. Has hip-hop remained true to its roots?
c. Writing and illustrating a children's book.
d. Does racism still exist in South African rugby?
e. Is it ever right to prioritise wealth over human rights?
f. Organising a charity ball.
g. To what extent do invasive species have a negative effect on a country and is it right to kill them?
h. What does feminism mean to the modern woman?

Task 2

Once you have decided which project each person should do, think of two other project titles/ideas for each person, giving a reason for each of your choices.

Aims and objectives

This activity will help students develop ideas for an Extended Project by making them think about some of the factors that need to be considered.

Anticipated student responses

Task 1

1. Grace – e
2. Lydia – g
3. Ben – d
4. Anna – h
5. Paul – c
6. Ethan – a
7. Amina – f
8. Liam – b
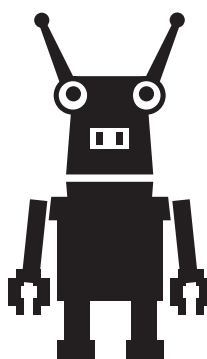
Task 2

There should be a range of suggestions for each of the case studies. Any project that is somehow related to the information given is acceptable as long as the students can provide the reason why.

Some examples could include:

- Grace doing a project about terrorism and human rights violations
- Anna doing a project about the voting intentions of young people
- Liam doing a dance performance

Variations/developments

- Students could complete the first task in pairs and then work in groups when completing the second task.
- Students could develop the task ideas further, by thinking about what each project suggestion might actually involve.

Relevant pages in Managing Extended Projects

Getting an idea: pages 10-11
Getting an idea form: page 12

Project development: what's the point?

One of the most important parts of the Extended Project is choosing the right focus and title. Personal experiences and views, future plans or your favourite author could all contribute to your project choice, but once you have an idea where do you go next? What do you do? It is important to have a clear understanding of where you want your project to end up and the direction you are going to take to get there. By making you think about and discuss various different projects, this activity will help you understand how to develop a project idea.

AIMS

This activity will help you develop your initial project ideas to so that you will have a clearer and more realistic idea of the sorts of questions you need to be asking yourself.

Task 1

In pairs, complete the tasks below for the project title:

'Is it time to get rid of the monarchy?'

1. Decide on an appropriate format for the project: a dissertation/extended essay, investigation/scientific research report, artefact/exhibition, performance or other event, giving a reason for your choice.

2. Suggest some improvements to the title. You might consider:
   - refining the title to give a clearer focus
   - developing the title to allow for more extended work
   - developing the title into a research hypothesis
   - developing the title to allow for analysis and synthesis of ideas/perspectives at an appropriate academic level
   - developing the title to promote the development of clear arguments for or against a proposition.

3. Identify some suitable aims and objectives for the project – what do you want to achieve?

4. Produce a list of the issues you might need to research to complete the project.

5. Decide if the project is safe, practical, ethical, accessible:
   - Safe: think about any potential hazards.
   - Practical: think about resources and facilities.
   - Ethical: think about whether your project may cause distress, and how you will respect people's right to choose not to be involved.
   - Accessible: think about the availability of research material and the breadth of material available.

Task 2

Pick a project from the lists below and complete the tasks opposite. It may be more interesting to select a title which is of interest to you but not something you specialise in.

List 1
An anti-racism poster
Are celebrity chefs changing the way we eat?
Are we safeguarding our children?
The effects of global warming

List 2
A design for a fashion advertisement
How has the music industry changed since 1960?
Impressionism
What is a black hole?

List 3
A soundtrack for a video
Is the media responsible for eating disorders?
A sponsored walk in aid of Cancer Research
Is genetic engineering unethical?

List 4
Portrait photography
Who is the best player in the Premier League?
Was the Iraq war fair?
The Amazon and its people

List 5
Choreography
What causes a recession?
Film in Franco's Spain
What evidence is there for the Big Bang theory?

Aims and objectives

This activity will help students develop a project idea further by making them consider important factors about the viability and progression of the project. It will help them understand the types of questions that need to be addressed in the planning stages of the project, while also aiding understanding of the different types of projects they could undertake.

Anticipated student responses

- There is a hope that students will have different ideas for the first part of the activity, but probably most will choose the dissertation/extended essay or investigation route. When discussing this as a class it may be a good idea to see if any other formats were discussed even if they were not chosen. For example, a student could produce an exhibition of artwork depicting the changing relationship between the monarchy and the people.

- Changes to the project title, aims and objectives, and what needs to be covered by the research will depend on the chosen format.

- Students may find detailing their research difficult. It may help if they do this in the form of a spider diagram where they can write down everything they think about when they look at the question, and then select the areas they think are most important.

- The second part of the activity will encourage more creativity and answers will depend on the project titles chosen.

Variations/developments

- These activities are well suited to pair work but can also be undertaken individually or in larger groups.

- For Task 2, pairs or groups can be given one of the lists of four projects to work on.

- Students don't necessarily all have to complete the activity for the same project title; they could start with the second part of the activity and choose a title from the lists.

- Task 2 could be developed with students swapping their chosen ideas with the pair next to them, who add their own thoughts before swapping back. This will encourage students to share ideas and make them realise that people can think very differently about projects.

Relevant pages in Managing Extended Projects

Chapter 1: pages 10-24

Getting an idea: flowchart

There is always more to think about than you might realise when starting an Extended Project. It's not enough just to think about what you are interested in, you also need to consider limitations imposed by your college, school or the qualifications you are taking, the types of resources available and your motives for picking the project.

This activity will encourage you to think about your project idea and format. By following the flowchart and answering the questions, you should be able to develop some initial project ideas that can be discussed with your supervisor.

AIMS

Follow the flow chart, answering the questions where necessary.

Choosing a format

Extended Projects can take a variety of forms. Examples include an extended essay or dissertation, report of an investigation, creative writing, an ICT product, a performance or an event.

Are you doing an Extended Project as part of another qualification like a Diploma?

Yes

You must check to see if your Extended Project has to relate to the principal area of learning or proposed career path of the qualification you are taking. Write down any restrictions you might face when choosing a project.

No

Although you can choose what project you do in theory, in practice you may be restricted by the resources at your college or school. Write down any restrictions you might face.

Are you hoping to link your project to higher education plans rather than develop work skills?

Yes

No

It is worth remembering that universities are often more interested in Extended Projects that include academic research and writing skills.

If you are hoping to use the project to develop employment-related skills such as leadership, organisational or interpersonal skills, a more practical project could be right for you, such as planning an event or marketing a product.

Now write down which format would suit you.

Think about what you are good at – which project is right for you? Are you creative, practical, technological?

Getting an idea

Now you've thought about the project format that is right for you, you need to think about the project idea. Write down three things that interest you, for example, you might put 'football' or the idea that people have 'rights'.

Now write down a reason why you are interested in the three things you have chosen, for example, you might be interested in football because you play it, or in 'rights' because you've talked about it in philosophy or citizenship.

Select one of your interests. Can you think of three potential projects for this interest? For example if you chose football, potential projects could be about women in football, football hooligans or international players in the premiership. Write down three potential projects for your chosen interest.

Now develop these ideas further. For each of the three potential projects think and make a note of the following:
• The issues, theories or people that may be involved in the project.
• The practicality of the idea – will there be enough resources available?
• Are there any risks involved?
• Do you have the skills for this project?
• Will you be able to complete it in the time available?
• What areas would you need to research?
• Can you think of a suitable question/title?

Develop one of your ideas further by writing a few paragraphs detailing your project idea and what it might involve.

This idea may not end up as your final project but this is a good way to get started!

Finally, you might want to share your project idea with someone else and see if they have any suggestions that might help you develop your ideas!

Aims and objectives

This activity will help students think about the format their project should take, the restrictions they may face, and the factors they need to be borne in mind when coming up with a project idea. The flowchart will help students to develop some initial project ideas that can be discussed and developed with their project supervisors.

Anticipated student responses

Starting the project
Students may not be aware of the restrictions they face if they are doing the Extended Project as part of a qualification. Teachers should be able to advise and guide students in this position.

Format
The major appeal of the Extended Project is that project choice can be matched to student needs and interests. Choosing a format that works for them as an individual is very important (although it is recognised that schools and colleges may be limited in what they can deliver) so students should spend time thinking about the benefits of completing an Extended Project.

Getting an idea
As this part of the exercise encourages students to focus on their own interests, the responses will vary. It may take a little encouragement to get some students to think about what actually interests them, particularly because they have to provide reasons. These reasons are important as they help students to develop their project idea further. Students should be encouraged share their project ideas.

Often students are not given enough time to sit and think. However, the thinking is an important part of this activity so it's important not to rush the process.

Variations/developments

- The flow chart could be broken down and tackled in sections, with each section and its questions making up a small part of a lesson.

- The 'Getting an idea' part could be taken further by getting students to comment on each other's ideas, thus helping them to think of a variety of different ways to approach a topic. Different ideas help students to think about factors they may not have considered.

Relevant pages in Managing Extended Projects

Getting an idea: pages 10-12
Safe, ethical, practical, accessible? pages 13-14
Evaluating your project idea: page 15
Developing a focus: pages 16-17

Focusing your project: twenty questions

The central thinking skills that are used and assessed in Extended Projects are:

- **Describe:** give a detailed account of something in words.
- **Analyse:** study the elements of something: break into components, make comparisons, consider perspectives, assess evidence and draw conclusions.
- **Synthesise:** bring different ideas together to make new combinations and solve new problems.
- **Apply:** a type of synthesis in which an idea is used to achieve an outcome e.g. a theory is used to explain evidence, a technique is used to produce a result.
- **Evaluate:** make judgements from evidence, assess effectiveness or quality.

These thinking skills work in the logical sequence above: in order to evaluate, you must first describe and then analyse, synthesise or apply. This sequence can apply at any stage of the project – planning, research, development and review.

The key to a good project is finding a clear focus and asking the right questions about the topic you have chosen. This activity helps you to use different questions to describe, analyse, synthesise, apply and evaluate information. It will help you plan the content and structure of your Extended Project to include all these essential thinking skills.

The wise man doesn't give the right answers, he poses the right questions
Claude Levi-Strauss

Task

1. Choose a topic you are already familiar with – something concrete and familiar to you will probably work best. Here are some ideas:

- Comedy
- Horror films
- Castles
- Volcanoes
- Skateboarding
- Illusions
- State/private education
- British pubs

It is a good idea to select a narrow focus within the topic to make the exercise more manageable. For example, you could choose two specific films that you are familiar with rather than the whole 'horror film' genre.

2. Now think of five questions on your chosen topic for each of the thinking skills categories outlined above (description, analysis, synthesis/application, evaluation). You should be able to generate at least twenty questions. Use the guide 'Questions, Questions' to help generate more questions if you get stuck.

3. Can you give brief answers to all these questions? If not, you'll need to exclude any you can't answer or do some quick research before you go any further.

4. Study your list of twenty questions and use them to develop some ideas for a few different essay questions or titles for the topic. These should be phrased so that they demand some analysis, synthesis/application and evaluation. For example:

> *Which is the most effective parody of the horror film genre: 'Shaun of the Dead' or 'Scary Movie'?*
>
> This question is evaluative. However, in order to reach the point where you can evaluate effectively, you would first need to **describe** the films, **analyse** relevant features of the films such as the parody techniques used and their effects, research the views of critics and **synthesise** the information you have analysed into a coherent, balanced argument.

5. Using your list of twenty questions to help you, write a bullet point or mind map essay plan to answer your question. Make sure that the plan includes a balance of description, analysis, synthesis, application and evaluation and ask someone else to check that you have applied the thinking skills terms correctly in your questions.

6. When you are happy that you understand and can give examples of questions for each of the different thinking skills, you are ready to start generating questions and planning the structure for your own project.

Questions, Questions

Some descriptive questions:

- What do I understand by x?
- Where and when did/does x happen?
- What is the history of x?
- What is the purpose of x?
- What does x do?
- What are the characteristics of x?
- How can we categorise x?
- What theories of x are there?
- What techniques have been used to investigate x?
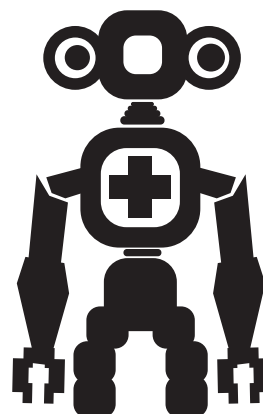
Some questions for analysis:

- What evidence can we establish for x?
- What conclusions can we draw about x from this evidence?
- What other interpretations of x are there?
- How do the parts of x function together?
- How is x different from y?
- Who/what causes/is responsible for x?
- What are the factors that influence x?
- What are the effects of x on...?
- What images represent x, or what does x represent?
- What general principles or rules can we infer from x?
- What is the function of x in a system (such as an organism, an organisation, society, an ecosystem, etc.)?

Some questions for synthesis/application:

- How does x combine with y?
- What is the likely impact of y on x?
- What new techniques could be used to investigate/represent x?
- What might be the future of x?
- What would happen to x if...?
- How might we use theory z to explain x?
- Overall, what does the literature conclude about x?

Some questions for evaluation:

- What are the advantages/disadvantages of x?
- What criteria would be appropriate in order to judge x?
- Is x acceptable/fit for purpose? If so/not, why?
- What is the best form of x for this purpose?
- Is x better than y?
- How might x be improved?

In your Extended Project, the questions you choose to ask will depend on the main question you want to answer. For example, you might want to ask fewer questions but make more comparisons (with alternatives a, b, c, etc.). For a practical project, the focus of your questions will be as much or more on the application of techniques and use of materials as on content or topic.

Aims and objectives

A common problem for Extended Project students is that they choose a descriptive question, which can be answered by simply collecting and communicating factual information. The resulting project often falls short of level 3 thinking, which should involve analysis, synthesis, application and evaluation as well as detailed description. This activity aims to:

- familiarise students with the more sophisticated level 3 thinking skills

- enable students to apply thinking skills by asking appropriate questions

- enable students to explicitly plan for a logical pattern of description, analysis, synthesis, application and evaluation in their writing.

The activity could be done at an early stage in the project planning process, prior to writing the project proposal.

Anticipated student responses

The key to this activity is for the student to select a topic that is sufficiently focused, interesting and familiar. It can be anything at all, no matter how frivolous. It might be a topic that they enjoyed studying as younger students, a leisure activity or form of entertainment. It is not necessary for the topic to be broad enough for an Extended Project, as this is a short practice activity.

The technical terms used in this activity might confuse some students at first, but the aim is for them to use and become familiar with these terms, so it is worth persevering. The page 'Questions, Questions' can be used to support or differentiate between students according to the ease with which they grasp the ideas – some might need to start by looking at this list, while others might grasp the basic idea more easily and use the list only when they run short of ideas.

Variations/developments

1. Task 4 is quite challenging. If students have difficulty with this, they could be given five or six different questions on a topic and asked to decide which one has the most scope for analysis, evaluation and so on.

2. Students can return to the 'Questions, Questions' list for ideas whenever they feel stuck during the research and development stages of their project.

3. Use the techniques in this activity with 'Thinking Maps' (see pp. 20-22) as part of the 'Twelve steps for planning and structure' on pp. 107-8.

Relevant pages in Managing Extended Projects

Starting the project: pages 18-26
Writing and presenting the project: pages 98-102

Thinking maps

A **mind map** is a hierarchical diagram that starts with one central idea. Mind maps use key words or short phrases written along the branches. Each branch flows into the next like a tree, with thicker central branches leading to thinner peripheral branches. A mind map is organised visually, using different images, colours and styles to show distinctions. Mind maps are useful for taking notes and learning information related to a single topic. As they are non-linear they are also useful for figuring out aspects of an idea and generating levels of detail before organising them into a linear essay plan.

> Mind maps and concept maps are visual ways of representing the relationships between ideas. This activity helps you to practice using mapping techniques to explore your topic and to start figuring out a structure for your project.

A **concept map** is slightly different. It is non-linear again, but it does not necessarily start with a single central idea, so it may have several inter-connecting nodes. Like the mind map it does usually show hierarchical relationships – with more general concepts usually placed at the top of the page – but it can also show sequences, interconnections and so on. Each concept is expressed in a key word or phrase, enclosed within a box or circle with connecting lines to related concepts. Arrows can specify the direction of hierarchy or flow between ideas. Each concept is connected to the next via a link word on the line that specifies the relationship between the two. These features make the concept map more useful for unpicking complex interconnected topics than the mind map, because it explains the nature of all these different relationships rather than just connecting ideas in a hierarchy. It can be organised with different colours and styles if needed, but this is not necessary.

Mind and concept maps can be drawn by hand or with mapping software. Wikipedia lists some at http://en.wikipedia.org/wiki/Mind_mapping_software. The mind map overleaf was produced with *Mind Node* – a free mind map application for Mac OS that can be downloaded at http://www.mindnode.com. The concept map was produced with IHMC CmapTools – a free concept map application that can be downloaded at http://cmap.ihmc.us/.

....

Task

Look at the example mind map and concept map overleaf and decide which technique most appeals to you. You could research other examples to see how the maps can be used in different ways. Then create a concept map or mind map for your own project idea.

> There is no 'right' way to organise the map – its value as a thinking tool is in how you make sense of the connections between different ideas for yourself. You can use the map to help you build an overview of a topic, to help you generate a project question, or to help you plan and structure your writing. You could organise your map with categories such as the Extended Project assessment objectives, project sections, topic content or themes, types of question, thinking skills (as in the mind map overleaf) or link words (as in the concept map overleaf).

A simple mind map

The mind map below has been used to generate some questions a student might ask when deciding whether or not to do an Extended Project. The questions have been categorised according to the different thinking skills they illustrate. The Extended Project Qualification requires all these thinking skills, so they are useful to know. Note that the questions are shortened. It is best to use key words and short phrases as far as possible to keep the map visually manageable. You could also use images to show ideas, colour to show distinctions between sections and vary the length and thickness of lines and text to indicate the importance of ideas.
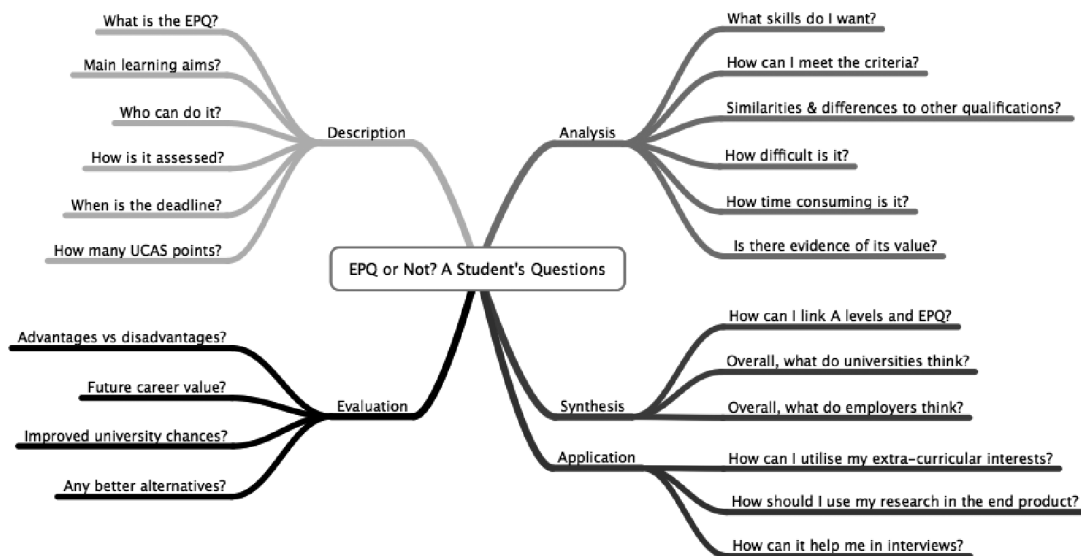
A more complex concept map

This map shows a range of different ideas about the Extended Project, including what it is and what it is useful for, what type of work it involves and how the assessment objectives are organised. It includes hierarchies, interconnections and process sequences and shows the nature of the link between each concept. The main process through the four assessment objectives is shown in bold.
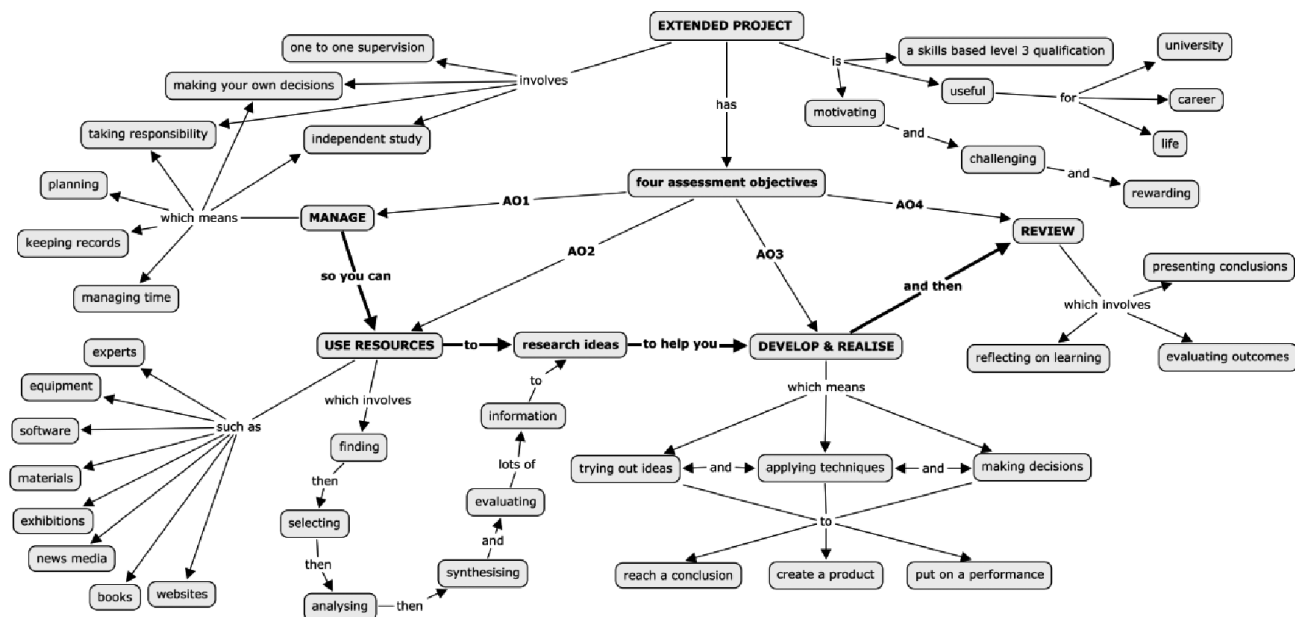
Aims and objectives

Mind maps and concept maps are visual ways of exploring a topic and representing the relationships between ideas. This activity helps students to understand how two different mapping techniques work and use one of them in planning the project. The activity can be used in different ways at different points in the project, for example:

- Recording notes during the initial exploratory stages of research

- Surveying a topic in preparation for developing a question

- Generating ideas in preparation for planning a process

- Figuring out relationships between ideas in preparation for planning a linear structure for writing.

Anticipated student responses

Mind maps can be more accessible than concept maps for some students because they may be less complex. Some students could be put off by exhortations to include visual images in the mind map because these are perceived to be time consuming. In fact, it is not necessary to use images or to spend a long time on the layout. Most students will respond more favourably to the idea of using software to produce the map (see below for more information). These techniques will only be useful to students if they can see the point in using them, so it is worth spending some time demonstrating how they can be used to support the whole project planning and writing process. Students could be encouraged to personalise the techniques or to find alternatives that suit them rather than following a particular style guide.

Variations/developments

1. Start by asking students to produce a mind map or a concept map for a topic provided by you. The results can be compared to see how different people conceptualise topics differently and to encourage students to learn new ways of thinking from each other before setting out on their own topics.

2. Students could print out a copy of the initial map, then add to and adjust another version as the project develops. These can both be included in the project portfolio to show the development of ideas through the project.

Relevant pages in Managing Extended Projects

Starting the project: pages 16-17

Writing and presenting the project: pages 98-102

Further information

Many schools and colleges already use mind-mapping software. IHMC CmapTools is a simple and effective concept mapping application that could be used collaboratively in the classroom. It can be downloaded free for private and commercial use from http://cmap.ihmc.us/. Alternatively, students could download free software for use at home. See http://en.wikipedia.org/wiki/Category:Mind-mapping_software for a list of mindmapping programs.

Managing the project

A matter of timing: improving your time management

"I'll start my homework later – it shouldn't take long". Many of us will have found to our cost that it does and we end up rushing it or desperately looking for excuses to explain why it's late. There is no need for that – now is a great time to improve the way you manage your time because the Extended Project mark scheme will actually reward you for this skill.

AIMS

The aim of this activity is to help you reflect on your time estimation habits, so that you can learn to plan ahead more accurately.

Task 1

a. Use the table below to estimate how long each of the tasks will take – then log how long they actually took.

	Estimated time – E	Actual time – A
Sing 'happy birthday'		
Count backwards in threes from 352		
Find a definition of the word 'prognosticate'		
Make up a new limerick		
Draw a detailed floor-plan of your home		

b. Count up how many times you underestimated and overestimated the time it would take. On balance, are you an under-estimator or an over-estimator?

c. Identify your most accurate and most inaccurate estimates.

d. What sorts of tasks are more difficult to estimate? Why?

e. If you have time, you could work out the difference (E – A) for each estimate and calculate each difference as a percentage of the actual time taken. Then take an average of these to work out your overall estimation accuracy rate.

Using the ORP method

Many of us are habitual under-estimator. This is because we tend to think of the best-case scenario when we are figuring out how long it will take to do something, and we fail to account for interruptions, feeling tired, lacking motivation, unexpected events and so on. One way of trying to avoid this bias is to use the ORP method, which is a project management technique for estimating how long a task will take (this estimate gets easier with experience, of course).

First, you need to come up with three different estimates:

O = Optimistic time – how long the task would take in an ideal world.

P = Pessimistic time – the worst-case scenario.

R = Reasonable time – that is, the typical time that the task might take.

Using these three numbers, calculate a weighted average using the formula:

Expected Completion Time = $(O+4R+P)/6$

Task 2

Applying the ORP method to your project

Identify one task that needs to be completed for your project. It should be something that can be done in a matter of hours rather than days or weeks. Use the ORP method to calculate your expected completion time before you start, and then keep a time-sheet as you work on the task. Note down all the productive time and all the wasted time that is used during the working period. When you have finished the task, look back at the ORP calculation, and compare it to the total time you spent. How close was your estimate?

Aims and objectives

The point of this activity is not for students to estimate time with pinpoint accuracy, but for them to understand more about their habitual thinking patterns about time. It is particularly difficult to estimate the time taken on research and creative activities. The activity can lead into a discussion about how to plan and control time spent on such open-ended aspects of the project.

Anticipated student responses

Some students will already be able to plan their time effectively, and may have no need for the activity. However, many find it difficult to estimate and control the amount of time they spend on project work. This activity will not necessarily solve that problem but it will help students to become more aware of their own tendencies. It will also focus their attention on the practice of estimating and planning for time, which is something that poor time managers often fail to do. It is useful to do this activity quite early in the process of researching and writing the project proposal. It is worth talking about time management habits in individual tutorials first. You can then target the activity at those who have identified themselves as having difficulty with planning ahead and time management.

It is not necessary for students to complete all the tasks in the time estimation activity, so you can limit the time for these to ten minutes as a lesson starter activity. Challenge students to complete tasks in the order that they think will be most productive (i.e. starting with the short, easy-too-estimate tasks), to complete as many as possible in the time allowed.

The ORP method is most likely to be useful for practical or written projects that can be broken down into a series of time-limited tasks. Creative work is more difficult to quantify however, particularly for inexperienced students. A good rule of thumb if students really have no idea how long a creative task will take, is to factor in all the predictable technical issues (e.g. waiting for paint to dry), then to come up with their best estimate and then triple it.

Variations/developments

Use the activity in preparation for planning research time. Set students a small independent research task to do for their project and ask them to estimate and then record the amount of time it will take. Students often underestimate the time needed for the project research process, because they do not realise that research is not simply a case of typing a word into Google and picking the first search result. They need to understand that research should be a process of finding the right questions to ask, finding the right ways to ask those questions and then sifting through the results to find the answers they need. This is an open-ended process that can expand to fit the time available — so they need to combine a structured, goal-driven approach with limits on the time they can give to it.

Relevant pages in Managing Extended Projects

Creating a project timeline: page 29
Project task list and Gannt chart: page 31-32

Prioritising tasks: Urgent/Important matrix

Start using this technique to reflect on your habits early in your project, use it to prioritise as you go, return to it when deadlines are looming and the pressure is on. You can also use the completed matrix as evidence when you come to evaluate your time management skills.

This is a really useful technique for thinking about your work patterns and prioritising effectively so you can deal with urgent day-to-day work and deadlines as well as making progress towards your long term goals.

An Urgent/Important matrix

Important

Activities that help you achieve your goals

1. Important & urgent	2. Important but not urgent
3. Not important but urgent	4. Not important, not urgent

Urgent

Immediate action needed

Not urgent

Not important

....

Task 1: Using the Urgent/Important Matrix to reflect on your working habits

Week 1: Keeping a study diary

1. Identify your long-term goals for your time in the sixth form (e.g. achieving specific grades, developing skills for a particular career, gaining confidence in your communication skills, getting the grades you need for a higher education course).

2. Keep a study diary for one week. Write down everything you do while studying, and an estimate of the amount of time spent on each activity. Aim to update it daily. Be honest and include everything that takes up any of the time that you allocate to studying, including time spent on social networking, reading emails etc.

3. Alternatively, you could include all your free time (i.e. time that is yours to choose what you do) and keep records of all your social activities and any part-time work or family commitments alongside your study time.

Week 2: Reflecting on your working patterns

1. After one week, draw out an Urgent/Important matrix as shown above.

2. Using your diary, allocate each activity listed to one of the four boxes in the chart.

3. Calculate the total time spent on each box. Which box did you spend most time on?

4. Ask yourself – was this really the best strategy? Did you spend enough time on the important things – the tasks that will help you to achieve your long-term goals?

How might you need to prioritise activities differently to achieve those goals?

Task 2: Using the Urgent/Important matrix to help you prioritise more effectively

1. Write a to-do list using the Urgent/Important Matrix. This could be for the next two weeks or so. Include all commitments for all your courses, such as long-term coursework assignments that you will need to work on during this period and if you like, any other necessary commitments such as part-time work or family responsibilities.

2. Number the items in each box in priority order (1 is top priority). If you like, redraft the matrix with all the lists in the correct order to make it clearer.

3. Talk your categorising and prioritising decisions through with someone else such as your project supervisor or a friend. If you do this as a paired activity, the first person to speak should fully explain their decisions to the listener, and the listener should ask questions about those decisions to help the speaker decide whether these activities are all positioned in the right place. Then swap over.

4. Now that you have categorised and prioritised your to-do list, work out a schedule which allows you to prioritise as follows:

   Box 1: MANAGE these so that you keep to important deadlines.

   Box 2: FOCUS on these regularly so you can make progress on the important long-term projects. Build time into your schedule for them and stick to your plan.

   **Box 3 & 4:** AVOID these, do them last, or fit them into scheduled break periods.

Tips for managing workload

Email and social networking can be very distracting if messages pop up constantly when you are working on something that needs full concentration. These are usually box 3 and 4 activities! Allow yourself specific times for getting up to date on these and then log out while you work on other things.

In managing your Extended Project, you need to be aware of the way that new homework and coursework tasks will constantly drop into box 1, and if you are not careful, they will prevent you from focusing on box 2 activities. Revision for exams and work on your Extended Project will start off in box 2 but will slip suddenly into box 1 if they are not dealt with regularly. These tasks are so big that if you let them become urgent by leaving them to the last minute, you will be putting yourself under an enormous amount of pressure and won't achieve your potential.

There are two types of box 1 activities – foreseen (originally in box 2) and unforeseen (crises). If you schedule box 2 activities regularly, you can prevent these from becoming urgent. Your schedule is there to guide you but you need to be flexible too. Allow time in the schedule for unexpected but important issues. You may not be able to control all the crises that happen in your life, but you can minimise the impact of some of them.
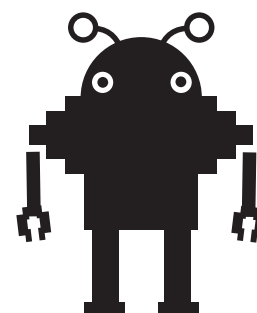
Aims and objectives

The Urgent/Important matrix is a very well-known technique in personal coaching and in business. It is sometimes called the Eisenhower matrix, after the quote attributed to the US president: 'What is important is seldom urgent and what is urgent is seldom important'. It is a simple, self-reflective prioritisation tool, which is most useful when introduced early in the project process, before prioritising and scheduling tasks. Encourage students to think about their workload as a whole rather than just their Extended Project during this activity.

Anticipated student responses

Students often find the Urgent/Important matrix an eye-opening activity when they use it for the first time. It is therefore useful to do the activity in pairs and to encourage the listener to really question and challenge the other student to justify their priorities.

Activity 1:
- Typically, many of us spend most of our time on activities that fall into categories 1 and 3 – the 'urgent' things. We may also spend more time on the things that fall into box 4 – the trivial, non-urgent, non-important and easy things that we do when we are procrastinating and pretending that we are doing something productive!
- This means that the area we are least likely to spend time working on is actually box 2, and yet this is where some of the most important long-term activities fall. These tend to be the big, daunting but distant challenges, such as exams and the Extended Project deadline. If students always avoid the box 2 tasks, they are unlikely to meet their true potential in studying or working life.

Activity 2:
- Box 1 is the most critical, and students will need to realise the importance of managing the activities that fall into this one, and the distinction between those that could be foreseen and those that could not.
- If tasks in box 2 are not prioritised, they will either move into box 1, or will just not get done. So it is important to keep a regular focus on these. Students may need help in seeing that these tasks can be broken down into smaller chunks when planning. These are easier to focus on and build a sense of achievement.
- Boxes 3 and 4 include trivial distractions from the important things we ought to be doing, and so we should avoid these. It is worth spending time discussing whether working when logged into email or social networking sites is helpful or not.

Variations/developments

Students could include their personal time commitments and social activities as well as their academic commitments. We wouldn't expect them to cut out social time, but they may find it helpful to reflect on the priorities they give to social activities and aim to achieve a balance.

Once students have learned the technique and used it to reflect on their existing work patterns, the matrix can be adapted for use in prioritising tasks for a weekly or monthly work schedule, to troubleshoot at times of high pressure, or to reflect on and evaluate working patterns at key review points during the project.

Relevant pages in Managing Extended Projects

Developing a focus: pages 16-17

Reference

The matrix is based on Covey S. R., 1989. *The Seven Habits of Highly Effective People*. New York: Simon & Schuster

Worst party ever: Critical Path Analysis

Most of us have been to at least one awful party. Hardly anyone turns up, the drinks are warm and the food is inedible. The band are stuck in a broken down van 50 miles away and the DJ's playing air guitar to an empty dance floor. Some proper party planning really could have helped! Now it's your birthday. Can you do any better?

A Critical Path Analysis is a project planning tool which calculates the longest ('critical') path of planned activities from the start to the end of the project. It identifies the earliest and latest times that each activity can start and finish to meet the project deadline. Any delay on the critical path will mean that you risk missing the deadline!

> **AIMS**
>
> This activity introduces you to the idea of Critical Path Analysis and will help you to see why planning ahead is important.

1. Imagine the worst party you ever went to, or spend a few minutes creating an imaginary 'worst party'. Identify all the things that went wrong and list them (see table 1, column 1).

2. Now think how that party might have gone better with more thorough planning beforehand? Try to think of at least one improvement that could be made for each problem and write these next to each one (table 1, column 2).

3. Next, imagine that you're the host and you're going to plan the next party. This time it's going to be the best party ever. Draw up a table (see table 2: you may want to make it bigger).

4. What do you need to do? In the box below are some points you may need to think about to get you started. Write down jobs for each one (table 2, column 1).

5. Give each job a code letter (table 2, column 2).

6. Give each job a time period – in days, perhaps – that you think it will take to complete. Remember that if you are waiting for other people or organisations to respond to you that you'll need to build in extra time in case they are busy. Perhaps allow a week for people to get back to you (table 2, column 3).

7. For each job, work out which other jobs must be completed before it can start (table 2, column 4).

8. Put the jobs into a flow chart like the one below. You could draw in pencil or use a computer so that you can redraft it as you go. You can now work out the critical path – i.e. the longest path from start to finish.

9. Now you know how long it will all take, you can set a date for the party and start organising.

Venue and equipment
Time and dates
Guest list and invitations
Music and entertainment
Food and drinks
Theme and decorations
Staff or helpers
Budget and fundraising
Health and safety ✓

A Critical Path Analysis diagram
Adapted from www.britannica.com
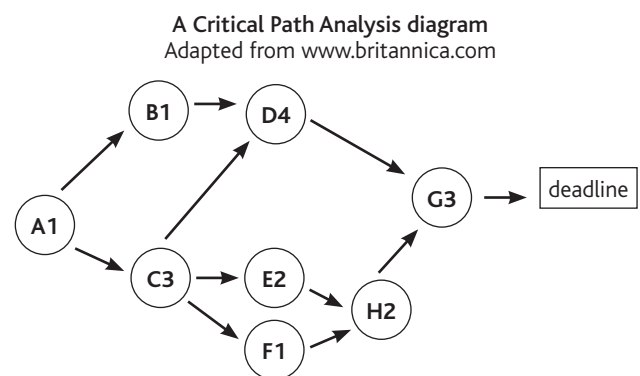
Letters show the job code
Numbers show the expected time period for the job

In practice, when you are planning a project, the deadline is often non-negotiable, so you need to do a Critical Path Analysis as early as possible. This will tell you when you will need to get started so you can meet that deadline. If time is short, you may need to 'fast-track' some activities by working on them in parallel, or allow extra hours at key points to get critical activities done in the time available. ✓

Carrying out a Critical Path Analysis

Use these model tables to draw up your own versions. You may want
to make these bigger so you have space to write all your notes.

Table 1: Worst party ever	
1	2
Column A: Party problems	Column B: Party improvements

Table 2: Best party ever			
1	2	3	4
Jobs to do	Job code e.g. A, B, C	Time in days e.g. 1, 2, 3	Jobs to be completed before this one can start: e.g. A2, B3, C1

Finally, draw your Critical Path Analysis flowchart

You could draw in pencil or use a computer so that you can redraft it as you
go. How long will the project take to complete?

Aims and objectives

- This activity introduces the idea of Critical Path Analysis and will help students to see why planning ahead is important if they want to complete a project well.

- It shows how to plan an event using the technique but the ideas are transferable to any project outcome.

Anticipated student responses

Students may object that they don't know how long things will take to complete in advance. This can lead into a productive discussion about the nature of planning – how it is necessarily flexible and subject to change and development. In particular, the more experienced they become with the plan-do-review cycle, the more skilled they will be at estimating the amount of time things take. It is worth pointing out that projects nearly always take longer than we think they will and so it is important to build in extra time for this. Also, when other people are involved, things often slow up even more.

Variations/developments

This can be done as a quick group activity in one lesson to familiarise students with the concept of planning before they start organising their own project. Students could present their ideas back to the class. Alternatively, it could be carried out as a more in-depth individual activity between sessions, with students reporting back and comparing their plans later.

Critical Path Analysis can be used as an alternative, or as a precursor to creating a Gannt chart plan as explained in 'Managing Extended Projects' (see pages 30-32). If these tools are used together, a Critical Path Analysis can help students to determine the order and timing of the tasks they need to put into a Gannt chart, which they can keep as a reference guide to direct and monitor progress throughout the project.

Relevant pages in Managing Extended Projects

Chapter 2: pages 28-39

Further information

If you have the time it is useful to teach students a few different planning techniques, which they can select from in planning their own project. They will develop much more independence if they can be helped to find and use a technique that works for them.

Bog snorkelling: risk assessment

Risk assessment is an important part of the planning process for any project involving practical work out in the community, in a laboratory or studio, or in the natural environment. The five stages of risk assessment are:

To carry out a risk assessment in preparation for assessing and minimising the risks that might occur in your own project.

AIMS

1. Identify the hazards in your working environment

2. Decide who might be at risk of harm from those hazards

3. Assess the risk: likelihood (very likely, quite likely, not very likely, quite likely, very unlikely) and severity (high, medium, low).

4. Decide what precautions can be put in place to minimise the risks. These should be proportionate to the level of risk. Think about supervision, safety equipment, training in equipment use and so on.

5. Decide what level of risk remains once these precautions are in place. If the risk is low and very unlikely, it will be safe to proceed with care. If not, you will need to take advice from an appropriate member of staff.

Task

You need to carry out a five-stage risk assessment for an imaginary bog-snorkelling contest with up 20 competitors and 200 spectators. Use the information and photograph here to guide you. You need to understand as much as possible about the event before you start. If you like, carry out some further research online. When you are ready, use the form provided to carry out your assessment.

BOG SNORKELLING

Competitors at the annual World Bog-Snorkelling Championships in Llanwrtyd Wells, Wales, have to swim two lengths of a 55-metre water-filled trench cut through the peat bog in the shortest time possible, wearing flippers, snorkel and mask.

'You're not allowed to swim with your arms, only your flippers, and you can't see anything so you keep bumping into the sides. It feels like miles, but it's only a couple of lengths. Some people wear wetsuits but the crazy ones do it in normal swimming gear – it's like swimming in stinky soup and it's really cold – bitterly cold.'

Competitor, Bog Snorkelling Championships

© UK Active Outdoors

Bog snorkelling: risk assessment

Name(s) ....

1. Identify the hazards	2. Decide who might be harmed	3. Evaluate the risks (how likely and how severe)	4. Precautions needed – e.g training, safety equipment, supervision	5. What level of risk remains? Is it safe enough to continue?

Aims and objectives

Students can carry out a hypothetical risk assessment in preparation for assessing and minimising the risks that might occur in their own projects. Assessing risk is only necessary for students doing practical projects that involve more potential risk than would normally be encountered during lessons e.g. unsupervised laboratory, studio, field or remote/community based work.

Anticipated student responses

The activity provides an opportunity for further research and group discussions, which will help students to think more broadly about the possible risks and their management.

Some issues specifically relevant to bog snorkelling that students should consider:
- Fitness, competence and responsibilities of contestants: rules, competitor declarations and age restrictions.
- Competitor's equipment safety: rules, restrictions, inspections.
- Poisoning or infection through ingestion of water: samples tested for pathogens at a laboratory.
- Hypothermia: space blankets provided for competitors, advised to wear wetsuits and bring suitable clothing. Shelter available.
- Heart attack upon entering the cold water: portable defibrillator provided and first aid staff trained in its use.
- Minor injuries such as cuts, grazes and sprains: competitors advised to wear wetsuits, first aider on standby.
- Infection of wounds already on the body: contestants required to cover any existing wounds with waterproof dressings prior to entering the water.
- Drowning: rescue diver on standby.
- Headbutting the pole used to mark the end of the trench (the pole is used to tell the snorkeller to turn for the return leg): the rescue diver shouts 'turn' when they reach the end.
- Crowd management for spectators: trained marshalls, signage & cordons around the water.

As the point of the activity is to familiarise students with the thought processes and procedures of risk assessment in a hypothetical setting, they will not necessarily be expected to produce an exhaustive assessment.

It should be stressed that this is a hypothetical activity. Without expert guidance, the activity is unlikely to produce a comprehensive assessment of all the risks involved. Also, a bog snorkelling contest is probably not an ideal Extended Project! If students wish to organise an event as part of their Extended Project, then they or a responsible member of staff should consult and follow the relevant guidelines in the Event Safety Guide, published by the Health and Safety Executive. It is free to download at: http://www.hse.gov.uk/pubns/priced/hsg195.pdf. This is primarily aimed at organisers of large music events with an attendance of 2,000 or more, but there is a section with guidance on small events on p153.

Variations/developments

Depending on your students' project ideas, you could substitute other activities for risk assessment, and students could be grouped by proposed working environment.

The activity leads naturally into students carrying out their own risk assessments. However, the instructions here are necessarily brief. Before students start to carry out 'live' risk assessments for their own projects, they will need to consult relevant policies, rules and procedures for safe working in the particular environment. You may want to use your own institution's templates/risk assessment procedures and give them copies of some completed risk assessments. Most importantly, if you are not a specialist in the area chosen by the student, it will be important for them to discuss their risk assessment with someone who is. This is one area where it is essential for students to get expert guidance. When they have completed the risk assessment to your satisfaction, you could stipulate that an appropriate specialist must sign it off before the project proposal is agreed.

Relevant pages in Managing Extended Projects

Using risk assessments: page 37
How to carry out a risk assessment: page 38
Risk assessment form: page 39

Three isn't a crowd: review groups

In this activity you will work in a group of three to self-assess and peer-review each other's work at key points in the project.
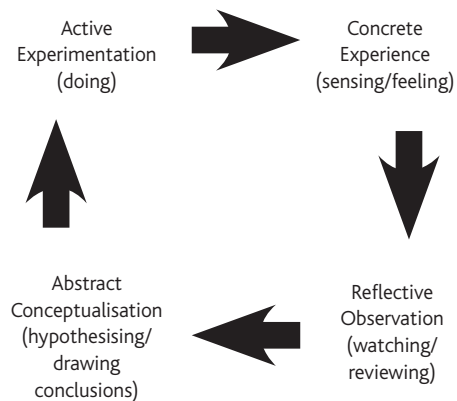
Aims:
1. To develop skills of independent judgement about your work and confidence in discussing your work with peers.
2. To encourage you to work with and learn from your peers.
3. To make sure that you are well prepared for review meetings with your supervisor.

Why is it helpful to do self-assessment and peer reviews?

Your Extended Project is designed to be an experiential learning process. This means that you try ideas out for yourself and learn from your own experience. Kolb (1984) described experiential learning as a cycle like the one opposite:

You also need to reflect on your experiences, develop new ideas from them and test those ideas out. Regular self-assessment and peer review sessions help you to do this.

Active Experimentation (doing) → Concrete Experience (sensing/feeling) → Reflective Observation (watching/reviewing) → Abstract Conceptualisation (hypothesising/drawing conclusions)

Reference: Kolb, D. A., (1984) Experiential Learning: Experience as the Source of Learning and Development. Englewood Cliffs, N.J.: Prentice Hall

What you need to do

1. Gather all your work together and consider how it helps you to fulfil the Extended Project assessment criteria.

2. Next, you need to complete a pre-review self-assessment.

3. At the review meeting, you will show your work to two other students. They will help you to decide whether you have enough evidence to show your learning, and help you to see your work from different perspectives and to develop new ideas. They will complete the peer review and together you will negotiate comments to be written on your review sheet.

4. You will help the other two students to review their work too.

5. After the review meeting, you should have a good idea of the strengths and weaknesses of what you have done so far, and you will be able to set yourself some targets for the next stage of the project. You will now be ready for a productive review meeting with your supervisor.

Assessment objectives for the Extended Project

AO1: Manage the project
Project planning and time management

AO2: Use resources
The way you collect information and use resources such as books

AO3: Develop and realise
Developing an idea and producing an outcome

AO4: Review
Evaluation and presentation

Extended Project peer review

Pre-review self-assessment		Peer review		Negotiated comments (presenter and peer reviewers decide together what is written)
Presenter: answer these questions for the current review cycle	Yes Some No		Is there enough evidence to support this judgement?	
1. Have you spent sufficient time and made efficient use of time you have spent on your project? (AO1)		1 2 3 4 5	Yes Nearly No	
2. Have you kept your production log/progress record/activity log up to date? (AO1)		1 2 3 4 5	Yes Nearly No	
3. Have you regularly referred back to your initial plan and made adjustments when necessary? (AO1)		1 2 3 4 5	Yes Nearly No	
4. Have you achieved the targets you set yourself at the last review? (AO1, if applicable)		1 2 3 4 5	Yes Nearly No	
5. Have you made good progress towards your overall project objectives? (AO1)		1 2 3 4 5	Yes Nearly No	
6. Have you organised your research notes effectively? (AO2)		1 2 3 4 5	Yes Nearly No	
7. Have you spent time reviewing and reflecting on your notes to refine your ideas? (AO2)		1 2 3 4 5	Yes Nearly No	

Pre-review self-assessment	Peer review					Negotiated comments (presenter and peer reviewers decide together what is written)
Presenter: answer these questions for the current review cycle	**Yes** **Some** **No**			**Is there enough evidence to support this judgement?**		
8. Have you considered a range of possibilities for your project? (Answer any that apply) Alternative titles and/or formats (AO1) Types of research sources (AO2) Techniques or methods (AO2/AO3) Technologies or materials (AO2/AO3) Perspectives or arguments (AO3)	1	2	3 4 5	Yes	Nearly No	
9. Have you fully referenced every idea, quote or image that you have used or adapted? (AO2)	1	2	3 4 5	Yes	Nearly No	
10. Have you redrafted and edited any written work to be reviewed? (AO3)	1	2	3 4 5	Yes	Nearly No	
11. Have you checked spelling, grammar, punctuation, syntax and paragraphing in any written work to be reviewed? (AO3)	1	2	3 4 5	Yes	Nearly No	
12. Have you formatted any written work clearly, consistently and logically? (AO3)	1	2	3 4 5	Yes	Nearly No	
13. Have you tried different ways of organising and presenting your project? (AO3/AO4)	1	2	3 4 5	Yes	Nearly No	
14. Have you reflected on your learning and set targets for the next review? (AO1/AO3/AO4)	1	2	3 4 5	Yes	Nearly No	

This is a self-assessment, peer review and support technique, which takes place over a number of sessions throughout the project. It requires some set-up time to introduce the rationale so that students will understand the reasons why they are doing the activity and start to take ownership of the assessment process.

Aims and objectives

1. To develop students' skills of independent judgement about their work and confidence in discussing their work with peers.

2. To encourage a collaborative and supportive atmosphere between Extended Project students who can be susceptible to feelings of apprehension and isolation.

3. To make best use of the teacher/supervisor's time with individual students by ensuring that students are well prepared for review meetings.

1. Timing the process

The activity works best if the cohort is working on their projects over two or more terms, to a common deadline. This will allow an introductory session plus three half-termly review cycles during the project process, so students can become confident with the skills required. The review cycles can be timed to precede formal review points with the supervisor.

2. Introductory session

Explain the aims of the process carefully. To help students understand the importance of treating review activities seriously, it may be helpful to introduce the basics of a model such as Kolb's Experiential Learning Model (see student guidance). Explain that the Extended Project Qualification (EPQ) is based on this approach to learning. The learning process can start at different places in the cycle but typically starts with concrete experience. To learn from experience they must also review and reflect on that experience and use their learning to generate and try out new ideas.

3. Learning to review

Students need to be familiar with the EPQ assessment objectives and criteria. Emphasise that this is a review process, not an assessment. Check that they understand that they will not be marking the work. The aim is to be as objective as possible in judging the substance of the evidence that supports the presenter's self-assessment. They may have suggestions on how to develop or improve the work. Criticism must be constructive, not negative, so it is worth spending time setting up ground rules and expectations at this point. It is equally important for peer reviewers to consciously avoid being too generous about their friends' work, as this will not help to achieve objectivity in relation to their own work.

4. Setting up review groups and scheduling sessions

Set up evaluation groups of three students for the first review cycle. Groups of three work well because there are two people to help make an objective assessment, and there is more incentive not to let the others down. Any larger, and the group review process becomes too lengthy. Rearrange the groups for each cycle so that students can work with different people and see how the project criteria can be applied to different project topics or outcomes. The first review will be quite quick – perhaps 20 minutes each. Each subsequent review will take longer. The third review could take up to an hour for each student so may need to be organised over a few sessions.

5. Preparation for review groups

Each student should spend some time collecting together everything which could count as evidence of the work that has been done so far – production/activity log/progress record, notes, sketches, photos, copies of emails, sections of written work, records of any practical work etc. Work could be organised into up to four categories or sections, corresponding to the four assessment objectives. The student should then complete the pre-review self-assessment (the first column in the assessment table). They could be encouraged to add questions or adjust the wording to suit the project.

6. At the review group session

The pre-review self-assessment is given to the peer assessors, and the work is shown. There is no need to create a slide show presentation or to mount a display; it can be laid out on a table or be made accessible on a computer. The assessors are given sufficient time to read through, examine evidence, ask questions and discuss the work with the presenter. They decide whether they agree with the self-assessment and whether the presenter has provided enough evidence to support the judgement that has been made. They can jointly record their judgements and negotiate comments with the presenter to be added to the review sheet. The presenter may want to make additional notes of any questions and suggestions from the discussion and should keep a copy of the review sheet.

7. After the review group

The presenter uses the review sheet and any notes to produce targets in preparation for the formal review meeting with the supervisor. Copies of the review sheet and any targets are given to the supervisor in preparation for the review meeting.

References

Kolb, D. A., (1984) *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, N.J.: Prentice Hall.

Chapter 3

Using sources

Never judge a book by its cover: using contents pages

Students will often dismiss books without even looking at them properly because the title is not the exact same title as their project. This activity will help you understand that a book which on first glance seems irrelevant, could in fact be a goldmine of useful information.

Jack decided to do an Extended Project that was linked to the war in Afghanistan. He thought about his question carefully and finally decided to focus on the issue of whether or not it was right for America to intervene militarily in Afghanistan.

As he was progressing with his project research he came across a book called 'Why Nations go to War' by John G. Stoessinger. 'A perfect book for him' I hear you say, only Jack didn't agree. He decided that, as Afghanistan was not in the title, the book would not be relevant to his project. It was only after he was encouraged to look at the book more carefully that it dawned on him that not only were parts of the introduction useful but also some of the chapters.

This activity should help you avoid the same mistake as Jack.

Look at the contents page provided and then try the following two tasks.

1. Identify which pages might be useful for each of the following project titles.

a. The 'War on terror'

b. The role of the UN

c. The moral responsibility of rich countries to help poor countries

d. Human rights abuses

e. Globalization and the environment

f. Humanitarian intervention

g. Scottish Nationalism

h. The role of women in war

i. Nuclear weapons

j. International security

k. World War II

l. The Cold War

m. Globalization and the political community

n. The world economic crisis

o. Globalization and culture
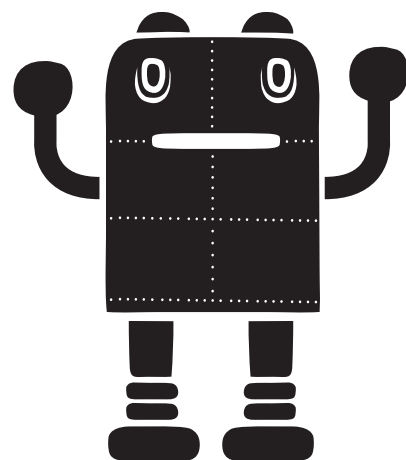
2. Suggest five other project titles that this book might be useful for.

Baylis, J., Smith, S., Owens P. (2008) *The Globalization of World Politics: An introduction to international relations* **(4th Edition) (Oxford: Oxford University Press)**

Aims and objectives

This activity will help students use contents pages effectively to locate relevant information.

Anticipated student responses

These are just some suggestions; other pages will also be useful.

a. 'War on terror'	70, 210, 370
b. The role of the UN	36, 54, 312
c. The moral responsibility of rich countries to help poor countries	192, 468, 522
d. Human rights abuses	506, 522
e. Globalization and the environment	350
f. Humanitarian intervention	522
g. Scottish Nationalism	402, 542
h. The role of women in war	262
i. Nuclear weapons	70, 210, 386
j. International security	226, 490
k. International law	278
l. The Cold War	54, 70, 386
m. Globalization and the political community	542
n. World economic crisis	450
o. Globalization and culture	418

Variations/developments

A follow-up lesson could involve a trip to a library for students to locate books and articles. Alternatively, students could bring a relevant book to a lesson and use the contents page to locate the pages that they think will be useful.

Relevant pages in Managing Extended Projects

Taking notes: pages 43-44

Further information

Students often think that unless a whole chapter or whole book is dedicated to their project then the information is useless. Try to encourage students to read through sources very carefully; some will contain lots of useful information but those that contain one pertinent sentence or paragraph may also prove important.

Analysing written sources

When researching a topic we often spend a lot of time looking for sources. Finding useful sources is a very important part of the process, but spending time actually making notes and analysing our sources is equally important. For example, the subject and purpose of the text need to be identified and you also need to consider whether you are looking for a narrative of events or evidence of a particular argument.

This activity will help you use sources effectively in your project by taking you through the analysis of a specific piece of text. It will help you to consider the messages communicated through the text and to think critically about its content.

Read the article below and then complete the following tasks:

1. Write a few sentences describing what the article is about.
2. Comment on the author. Who has written the article? Are they an expert in their field? Do they work for a reputable institution or organisation?
3. Comment on how up to date the information is. When was it written and on what information is it based?
4. Comment on the publisher. Where was it published and by whom? Why would that be important?
5. Comment on the target audience. Who is the article aimed at? Is it a general audience or more specialised? How can you tell?
6. Write a few sentences summing up the conclusions of the main argument in the article, making sure you look up any words you don't understand.
7. Is the evidence based on fact or on subjective opinion? Find any evidence used in the article to back up the argument that is being made.
8. Finally, to what extent do you think the author is objective and impartial? Can you identify any alternative opinions in the article?

If you have access to a computer you could do more background research on both the author and publication.

These rioters are Tony Blair's children

Nihilism and disorder have been fostered by the state

Three years ago I interviewed black Caribbean and white working class boys around the country – the very boys who recently took charge of our streets – for a think-tank report on why these boys are failing. During my investigations, I got to know one south London gang in particular. Am I surprised these riots have taken place? Not at all. I am only surprised they did not happen sooner. In fact so convinced was I of the danger that I stocked up on tinned food, fixed my old fashioned, wooden shutters and bought a baseball bat. I am glad I did. Last night a gang carrying machetes were on patrol only two streets away.

The young men I interviewed had very obviously failed to make the transition to manhood and a successful adult life. Their failure leaves them disengaged from society and its values. The majority find themselves trapped in an extended, semi-criminal adolescence well into their 20s and 30s. The former Mayor of London, Ken Livingstone, has been quick to blame this sudden explosion of violence on Conservative tax cuts. He has a nerve. These young men came of age during the thirteen years of Labour. They are Blair's children and the Left's creation. It is not deprivation that has stunted their lives, but the policies of the previous government in three key areas – school, work and home. As one boy said to me, 'I did not want this life. It just happened to me.' Here is how.

P.T.O. >>

To understand the mayhem on our streets look no further than a set of figures on literacy rates that came out a week before the riots began. Teaching a child to read and write is not difficult or expensive. Poorer countries than ours manage to do it. The statistics in the UK are staggering. A full 63 per cent of white working class boys, and just over half of black Caribbean boys at the age of 14 have a reading age of seven or below. How does that translate to violence on our streets? Humiliated in lessons, the young men I interviewed either dropped out or were excluded. They then spent their time hanging around on the streets – only turning up to school to sell drugs or stolen goods.

… The second factor is the change in Britain's job market. Forty years ago a young man could leave school at 16 with few, if any, qualifications – then get a job in a factory and at 19 support a wife and child. Now there are far fewer such jobs in our economy. This leaves working class black and white boys particularly vulnerable to the other major change in the job market – immigration. Under Labour, the arrival of large numbers of skilled capable immigrants willing to work for low pay has hit them hard and left them sidelined. According to the ONS, of the 1.8 million new jobs created over the Labour years, 99 per cent went to immigrants. Since David Cameron came to power, the figure is 82 per cent.

The third place where government intervention has been so disastrous is the home. Politicians are now appearing on TV demanding parents to keep their children under curfew. I wonder what planet they are living on. Certainly not the same as the boys I know, for whom grown-ups have been absent or ineffectual. The boys do not even get fed properly, let alone supervised. They are not alone. In a recent survey 49 per cent of British parents did not know where their children were in the evenings or with whom. Some 45 per cent of 15 year old boys spent four or more evening a week hanging about 'with friends' compared to just 17 per cent in France. Tuggy Tug, the leader of the gang said of his friends, 'I get more from them than I ever did from my family.' His recent jail sentence was his first experience of spending time with adult males.

Nearly every one of the young men I interviewed had a young, single mother. Britain has the highest rate of teenage pregnancy in Europe. Despite the huge amount of evidence of the harm this causes children (mothers of children on the 'at risk' register, for example, are five times more likely to be single, teenage mothers – boys are more likely to join gangs and commit crime) the Labour government made single motherhood an attractive proposition. Since 1997, a single mother of two children has seen her benefits increase by a staggering 85 per cent.

To accuse these young girls of being feckless is unjust. They are merely responding to the economics of the situation. They are as much victims of the crisis in our schools and the perverse influence of benefits as teenage boys. They have grasped the consequences of our poor education system. Whereas boys take to crime, girls get pregnant. The government have put young girls in a position where the only career open to them is to have children, whether they want to or not and regardless of whether or not they are good mothers. The state has taken over the role of both husband and father and, as it is all too clear, have failed at both. We can watch the effects of that policy play out on our streets every night this week.

Adapted from 'These rioters are Tony Blair's children' by Harriet Sergeant, fellow for the Centre for Policy Studies.

Source: The Spectator online 17th August 2011: http://www.spectator.co.uk/essays/all/7157318/web-exclusive-these-rioters-are-tony-blairs-children.thtml

Note

"The Centre for Policy Studies believes in freedom and responsibility ….. The Centre develops and promotes policies to limit the role of the state, to encourage enterprise and to enable the institutions of society – such as families and voluntary organizations – to flourish … Its role in developing the policies of privatisation, low-tax government and support for the family, is recognised across the world."

Source: adapted from the website of the Centre for Policy Studies
http://www.cps.org.uk/index.php?option=com_content&view=cpsarticle&id=36&Itemid=18

Aims and objectives

This activity will help students to develop their analysis of sources.

Anticipated student responses

1. The article aims to explain the causes of the riots in England in August 2011
2. The author is a journalist who is a fellow of a right-wing 'think-tank'. Her opinions are based on primary research she conducted in 2009.
3. The article was written in August 2011, directly after the disturbances. However, her research was conducted in 2009.
4. The publisher is The Spectator. This is a long-established independent political magazine which tends towards right-wing perspectives. Their political preferences might influence the views on the disturbances they want to promote.
5. The readership of The Spectator is primarily middle class, educated and interested in current social and political issues with views that tend to favour the Conservative Party. The writing in the article reflects this readership. For example, some technical terms are used (e.g. ONS – the Office for National Statistics) but it is assumed that readers will be aware of this abbreviation. It is also assumed that readers will understand words such as 'feckless' and 'curfew'.
6. The author locates the underlying causes of the riots in the policies of the Labour government 1997-2010. She identifies three key factors that explain why groups of young people feel alienated from mainstream society. First, the failure of the education system to provide universal literacy; second, the decline in low skilled manual work and willingness of immigrants to accept low-paid work; and finally a decline in the quality of parenting and rise of single-parent families, encouraged by an over-generous welfare state.
7. The evidence is based on the results of interviews conducted in 2009. It is not clear from this article with whom and in what way the interviews were conducted. The author's interpretations of the data are controversial. While many may agree that educational failure, lack of job prospects and a disrupted family life play an important role in creating a climate in which social unrest and alienation can occur, the author goes further in pinpointing blame on the policies of a particular government. The evidence could be interpreted differently.
8. The views expressed in the article seem to reflect a right-wing perspective that would be expected from someone allied to the Centre for Policy Studies. There are no quotations from other experts or from those with alternative opinions.

Variations/developments

- This activity could easily be adapted to cover any source, for example those chosen or used by students.
- The activity could be done as an individual or paired activity.
- Time spent on the activity will vary depending on whether individual or paired work is taking place.

Relevant pages in Managing Extended Projects

Analysing how texts communicate: pages 49-50
Thinking critically about written sources: page 53
Assessing claims in a text: page 54

Note-taking nightmare

We have all made notes from a book or in a lesson and then got home and thought, what does that say, why have I written that down or what does that mean? Keeping good notes when doing the Extended Project is extremely important as you are assessed on the way you collect information and use resources in your research.

Taking notes is useful as it helps you to concentrate on the topic, aids understanding, helps you to remember important details (like authors and publishers) and gives you a permanent record that you can reflect back on.

> This activity will help you understand the importance of taking clear, detailed and accurate notes. By comparing three sets of notes on the same piece of writing you will be able to see which ones you think will be the most useful and why, helping you with your own note-taking technique.

AIMS

Task

Read the two extracts and the three sets of notes. Then assess each set of notes by writing down what is good and bad about them. When you have completed the activity, start thinking about how you could improve your own note taking.

Passages taken from Guttman, A. (2002) *The Olympics: a history of the modern games* (2nd Edition) (Champaign: University of Illinois Press)

Page 1 extract

Politics, however, in the broadest sense of the term, has always been a part of the Olympics. The modern games were, in fact, revived to propagate a political message. In the eyes of Pierre de Coubertin and the men who succeeded him as president of the IOC, the political purpose of the games – the reconciliation of warring nations – was more important than the sport. They were merely the competitive means to a cooperative end: a world at peace. The games, wrote Coubertin in his Mèmoirs Olympiques, 'are not simply world championships, they are the quadrennial festival of universal youth.'

The brighter the dream, the darker the despair when the dream is disappointed. The most horrific episode in Olympic history – the ghoulish murder in the Olympic village of eleven Israeli athletes and officials by Palestinian terrorists was obviously the antithesis of what Coubertin wanted, but the horror perpetrated in 1972 has to be understood against the background of idealism. The nightmare of nationalistic hatred was the terrorists' answer to the dream of international harmony.

Since most sports' spectators are more interested in the athletes and their performances than they are in Olympism as a social movement, the notion that the games are inherently political might seem odd; but a brief consideration of the symbolism of the Olympics is instructive.

Page 2 extract

The interlocked Olympic rings were designed by Coubertin in 1914 as a representation of the five continents and the colours of their many national flags. The Olympic torch, lit at the site of the ancient games and carried by thousands of relay runners from Greece to the host city, is intended to dramatise connection and continuity through time and space. The parade of national teams, beginning with Greece and concluding with the host country, is another symbol of international cooperation.

Notes A

Allan Guttmann (2002) The Olympics: a history of the modern games (2nd Edition) Champaign: University of Illinois Press

- *The Olympics have always been political*
- *According to Guttmann, Coubertin thought the political aspect of the games was more important than the sport*
- *The games are not simply world championships, they are the quadrennial festival of universal youth*
- *There was a terrorist incident – 11 killed – terrorist answer to dream of international harmony*
- *Most people interested in sport*
- *Rings represent continents*
- *Lots of symbolism linked to international cooperation*

Notes B

The Olympics: a history of the modern game

Page 1

- The Olympics have always been political
- The games were a 'competitive means to a cooperative end.' – politics more important than the sport
- The games, wrote Coubertin in his *Mèmoirs Olympiques*, 'are not simply world championships, they are the quadrennial festival of universal youth.' (Need to look up what quadrennial means!)
- 1972 Palestinian terrorists killed 11 Israelis at the games – 'antithesis' of Coubertin's dream.
- Author states that you can see the Olympics as 'political' by looking at

Page 2

- Symbolism: 5 Olympic Rings = continents, colours = Flags, torch relay = continuity through space and time, opening parade = international cooperation

Notes C

Allan Gutman The Olympics: a history of the modern game

Olympic games are political.

According to Gutman, Coubertin thought the 'reconciliation of warring nations' was more important than the sport.

'The nightmare of nationalistic hatred was the terrorists' answer to the dream of international harmony.' Gutman

'The interlocked Olympic rings were designed by Coubertin in 1914 as a representation of the five continents and the colours of their many national flags'

Aims and objectives

This activity will help students understand how to take good notes.

Anticipated student responses

None of the note-taking examples is completely perfect. Here are some suggestions of what students might say are good and bad about the examples.

	Good	Bad
Notes A	They have all the information needed for bibliography. There is some useful information.	No page numbers. Quotation not written as quotation. Not enough detail in places.
Notes B	Page numbers are given. Writes the quotation as a quotation. Comments on what words need to be looked up. Quite detailed.	Author, year and publisher missing. Sentence not finished.
Notes C	You know what words are directly taken from the source.	No page numbers. Author's name is spelt wrong Not enough detail.

Variations/developments

A follow-up activity could involve students making notes on a different article of your choice using what they have learnt. Alternatively a follow-up activity could involve students bringing in their own choice of article or book to make notes on.

Students could use the information learnt to assess the notes made by another member of the group

Relevant pages in Managing Extended Projects

Taking notes: pages 43-44

Further information

Many students will use computers to make their notes; however, it may be useful to ask students to write about why they have chosen that particular method of storing notes in order to force them to consider both the pros and the cons, particularly as the ease of cutting and pasting information can lead to the risk of plagiarism.

Spinning the web: assessing internet sources

Every day more information appears online. The problem is that this huge bank of material is of massively varying quality.

This activity will help you to assess the credibility of internet sources. By answering a set of questions on a website of your choice, you will understand more about its credibility and whether or not you should use information from that source in your project.

AIMS

What you need to do

Find a website, blog or other online source that contains information useful to your project and assess its reliability using the following questions.

1. Is there an identifiable author?

2. Is the author an expert/qualified or linked to an established organisation?

3. What does the domain name tell you about the organisation?

4. Are there any links to more information about the author or is there an 'About Us' section?

5. What do other people say about the author or organisation?

6. Has the work been edited? Is there an identifiable editor on the website?

7. Is the information given objective and impartial?

8. Does the page have a date and when was it last updated?

Example

Here is a brief assessment of an article called 'Kenya: Provide Land for New Refugee Camps', an article stating that the Kenyan Government should do more to help refugees from Somalia. It is available on the Human Rights Watch website:

http://www.hrw.org/news/2011/07/28/kenya-provide-land-new-refugee-camps (Accessed August 2011)

There is no identifiable author of this article other than the organisation Human Rights Watch. The organisation is well known and in their 'About Us' section they state that they are one of the 'world's leading independent organisations dedicated to defending and protecting human rights'. The domain suffix .org suggests it is a non-governmental and non-commercial website; in fact it is a charity/pressure group.

There is a section on the website with comments from many different government officials from all over the world, praising the work of the organisation and stating they often rely on some of the information gathered by Human Rights Watch. There is no editor named, but as the author is Human Rights Watch generally, there is an assumption it will be edited by the organisation. The information is not impartial as this organisation is dedicated to defending human rights and this particular article contains no direct response from the Kenyan Government. The page is constantly being updated and the article is recent.

In general, information on this website is likely to be fairly reliable but the political ideology behind the organisation needs to be taken into consideration.

Note: Computers are needed for this activity

Aims and objectives

This activity will help students to assess the credibility of internet sources. By applying a set of questions to online sources, students will understand how to assess the credibility of a website.

Anticipated student responses

- Students' responses will vary widely depending on the type of website that they use.

- They may find it difficult to find the answers to certain questions, such as whether or not the work has been edited; however they should be encouraged to persevere.

- If they are really struggling to answer the questions it is probably an indication that the source is not very credible and therefore should be used critically.

Variations/developments

- Students could all be given the same website to assess first, either individually or in pairs, and then follow-up using their own choice of online sources.

- Similar questions apply when assessing all secondary sources, so this exercise could be adapted for use with a book or journal article.

Relevant pages in Managing Extended Projects

Assessing the credibility of primary/secondary sources: pages 55-56

Further information

Remember to check the chosen websites are still operational before the lesson takes place.

Footnote finder

We all know that stealing is wrong, yet some people think it is perfectly acceptable to steal other people's ideas. Plagiarism, the practice of taking someone else's work or ideas and passing them off as your own, is something schools and colleges, exam boards, academics and authors are all keen to stop.

> This activity will help you to use footnotes and to understand what type of information should be footnoted.

When you are writing an essay, more often than not you rely on the ideas of others to help you formulate your own line of argument, and it is really important to give these people credit. One easy way of making sure you don't plagiarise is to gain an understanding of the sort of information that should be referenced and how it should be done.

Footnotes

Footnotes use numbers within the text to direct the reader to a reference at the bottom of the page. This is useful as the reader can see where the information is coming from straight away. (NOTE: Most computer-writing programs have a button that you can press that will automatically add the correct footnote number.)

When to footnote

You should use a footnote to indicate the source of a quotation, information, ideas or interpretation. The sort of information you need to footnote would be something substantial or controversial rather than a basic fact.

---

1. Which, if any, of the following sentences would you footnote and why?

a) The United States Constitution was adopted in September 1787.

b) The United States Constitution has been amended 27 times, with the first ten amendments, known as the Bill of Rights, added in 1791 to appease initial opponents of the Constitution.

c) According to Kammen, the Constitution has provided widespread stability in a very diverse country 'despite widespread ignorance of its provisions among politicians'.

2. Read the extract below and see if you can identify where four footnotes should go.

Throughout the world, man-made emergencies and natural disasters necessitate the donating of foreign aid from the wealthier nations to those suffering. The UK budget for foreign aid has risen in the year 2010/2011 to £7.7 billion, compared to £6.8 billion last year. Aid is, undeniably, a feature of the modern world, and, therefore, it has become more important than ever to inspect the motives behind it.

Defining what humanitarian aid or assistance involves has always been a problem. The Overseas Development Institute (ODI) understands humanitarian assistance as 'emergency and distress relief.' It also, however, remarks on how difficult it is to define 'emergency relief' specifically compared to rehabilitation or more developmental assistance.

Aid itself is 'primarily concerned with the preservation of human life and the stability of structures that protect the same.' As such, this involves things such as the delivery of food, clean water, medications, and other resources considered to be human necessities. It will also usually be coloured by an element of urgency, as it usually occurs in response to sudden natural disasters.

Extract taken from an Extended Project by Josh Warland

As you should now be beginning to understand where footnotes should go, you need to make sure you know what should be included in a footnote. Below is an example of what information is needed for different types of source.

Books: author/editor – surname, initial; publication date; title in italics; place of publication; publisher; page reference. For example:

Lumsdaine, D. H. (1993) *Moral Vision in International Politics* (Princeton: Princeton University Press). 20

For **articles** within books or journals add the author and 'title' of the article. For example:

Singer, P (1972) 'Famine, Affluence and Morality' in *Philosophy and Public Affairs* (United States: Blackwell Publishing). 229

Websites: author/editor; date; title; [online]; place of publication/publisher; URL; date accessed

Buchanan-Smith, M. & Randel, J. (2002) 'Financing International Humanitarian Action: a Review of Key Trends' [online] <http://www.odi.org.uk/resources/download/280.pdf> 2 (accessed December 2010).

Newspapers: author; title; newspaper; date of publication

Klein, N. (2003) 'Now Bush wants to buy the complicity of aid workers' in The Guardian 23rd June 2003

Other important things to remember

- Once you have footnoted a source you only need to refer to it by the author's surname and the page number, unless you have two sources by the same person and then it would be surname, date and page number.

- If one footnote immediately following another refers to the same source and page, the whole reference can be abbreviated to *Ibid*. (which is italicised). This is short for ibidem which in Latin means 'in the same place'. If it refers to the same source but not the same page then you should write *Ibid*. followed by the page number.

Now use the information you have learned to make sure your footnotes are up to scratch and remember – don't forget to make a note of page numbers!
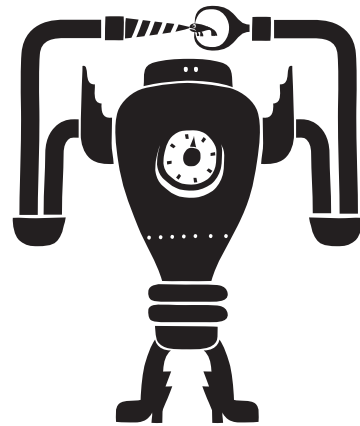
Aims and objectives

The aim of this activity is to help students understand more about referencing using the method of footnoting. It aims to highlight when a footnote should be used and the information it should contain.

Anticipated student responses

1. Sentence b) should be footnoted as it contains detailed information. Sentence c) should also be footnoted as it is a quotation.

2. Students may find this task a little difficult so it may help them to work in pairs or groups. The footnotes for the extract are shown below.

Throughout the world, man-made emergencies and natural disasters necessitate the donating of foreign aid from the wealthier nations to those suffering. The UK budget for foreign aid has risen in the year 2010/2011 to £7.7 billion, compared to £6.8 billion last year.[1] Aid is, undeniably, a feature of the modern world, and, therefore, it has become more important than ever to inspect the motives behind it.

Defining what humanitarian aid or assistance involves has always been a problem. The Overseas Development Institute (ODI) understands humanitarian assistance as 'emergency and distress relief.'[2] It also, however, remarks on how difficult it is to define 'emergency relief' specifically compared to rehabilitation or more developmental assistance.[3]

Aid itself is 'primarily concerned with the preservation of human life and the stability of structures that protect the same.'[4] As such, this involves things such as the delivery of food, clean water, medications, and other resources considered to be human necessities. It will also usually be coloured by an element of urgency, as it usually occurs in response to sudden natural disasters.

3. Students will complain that the process is very long winded and they may find it a bit complicated so it will be necessary to explain that although it appears difficult to begin with, after consistent use, it will become second nature.

Variations/developments

It is important that Extended Project students assess the credibility of the sources that they use. The assessment of each source could be put into the footnotes in order to allow writing to flow more easily. However, students should be told that footnotes would not usually contain this sort of information.

Relevant pages in Managing Extended Projects

Avoiding plagiarism: page 42
Taking notes: pages 43-44

Further information

Using footnotes is just one way to reference information. Students may prefer to use the Harvard method instead. See, for example: http://libweb.anglia.ac.uk/referencing/harvard.htm.

[1] Department for International Development (22nd July 2010) 'Resource Accounts 2009-10', [online] <http://www.dfid.gov.uk/Documents/publications1/departmental-report/2010/rsce-accts-09-10.pdf> (accessed October 2010)
[2] Buchanan-Smith, M & Randel, J (2002) 'Financing International Humanitarian Action: a Review of Key Trends' [online] <http://www.odi.org.uk/resources/download/280.pdf> 2 (accessed December 2010).
[3] *Ibid.*
[4] Logan M-L (2011) 'The Ethics of Humanitarian Assistance: The Justice of and Distinctions Between Intervention and Aid' [online] <http://feraltheology.wordpress.com/2011/01/14/the-ethics-of-humanitarian-assistance/> (accessed February 2011)

Bibliography: spot the difference

If someone we know buys something we like we often ask them where they got it from. Referencing in academic writing is similar in that it tells us where certain information, ideas and arguments have come from. This helps the reader to understand the arguments put forward and shows how you, as the author, have linked ideas together.

This activity will help you understand the importance of a consistent and well-constructed bibliography.

A bibliography is an important part of the referencing process. Basically it's a list of all the sources referred to in the project, essay or research paper. It's usually placed at the end of the project. If you don't reference the origins of material, you could be guilty of plagiarism – taking someone else's work or ideas and passing them off as your own (never a good idea!). This activity will get you thinking about what is involved in writing a bibliography and about the details you need to include. It will show you how different sources could be referenced and help you to understand that consistency is the key when it comes to a bibliography.

Task

We all love playing 'spot the difference' so here we go... there are 15 differences between Bibliography A and Bibliography B on the next page. Your task is to spot them all.

Looking for the differences between Bibliography A and Bibliography B should help you to understand what you need to include in your reference for a book or journal, website or newspaper article.

Bibliography A is correct so use this to make a list of what should be included in each type of reference. Also make a note of general things you should not forget such as putting names of books in italics or putting the references in alphabetical order.

Now you should be able to create or update your own bibliography.

Remember that bibliographies are great sources of information. See if any of the books you are currently using have bibliographies that reference other books that could be useful.

Spot the difference…

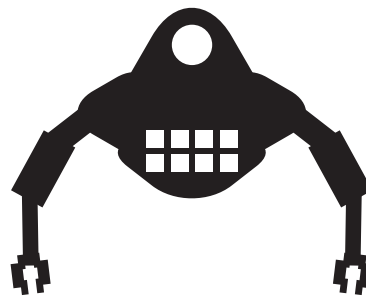| Bibliography A	Bibliography B
Books	**Books**
Adams, W. C. (1986) 'Whose Lives Count? TV Coverage of Natural Disasters' in *Journal of Communication* (Oxford: Routledge).	Adams, W. C. (1885) 'Whose Lives Count? TV Coverage of Natural Disasters' in Journal of Communication (Oxford: Routledge).
Boltanski, L. (1999) *Distant Suffering: Morality, Media and Politics* (Cambridge: Cambridge University Press).	Boltanski, L (1999) *Distant Suffering: Morality, Media and Politics* (Cambridge)
Polman, L. (2010) *The Crisis Caravan: What's Wrong with Humanitarian Aid?* (New York: Metropolitan Books).	Polman, L. T*he Crisis Caravan: What's Wrong with Humanitarian?* (New York: Metropolitan Books).
Singer, P. (1972) 'Famine, Affluence and Morality' in *Philosophy and Public Affairs* (United States: Blackwell Publishing).	Singer, P. (1972) *'Famine, Affluence and Morality' in Philosophy and Public Affairs* (United States: Blackwell Publishing).
Walter, J. (2003) *World Disasters Report: Focus on Ethics and Aid* (Switzerland: International Federation of Red Cross & Red Crescent Societies).	(2003) *World Disasters Report: Focus on Ethics and Aid* (Switzerland: International Federation of Red Tick & Red Crescent Societies).
Websites	Department for International Development 'Resource Accounts 2009-10', [online]
Department for International Development (July 2010) 'Resource Accounts 2009-10', [online]	<http://www.dfid.gov.uk/Documents/ publications1/departmental-report/2010/rsce-accts-09-10.pdf> (accessed October 2010)
<http://www.dfid.gov.uk/Documents/ publications1/departmental-report/2010/rsce-accts-09-10.pdf> (accessed October 2010)	The International Red Cross, 'The Seven Fundamental Principles of the Red Cross' [online] '<http://www.redcross.ie>
The International Red Cross, 'The Seven Fundamental Principles of the Red Cross' [online] <http://www.redcross.ie/corporate_site/ about_us/international_movement/fundamental_ principles> (accessed November 2010)	**Newspaper and periodicals**
Newspaper and periodicals	Smith, L (2010) 'UK doubles Pakistan flood aid to £60m' 20 August 2010.
Smith, L (2010) 'UK doubles Pakistan flood aid to £60m' in *The Independent,* 20 August 2010.	

Aims and objectives

This activity aims to help students understand what information is needed to collate a good bibliography and the importance of consistency.

Anticipated student responses

Bibliography B – mistakes are written in bold	**Things to include**
Books	**Books**
Adams, W. C. (1985) 'Whose Lives Count? TV Coverage of Natural Disasters' in Journal of Communication (Oxford: Routledge). **1885 should read 1986 and title of book should be italicised**	Author/editor – surname, initial. Publication date in brackets Title in italics Place of publication Publisher For articles within books or journals add the author and 'title'
Boltanski, L (1999) Distant Suffering: Morality, Media and Politics (Cambridge). **Full stop is missing after the L and the publisher is missing**	
Polman, L. The Crisis Caravan: What's Wrong with Humanitarian? (New York: Metropolitan Books). **Publication date is missing and the word 'Aid' is missing from the title**	
Singer, P. (1972) Famine, Affluence and Morality in Philosophy and Public Affairs (United States: Blackwell Publishing). **As the article is located in a book the article title should not be italicised but should be in single inverted commas**	
(2003) World Disasters Report: Focus on Ethics and Aid (Switzerland: International Federation of Red Tick & Red Crescent Societies). **No author given and tick written instead of cross**	**Websites** Author/editor Date Title [online] Place of publication/publisher URL Date accessed
The heading 'Websites' is missing	
Department for International Development 'Resource Accounts 2009-10', [online] <http://www.dfid.gov.uk/Documents/publications1/departmental-report/2010/rsce-accts-09-10.pdf> (accessed October 2010) **Date published is missing**	
The International Red Cross, 'The Seven Fundamental Principles of the Red Cross' [online] <http://www.redcross.ie> **Half of the website is missing and the date accessed is missing**	**Newspapers** Author Title Newspaper Date of publication
Newspapers and periodicals	
Smith, L (2010) 'UK doubles Pakistan flood aid to £60m' 20 August 2010. **Name of newspaper is missing**	

Variations/developments

- This activity works well alongside other activities related to referencing.
- It could be an individual, paired or group activity.
- A future activity could involve students checking each other's bibliographies for similar mistakes to those identified in the 'spot the difference' task.

Relevant pages in Managing Extended Projects

Creating a bibliography: page 45

Further information

The referencing methods used for this activity are just one example of referencing; other accepted methods would be equally valid.

Collecting primary data

Bad questionnaire

Want to know something about a group of people? How they behave, what they think, their attitudes? Well, you could guess but it's unlikely that your guesses will be very accurate. Many projects benefit from questionnaire research – maybe you are designing a website and need to know what sites your target audience like and why. Or perhaps you need to know opinions on a controversial topic you're researching. Finding out from people directly is pretty much always better than guesswork and questionnaires are probably the most common way of finding out about people's actions and attitudes. The problem is that too many questionnaires don't do the job they aim to do. Yes, they get results and these results can be turned into impressive looking tables and charts. But if the questions aren't thought out and drafted really carefully then you might have been better off guessing.

> This activity should help you create better questionnaires by showing you some of the most common errors students make when constructing questionnaires.

Read the following questionnaire and then complete the tasks below.

1. Identify as many mistakes as you can in the questionnaire.

2. Take one of the questions in the questionnaire and rewrite it so it is clear and will collect accurate data.

3. Create a list of 10 tips for wiring a successful questionnaire.

4. Create a better questionnaire to find out about an issue related to your own project.

It would very interesting for students to know your answers to the following questions

1. How old are you?
0-11
11-16
16-19
19-30
30-50

2. Sex

_____

3. What social class are you?
Upper
Middle
Lower

4. How much do you earn?

_____

5. Do you go to the cinema
Often?
Sometimes?
Occasionally?
Never?

6. What is your favourite leisure activity?
Sport
Music
Dancing
TV

7. Do you agree that computer games cause people to be violent?

_____

8. Does your social class influence your leisure or do your leisure activities determine your social class?

_____

Aims and objectives

- To help students identify common mistakes in questionnaire design
- To develop understanding of key principles in questionnaire design

Anticipated student responses

Try to encourage students to use concepts such as validity and reliability in their comments. They might identify the following problems.

Introduction: Ethical guidelines state that answers should be confidential. Students should explain the purposes of the questionnaire and what they are going to do with the data.

Question 1: Certain ages fit into two categories; the age ranges are spaced inappropriately with small ranges for younger people and huge ranges for older people.

Question 2: Question would be clearer if closed with two possible responses; many respondents will answer 'yes please' or similar.

Question 3: Many respondents will not share an understanding of what social class is so their answers cannot be compared. The concept needs operationalizing into indicators. Some respondents will not identify with any of these categories.

Question 4: Far too personal for a student to ask so breaks ethical guidelines – broad categories may have been better but some respondents may not earn anything and others may be unsure. Also, is it per week? Month? Year?

Question 5: Respondents will understand the options in different ways – the question needs specific ranges.

Question 6: The respondent's favourite leisure activity may be none of these. They also may like several equally so should be able to select more than one. Also, sport covers a very wide range of activities.

Question 7: This is a leading question, encouraging the respondent to agree by using the words 'Do you agree that ...'. It is also difficult to see what a simple 'yes' or 'no' answer will achieve. Better to have a Likert scale or deal with the issue using a more qualitative approach such as a semi-structured interview.

Question 8: Plain confusing – two questions in one – very unclear how the respondent is expected to answer.

Variations/developments

Not all students will need to carry out a questionnaire in their project so this activity could be used with a smaller group.

A further development could involve students writing a questionnaire for their project (or finding an existing one online or from a previous project) and evaluating it in pairs or small groups using their list of ten tips.

Other related activities might involve designing a representative sample of the target group for the questionnaire and exploring the relative merits of self-completion and interview-based questionnaires.

Relevant pages in Managing Extended Projects

Ethical issues: page 36
Sampling: pages 62-63
Questionnaires: pages 65-66

'Tell me about...': interview skills

Amina is producing a website encouraging recently retired adults in her local area to volunteer. As part of her research she has decided to interview a small sample of adults who have retired in the last few years. She wants to find out their attitudes to volunteering, whether they have ever volunteered in the past, any thoughts they may have about volunteering now, organisations they might be interested in working with and any barriers that might prevent them volunteering.

> **AIMS**
> This activity will help you improve your interviewing skills so you can collect detailed and valid data.

After studying the different types of interview available Amina has decided to use a semi-structured approach where she will have planned questions to ask and issues to cover but there will be flexibility in that she can follow up her respondent's answers and alter her questions in the light of answers.

The first interview takes place in a busy café in Amina's local high street. The respondent is David, a keen birdwatcher who retired in 2009 after a long and successful career in accountancy.

Here's what happened.

Amina	Hello
David	Shall we get a drink? What would you like?
Amina	Oh – an orange juice please
David	How can I help you?
Amina	errr – what do you think about volunteering?
David	I think it's great – it really helps society
Amina	Have you ever volunteered?
David	Let me think. No, I can't remember that
Amina	What organisations would you like to volunteer for?
David	...I don't know – I haven't thought about it
Amina	Are there any barriers to you volunteering?
David	... barriers? Well I'm not sure. I am very busy you know – I can't remember being busier in fact
Amina	OK – that's the end now
David	Don't you have any more questions?
Amina	No, I've covered everything I think

Task 1

a. What do you think of the information Amina has collected from this interview? How useful is it for her project?

b. Identify reasons why David's responses are so short.

> ## Open questions
>
> To encourage respondents to speak in depth it is useful for the interviewer to establish a rapport or friendly relationship with the respondent and to phrase questions in an open way that encourages detailed answers. Also, questions should develop from the respondent's answers so experiences and opinions can be explored in more depth.
>
> **Examples of open questions:**
>
> 'Why ...'
>
> 'Tell me about ...'
>
> 'Could you say a little more about ...'
>
> 'What do you think about ...'

Task 2

a. Explain how you would set up the interview in a way that encourages David to talk at length.

b. Rephrase Amina's questions so they encourage detailed answers.

c. Suggest follow-up questions using David's answers.

Aims and objectives

This activity focuses on developing the interviewing skills needed to create rapport and ask questions that elicit detailed, valid answers.

Anticipated student responses

Task 1

a. Although Amina has covered the issues she set out to, David's answers are so brief as to be unhelpful.

b. Amina could have made more effort to establish a rapport with David. The interview could have taken place in a less noisy environment – if Amina was recording the interview the background noise would make it very difficult to hear responses. Amina should also have introduced herself fully, explained her project and what she intended to do with the information collected (conforming to ethical guidelines) and offered to buy drinks – after all, David is doing her a favour by agreeing to an interview.

Anna's approach to questioning does not encourage the sort of detailed responses that assist her project. This is because she fails to follow up David's responses and asks too many questions that produce short yes/no type answers. She should see the interview as more of a conversation with her planned questions used only as a guide.

Task 2

a. The line of questioning should be shared with the respondent before the interview so they can think about answers in advance. A quiet (but not totally private) place that is convenient for the respondent should be organised, along with suitable recording or note taking equipment. Permission to record the interview should be requested if appropriate. It is a good idea to start the interview with some casual conversation to break the ice and establish rapport. Most interviews start with simple questions and leave the more opinion-based questions until the later parts of the interview.

Amina's question	Suggested question(s)	Possible follow ups to David's answers
What do you think about volunteering?	Quite a few people in this area are involved in voluntary work for community groups or charities. What's your opinion of this sort of volunteering?	What do you like about it? How do you think it helps society?
Have you ever volunteered?	Tell me about any times in your life when you've been involved in local voluntary organisations such as churches, schools, community groups or charities. For example, have you helped with an event or donated money?	Maybe there was a time when you went to a meeting or helped out with an event – it might have been some time ago.
What organisations would you like to volunteer for?	What issues do you feel strongly about? Are there local charities or community organisations whose work you admire? Are you involved in any of these causes or groups?	Tell me about any local or national organisations whose work has impressed you. For example, have you read or seen information about an organisation or charity in the press or on TV?
Are there any barriers to you volunteering?	How much free time do you have at the moment? Tell me about your family, work or other commitments? What activities do you do in your spare time?	It's good to be busy. What takes up your time?

Variations/developments

- Students get into groups of three. One is the interviewer, one the respondent and one the observer. Practise interviewing about the respondent's project with the observer providing feedback at the end.

- Alternatively the group could be divided into pairs and the individuals in each pair interview each other in turn. One pair could then conduct their interviews in front of the class, followed by a discussion about interview technique.

Relevant pages in Managing Extended Projects

Interviews: pages 68-69
20 steps to a good interview: page 70
Interview planning form: page 71
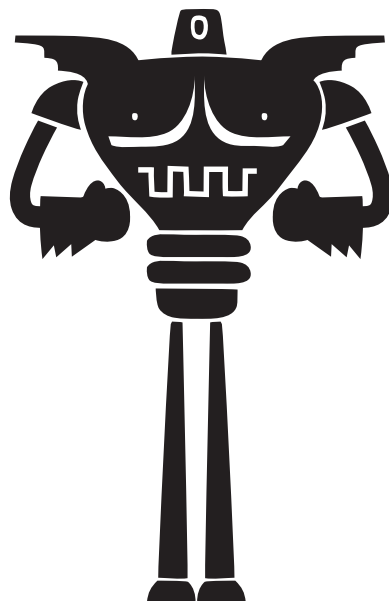
Analysing data I: name that statistic

Descriptive statistics allow you to describe, summarise and visually display quantitative data so that you can analyse any patterns that occur.

There are four main types:

- **Measures of central tendency:** *mean* (often incorrectly called 'average'), median and mode. These summarise the mid-point or most typical point in the data set.

- **Measures of dispersion:** include *range*, *interquartile range*, *standard deviation* and *variation ratio*. These indicate how much the data varies from the average.

- **Measures of distribution:** *frequency distribution* calculated as percentages of a whole, or other measures of proportion across the range of values. These indicate the shape of the data set: is it skewed or symmetrical, clustered or smoothly spread out?

- **Graphical representations of the above measures:** Although they are not calculations as such, these are vitally important and should be used alongside the different measures, to display and help to detect patterns in your data. (see Descriptive Statistics 3: graphs and charts on pp. 70-71 for more on these).

....

Can you identify the descriptive statistic from its method of calculation?

1. Find the median. Then split the data set into upper (above the median) and lower (below the median), excluding the median score itself. Then find the new median for each set and calculate the range between them.

2. Find the most common score.

3. Add up all the scores and divide the total by the number of scores.

4. Calculate the mean. Then calculate the distance of each score from the mean. Square each of these distances. Add together the squares of all the distances. Divide this sum of squares by the number of scores -1.

5. Put all the scores in order and identify the middle score (or if there are two middle scores, add these and divide by two).

6. Calculate the difference between the highest and lowest score and add 1.

7. Group the scores into ranges or categories and either simply count the frequencies in each one or calculate the frequency in each group as a percentage of the total number of scores. This can be displayed in a histogram, frequency polygon or bar chart.

8. Find the mode of the data set and then calculate the percentage of scores that are not modal.

Aims and objectives

Most students know how to calculate basic measures such as mean, median, mode and range. Fewer students understand interquartile range, standard deviation, variance or variation ratio. This activity aims to check, recap and possibly extend students' knowledge of how to perform these common descriptive statistics.

Anticipated student responses

Students may not know all the answers but if they know how to calculate the mean, median, mode and range, they should be able to work out most of the answers using the information sheet 'Descriptive Statistics: The Basics' available at www.connectpublications.co.uk/extendedprojectactivitypack and some reasoning.

Answers:
1. Interquartile range
2. Mode
3. Mean
4. Standard Deviation
5. Median
6. Range
7. Frequency distribution
8. Variation ratio

Variations/developments

Give students some small data sets (such as those in 'Analysing data 2: measure for measure' on pp. 67-69) and they can practise the calculations. It is probably a good idea for all but the more confident mathematicians to use a spreadsheet or scientific calculator for the standard deviation.

Relevant pages in Managing Extended Projects

Analysing quantitative data: pages 75-77

Further information

See 'Analysing data 2: measure for measure' on pp. 67-69 or www.socialresearchmethods.net/kb/statdesc.php for more information.

Analysing data 2: measure for measure

If you want an average for your data, don't just stick the mean, median and mode into a table in the hope that one of them will be useful. You need to measure both the central tendency and dispersion of the data, choosing techniques that will give you the most accurate and useful summary of the data. To do this, you need to know the type of data you are using and how the type of data affects the choice of measure of central tendency and dispersion. If you are not already familiar with descriptive statistics, you may need to find out more before you tackle this activity.

AIMS

This multiple-choice activity helps you to check your knowledge of descriptive statistics and to figure out which measures to use with which types of data.

Activity

1. Which is an advantage of using the mean rather than the median or mode?

a. It is not affected by outliers (extreme scores)

b. It takes account of all scores, so it is the most informative technique

c. It is the only measure that can be used with ordinal data

2. Which is an advantage of using the median?

a. It is not affected by outliers (extreme scores)

b. It takes account of all scores, so it is the most informative technique

c. It is the only measure that can be used with nominal/categorical data

3. Which is an advantage of using the mode?

a. It is not affected by outliers (extreme scores)

b. It takes account of all scores, so it is the most informative technique

c. It is the only measure that can be used with nominal/categorical data

4. Which two are disadvantages of using the mean?

a. It cannot be used with nominal data

b. It is less useful when there are several modes

c. It is the least informative measure

d. It can be distorted by outliers (extreme scores)

e. It does not take into account the distances between scores

5. Which two are disadvantages of using the median?

a. It cannot be used with nominal data

b. It is less useful when there are several modes

c. It is the least informative measure.

d. It can be distorted by outliers (extreme scores)

e. It does not take into account the distances between scores

6. Which two are disadvantages of using the mode?

a. It cannot be used with nominal data

b. It is less useful when there are several modes

c. It is the least informative measure

d. It can be distorted by outliers (extreme scores)

e. It does not take into account the distances between scores
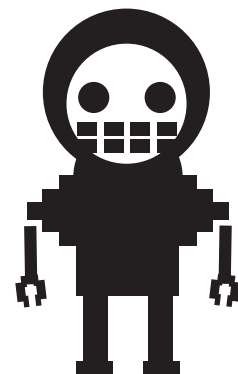
For questions 7 to 12, use data sets A, B, C and D.

A: Muslim, Christian, Jew, Buddhist, Muslim, Muslim, Sikh, Christian, Hindu, Pagan.

B: 2.4, 3.0, 3.6, 4.0, 5.6, 6.0, 7.8, 7.9, 8.2, 9.7, 9.9

C: 2, 3, 4, 5, 5, 6, 7, 7, 8, 9, 10, 10, 18

D: Very happy [4]; happy [3]; neutral [2]; unhappy [2]; very unhappy [1]
(where the number of responses for each category is given in brackets).

7. **Which data set has nominal data?**

8. **Which data set has ordinal data?**

9. **Which would be the only possible measure of central tendency for set A?**
a. Mean
b. Median
c. Mode

10. **Which would be the most appropriate measure of central tendency for set B?**
a. Mean
b. Median
c. Mode

11. **Which would be the most appropriate measure of central tendency for set C?**
a. Mean
b. Median
c. Mode

12. **Which would be the most appropriate measure of central tendency for set D?**
a. Mean
b. Median
c. Mode

13. **If you use the mode, which is the only measure of dispersion you can use?**
a. Standard deviation
b. Variation ratio
c. Range
d. Interquartile range

14. **If you use the median, which two measures of dispersion can you use?**
a. Variation ratio and range
b. Interquartile range and standard deviation
c. Standard deviation and variation ratio
d. Range and interquartile range

15. **If you can calculate a mean, which is the most informative measure of dispersion to use?**
a. Standard deviation
b. Variation ratio
c. Range
d. Interquartile range

Aims and objectives

Most students know how to calculate basic measures such as mean, median, mode and range. However, they may not understand the different purposes of these, so they resort to either a blanket approach or a random selection. Fewer students understand interquartile range, standard deviation, variance or variation ratio. This multiple-choice activity can be used as an assessment activity to check what students already know about the use of these descriptive statistics before choosing measures to describe their own data. It can also be used as a guide to find out relevant points through independent research so that they can make informed choices about which measures to use.

Anticipated student responses

Multiple-choice answers

1. B
2. A
3. C
4. A & D
5. A & E
6. B & C
7. A
8. D
9. C
10. A
11. B

12. C, or if ranked, B.

These are ordered categories, so they have characteristics of both nominal and ordinal data. Taken as they are, the answer is C – Mode. In this case, that would be 'very happy' (with four responses). However, if the categories were given numerical ranks 1-5, (very happy – very unhappy), the median could be calculated. It would be 2 or 'happy' (between the 6th and 7th value). This is a more accurate representation of the mid-point of the data, as it takes into account the more dispersed negative responses. This shows how the 'levels' of data can affect the use of more or less informative measures.

13. B
14. D
15. A

Variations/developments

Make up some small example data sets and ask students to identify the correct level of data and select appropriate descriptive statistics.

Relevant pages in Managing Extended Projects

Analysing quantitative data: page 75

Further information

We have provided a guide for students in using descriptive statistics – see 'Statistics: the basics', available at no charge from www.connectpublications.co.uk/shop/extended_project_activity_pack.

Analysing data 3: graphs and charts

If you use any descriptive measure at all, you should also display your findings in an appropriate graph or chart, which will make the numbers much easier to grasp and compare. But beware – if you get it wrong it will make your analysis much more difficult!

This activity helps you to identify some useful graphs and their functions in preparation for choosing appropriate graphs for use in your own project.

Task 1

Can you match the correct name from the list below to the graphs and charts provided?

1. Bar chart
2. Pie chart
3. Histogram
4. Line graph/frequency polygon
5. Box plot/box & whisker chart
6. Scatter graph/plot
7. Stacked bar chart
8. Clustered bar chart

Task 2

Which graph/chart would you use to show the following functions?

A. Frequencies of response
1. Frequency distribution of responses to categories as proportions of a whole
2. Frequency distribution of responses in categories in relation to each other
3. Frequency distribution of responses to categories on multiple variables
4. Frequency distribution of scores on a scale

B. Comparisons between two or more groups
5. Compare the differences in average score between two or more groups
6. Compare differences showing median, range and interquartile range
7. Compare frequency distributions between two or more variables

C. Associations between two variables
8. The strength of association between two paired variables
9. Trends (e.g. scores over time)

Which graph is most appropriate to illustrate the data for your project?

Watch out: some charts can have more than one function, so there may be more than one answer to some questions and some graphs will be used more than once.

c

d

e

f

g

h
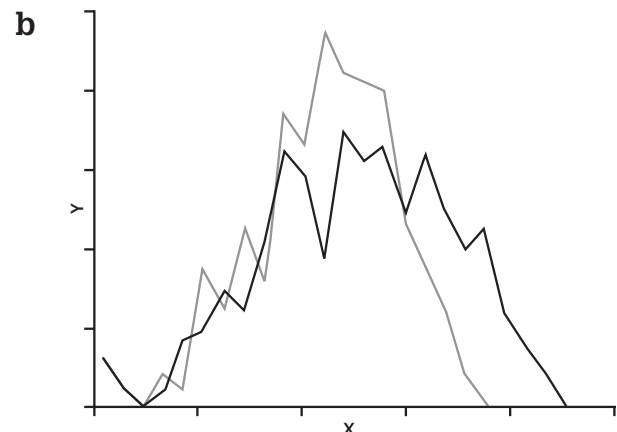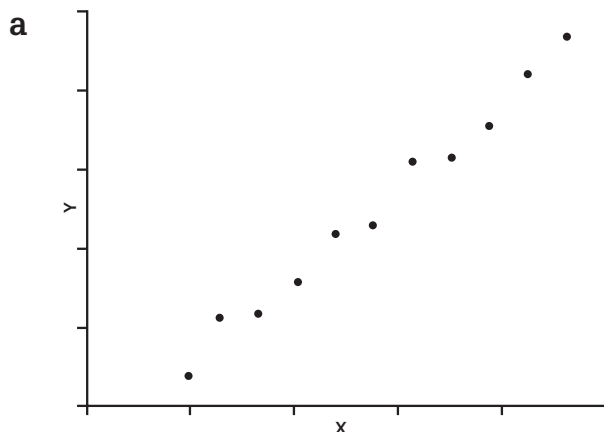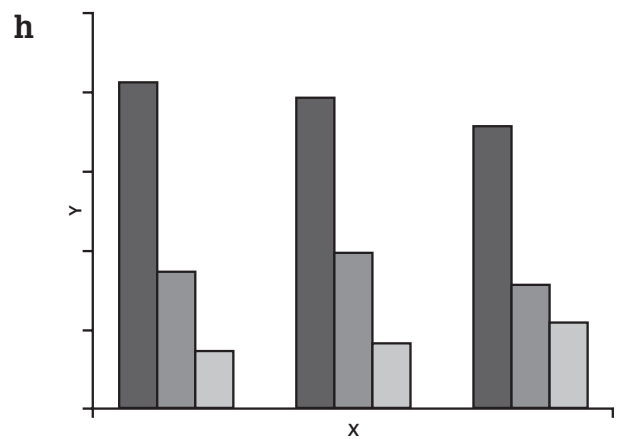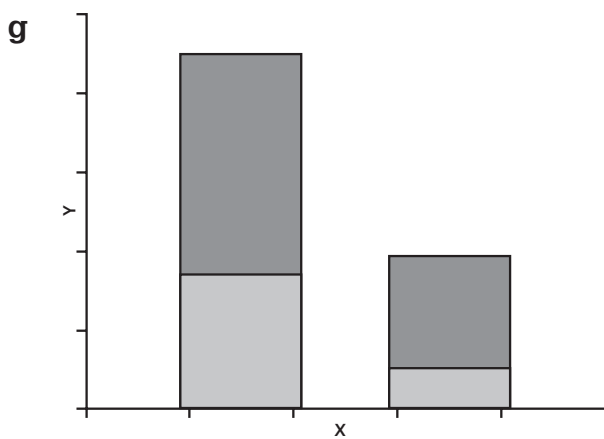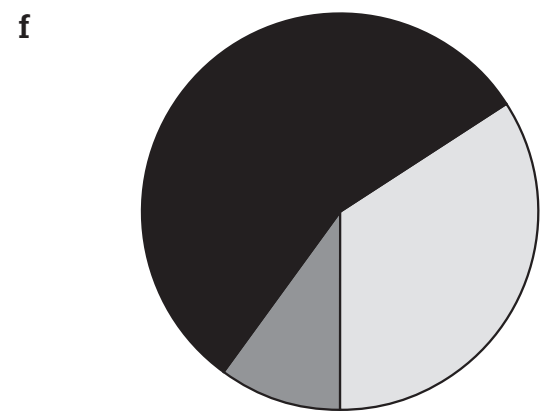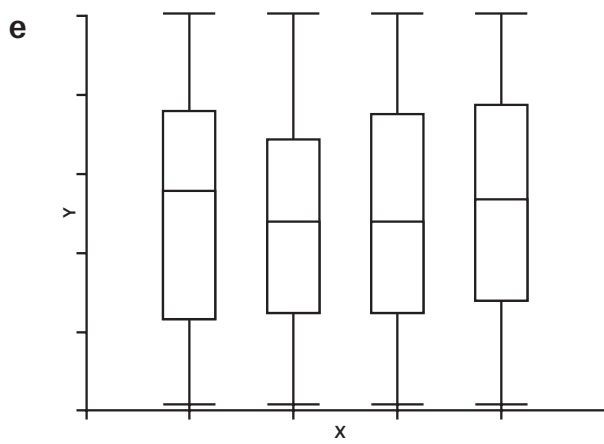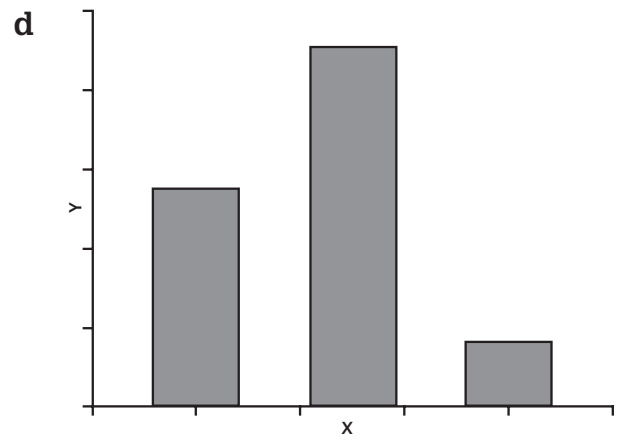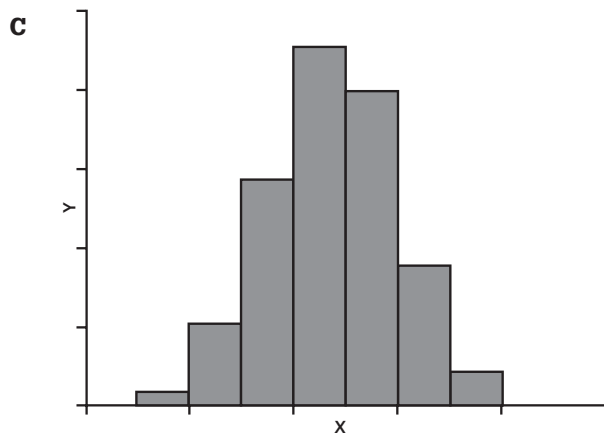
Aims and objectives

Choosing the right graph to present data is something that students often seem to have difficulty with. This activity helps them to identify useful graphs and their functions in preparation for choosing the best graphs for their own projects.

Anticipated student responses

Task 1 Answers

1. Bar chart - D
2. Pie chart - F
3. Histogram - C
4. Line graph/frequency polygon - B

5. Box plot/box & whisker chart - E
6. Scatter graph/plot - A
7. Stacked bar chart - G
8. Clustered bar chart - H

Task 2 Answers

A. Frequencies of response:

1. Pie chart

2. Bar chart

3. Stacked or cluster bar chart (stacked for proportions of a whole; clustered for comparison of subcategories which are common to all items), frequency polygon

4. Histogram or frequency polygon (a form of line graph); the two are often plotted on the same axes

B. Comparisons between two or more groups

5. Bar chart

6. Box whisker chart (box plot)

7. Frequency polygon (line graph) — it is easier to compare two sets of data on the same axes using two lines rather than a histogram

C. Associations between two variables

8. Scatter graph (or plot) — each variable on a different axis, not a line graph.

9. Line graph

Variations/developments

Students can produce a range of graphs from a data set. Beware, the default chart output from applications such as Excel can be misleading. Good charts can be produced but they do usually need some formatting adjustment. Students could hand-draw charts. See 'Statistics: the basics' for tips.

Relevant pages in Managing Extended Projects

Presenting quantitative data: pages 76-77

Further information

We have provided a free guide for students in using descriptive statistics — see 'Statistics: the basics', available at http://connectpublications.co.uk/shop/extended_project_activity_pack

There is also a good, accessible guide on Anglia University's website http://web.anglia.ac.uk/numbers/graphsCharts.html

Analysing data 4: choosing inferential statistics

You need to decide which statistical test to use before you finalise your hypothesis and collect data. Statistical tests for multiple variables can be difficult to understand. If you don't plan your hypothesis to fit a simple test you could come unstuck!

AIMS

If you have a reasonable understanding of the basics of quantitative research design, this activity will help you to learn how to choose an appropriate inferential statistic to apply to the data in your project. Before you start, check that you understand all the background information below.

1. **Hypotheses for difference or association.** Experimental hypotheses predict a **difference** between scores in two or more conditions of an independent variable. Non-experimental hypotheses predict an **association** between variables – so that pairs of scores on the two variables will correlate.

2. **Definitions of variables and conditions.** An independent variable is what the researcher changes; a condition is the specific setting of that variable. So, in a test of exam performance, if the variable is noise, the experimental condition would be *with noise* and the control condition would be *without noise*. The score is the dependent variable.

3. **The levels or types of data:** How the variables are measured. These are: nominal (categories), ordinal (ranks), and interval (continuous scale). These are explained in 'Statistics: the basics' (see below).

4. **Repeated vs independent designs.** The way comparisons are set up between conditions – repeated measures is where the test is repeated on the same participants or subjects in both conditions, independent measures is where the test is done on different but comparable groups of participants.

5. **Parametric vs non-parametric tests.** A parametric test is more accurate than a non-parametric test, but to use one, both sets of data must meet certain conditions. They must consist of interval data that is normally distributed (check for a bell-shaped curve on a histogram). Both sets must have similar standard deviations/ variance. If in doubt, use a non-parametric test instead.

Task

Advise these students on the appropriate inferential tests for their data. You can assume that none of them have data that fits the requirements of a parametric test.

1. David wants to find out if there is a difference in body mass index between athletes and non-athletes in his school.

2. Suzie wants to find out if there is an association between age and time taken to solve a problem. She is measuring age in years and time in minutes.

3. Anna wants to find out if there is a difference in scores on a memory test when the same students are tested in the morning compared to the afternoon. The test is marked out of 20.

4. Karen wants to find out if there is an association between gender and whether students choose to study arts or sciences. To keep things simple, she decides to exclude anyone studying both arts and sciences from her survey.

For more help

See our free guide: 'Statistics: the basics' at www.connectpublications.co.uk/shop/extended_project_activity_pack. There are many other good guides to inferential statistics on the internet. Try Anglia University's guide at http://web.anglia.ac.uk/numbers/biostatistics/biostatistics.html. Alternatively, if you download an open-source (free) statistics software package such as 'Sofa Statistics', and import your data into the program from a spreadsheet, it will guide you through the choice of test and help you decide on whether a parametric or a non-parametric test is more appropriate for your data.

Choosing an inferential test

Use this flowchart to decide which inferential statistic to use. Look up anything you are unsure of.

Choosing Inferential Statistics

HYPOTHESIS?

Difference
- 2 or more variables, 3 or more conditions
  - These need advanced statistics
- 1 variable 2 conditions
  - DESIGN?
    - Independent measures
      - LEVEL OF DATA?
        - interval data
          - Parametric*
            - Unrelated t-test
        - Ordinal data
          - Non-parametric*
            - Mann-Whitney U test
    - Repeated measures
      - LEVEL OF DATA?
        - Interval data
          - Parametric*
            - Related t-test
        - Ordinal data
          - Non-parametric*
            - Wilcoxon Sign Test
        - Nominal data
          - Non-parametric*
            - Binomial Sign test

Association
- 2 variables
  - LEVEL OF DATA?
    - Interval data
      - Parametric*
        - Pearson's product moment correlation coefficient
    - Ordinal data
      - Non-parametric*
        - Spearman's rank order correlation coefficient
    - Nominal data
      - Non-parametric*
        - Chi-squared test (x^2)
- More than 2 varables
  - Compare them two at a time or use advanced statistics

* Parametric conditions:
1. Interval data
2. Normal distribution
3. Few outliers
4. similar variance in both variables

Aims and objectives

This activity can be used as a basic introduction to inferential statistics for science and social science students who are already familiar with aspects of quantitative research design.

Anticipated student responses

Warning: Students who have not studied research design before will find this very challenging without a more detailed introduction. It is not advisable for students without any background in research design to undertake inferential statistics as part of an Extended Project, unless they are scientifically/mathematically minded, have plenty of time to spare and lots of patience. One of the easiest and most common inferential statistics for 6th form students to use is the correlation co-efficient, and this is dealt with in a separate activity (see pp. 76-77). If you want to guide a group of students through one type of inferential test that they are likely to be able to apply for themselves, then this is probably the one to do.

Activity answers

1. Test of difference, interval data, independent measures. Non-parametric test: Mann Whitney U test. Parametric test: Unrelated t-test.

2. Test of association, interval data, Non parametric test: Spearman's rank order correlation coefficient. Parametric test: Pearson's product moment correlation coefficient.

3. Test of difference, interval data, repeated measures. Non-parametric test: Wilcoxon Sign test. Parametric test: related t-test.

4. Test of association, nominal data, independent groups. Non-parametric test: Chi-squared test.

Variations/developments

Give students a set of made-up sample data and some statistics software (if your school or college doesn't have any, they can download 'Sofa Statistics' at home. Give them specified inferential statistics to run on the data so that they can compare with others in class and troubleshoot any issues before starting out on analysing their own data.

Further information

- See our guide: 'Statistics: the basics' at www.connectpublications.co.uk/shop/extended_project_activity_pack

- A good guide to the elementary concepts needed to understand inferential statistics can be found here: http://www.statsoft.com/textbook/elementary-statistics-concepts/

- Anglia University's guide is one of the more accessible http://web.anglia.ac.uk/numbers/biostatistics/biostatistics.html

- Failing that, if you feel out of your depth in this area but you have a student who really needs help with inferential statistics, see if you can find a sympathetic ear in the Maths, Psychology, Sport or Science departments. Even if your colleagues don't have time to spend with your student, they might be able to lend or recommend a basic statistics textbook.

Analysing data 5: correlation

Correlation is the extent to which two measured variables are associated. Correlations are displayed on scattergraphs. A strong correlation is shown on a scattergraph by dots that fall along and close to a line of best fit, or 'regression line'. The more scattered the dots, the weaker the correlation. A positive correlation is one in which x and y increase or decrease together. It is shown by a trend on a scattergraph from bottom left to top right. The negative correlation is one in which x increases as y decreases, or vice versa. It is shown by a trend on the scattergraph from top left to bottom right.

> The aim of this activity is to take you through the process of planning and carrying out a correlational analysis on your data. The correlation you will use is called a Pearson's Product Moment Correlation Coefficient.
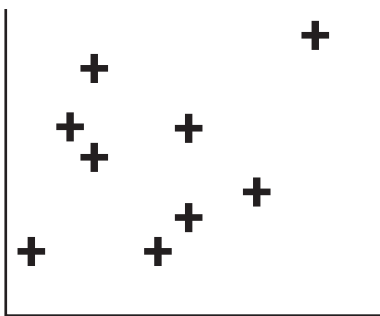
i) very weak positive correlation
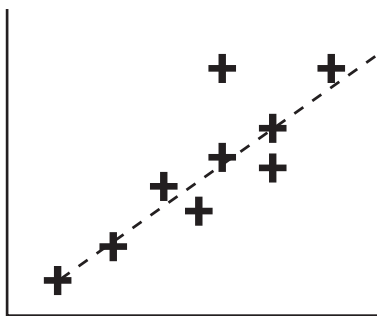
ii) strong positive correlation
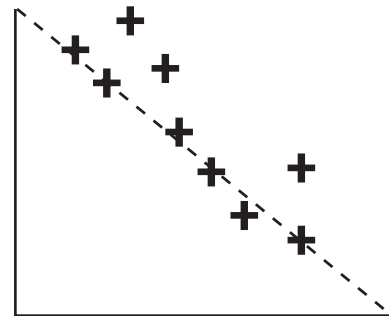
iii) strong negative correlation

Correlational analysis involves the calculation of a **correlation coefficient** for two sets of paired values. The correlation coefficient is a number between -1 and +1, which expresses the correlation between the two variables. The closer the value is to zero, the weaker the correlation. +1 is a perfect positive correlation, -1 is a perfect negative correlation.

....

Activity

1. Write your hypothesis

A one-tailed correlational hypothesis is stated as 'there will be a (positive/negative) correlation between x and y'. A two-tailed correlational hypothesis does not specify whether the relationship will be positive or negative. This becomes important later if you are going to test for statistical significance.

2. Plan your data collection

a. You will need a pair of scores on two variables from each participant or data source. To avoid bias in the results from outlying scores, your sample should be at least 50 pairs of scores – 100+ pairs of scores would be even better.

b. Collect your data and enter it into two columns side by side in a spreadsheet.

3. Prepare your data for analysis

a. If any score is without a pair, the formula won't work, so remove any unpaired scores.

b. Plot your data on a scattergraph. Most spreadsheets can do this for you automatically, but make sure that the two variables are on different axes so that each pair of scores creates one data point on the graph. If your spreadsheet allows you to, add a 'regression line' or line of best fit.

c. Look for a broadly linear relationship with few extreme outliers. Scattered scores are fine, as long as the overall trend is not multiple clusters or a curved pattern. If you do see a curved pattern, you can't run a Pearson's correlation, but all is not lost – you could calculate a Spearman's correlation instead. You can find out how to do this using an internet statistics guide.

4. Carry out the correlation coefficient

Run the CORREL function in your spreadsheet. This will give you the correlation coefficient, and will tell you the strength and direction of the relationship between your two variables. The correlation coefficient is referred to as 'r'. Have a look at the example opposite before interpreting your own correlation coefficient results. (This example was produced from invented data – so don't take it too seriously.)
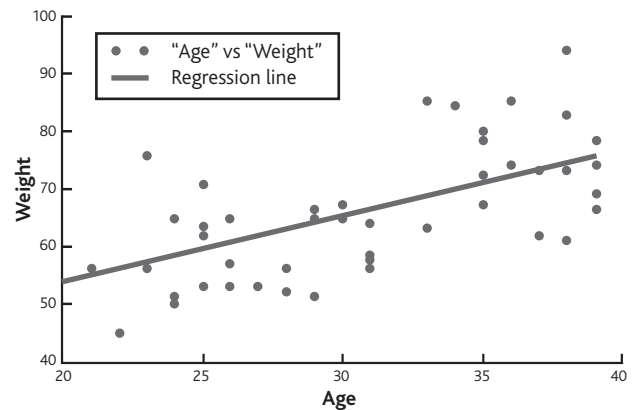
5. Interpret the correlation coefficient

The correlation coefficient shows the strength of the relationship. With a sample of 50 or more, anything more than 0.5 or -0.5 shows a reasonably strong correlation. This data set includes 50 pairs of scores. For this data, Pearson's 'r' = 0.549. So this result means that there is a reasonably strong positive correlation between age and weight in the sample.

6. You *could* test for statistical significance

This will tell you whether your result is likely to reflect a real relationship in the general population.

You will need to understand the principles of statistical significance testing before you start. Even with a strong correlation co-efficient, you may not achieve a statistically significant result with a small sample of less than 50 pairs.

To test for statistical significance you will need to either use statistics software or a spreadsheet and a 'Critical Values' table for the Pearson Product Moment Correlation Coefficient. Most critical values tables available online provide instructions for their use.

If you are unsure about working with statistical significance and the correlational analysis is not the main focus of your project, then just report the correlation coefficient instead. Check with your supervisor if you are unsure about whether to include statistical significance.

Questions you need to answer before testing your data for statistical significance

a. How many degrees of freedom (df) are there in your data?
    This is the number of pairs of scores, minus 2 (df=n-2).

b. Is your correlational hypothesis directional (one-tailed) or non-directional (two tailed)?

c. What level of probability are you prepared to accept?
    The 'p value' is a measure of statistical significance. This is the likelihood that your results are due to chance. Most researchers choose a 5% probability level – i.e. they are happy to be at least 95% sure that their results reflect a genuine relationship in the wider population. This is expressed as p≤0.05, and it is considered to be borderline statistically significant. Some researchers choose p≤0.01, which is considered to be a more significant result because it suggests at least 99% certainty that your results reflect a real relationship in the wider population.

7. Interpreting the statistical significance

Results of the Pearson's Test of Linear Correlation for the 'Age' vs 'Weight' data above:

Degrees of Freedom (df): 48

Pearson's 'r': 0.549

Two-tailed p value: < 0.001

So this result means that there is a reasonably strong positive correlation between age and weight in the sample, and this correlation is 99.9% likely to be representative of the wider population. It is a highly significant result.

Aims and objectives

The aim of this activity is to give students a comprehensive step-by step guide to planning, carrying out and interpreting a correlational analysis. It is a good idea to do this as a practice run with invented scores, so that all students can use the same set of data and discuss the findings before trying out the process on their own project.

The activity should be done early in the process before students have started to collect their own data, as the type of data collected and the sample size selected will have an impact on the viability of the correlational analysis.

Anticipated student responses

Most students will be familiar with the use of scattergraphs. Some may be familiar with the correlation coefficient, fewer will have previous knowledge of statistical significance. For some students, statistical significance is not an easy concept to grasp. You might decide to ignore this aspect of the activity if this is the case, and just use the correlation coefficient to interpret the strength of association. This would probably be acceptable for Extended Projects in which quantitative data analysis was a minor component, but it may not be sufficient if the student is carrying out a practical science, social science or mathematical investigation in which data collection and analysis is the main focus. You should seek guidance from your examination board as to the extent of and types of data analysis they expect students to carry out within the project.

Variations/developments

Students who are carrying out practical quantitative research could carry out both Pearson and Spearman correlations on the data and compare the results. With outliers or a non-linear relationship, they are more likely to achieve a stronger correlation coefficient and a significant result with the Spearman's correlation.

Relevant pages in Managing Extended Projects

Analysing quantitative data: pages 75-77

Further information

Many universities have good online guides to statistics, including correlations. Anglia University's guide is clear and accessible http://web.anglia.ac.uk/numbers/biostatistics/biostatistics.html .

There is a clear and accessible critical values table for the Pearson test available at http://www.gifted.uconn.edu/siegle/research/Correlation/corrchrt.htm.

Constructing logical arguments

Map it out: using argument maps

In academic terms, an argument is a reasoned attempt to persuade a reader to accept a conclusion, rather than the commonly used definition of a dispute or disagreement. Where different views are presented during the course of an argument, these are referred to as counter-assertions and counter-arguments.

> **AIMS**
>
> This activity aims show how using an argument map can make the structure of an argument clearer.

Argument elements

- **Reasoning:** the process of developing an argument with reasons that lead to a logical conclusion.

- **Reason (premise):** a claim that aims to persuade you to support the conclusion of an argument.

- **Evidence (premise):** information that has some basis in fact. It is used to support the reasoning in an argument.

- **Conclusion (proposition):** a claim within an argument that is supported by reasons and evidence. It is the main point the author is trying to persuade you to accept.

- **Main conclusion:** a more complex argument has a chain of arguments with reasons and intermediate conclusions, which link together to support the main conclusion. The main conclusion may be at the beginning, in the middle or at the end of the argument.

- **Intermediate conclusion:** a conclusion within a more complex argument, which is supported by reasons and provides support to the main conclusion.

- **Assertion:** a claim that does not form part of an argument. It may be fact, but could be opinion, belief or speculation. It does not have evidence or reasoning to support it.

- **Counter assertion:** an assertion or claim, which counters the main conclusion of the argument. It is used in argument mainly to dismiss an opposing viewpoint. It may sometimes be used to give the illusion of a balanced argument.

- **Counter argument:** reasons and a conclusion which counters the main conclusion of the argument. If it is well developed it may provide balance to the overall argument.

Argument map

This flowchart shows the structure of an argument, leading from its premises on the left (reasons and evidence) through intermediate conclusions to the main conclusion on the right. Argument maps can be used to help you understand the structure of an argument.
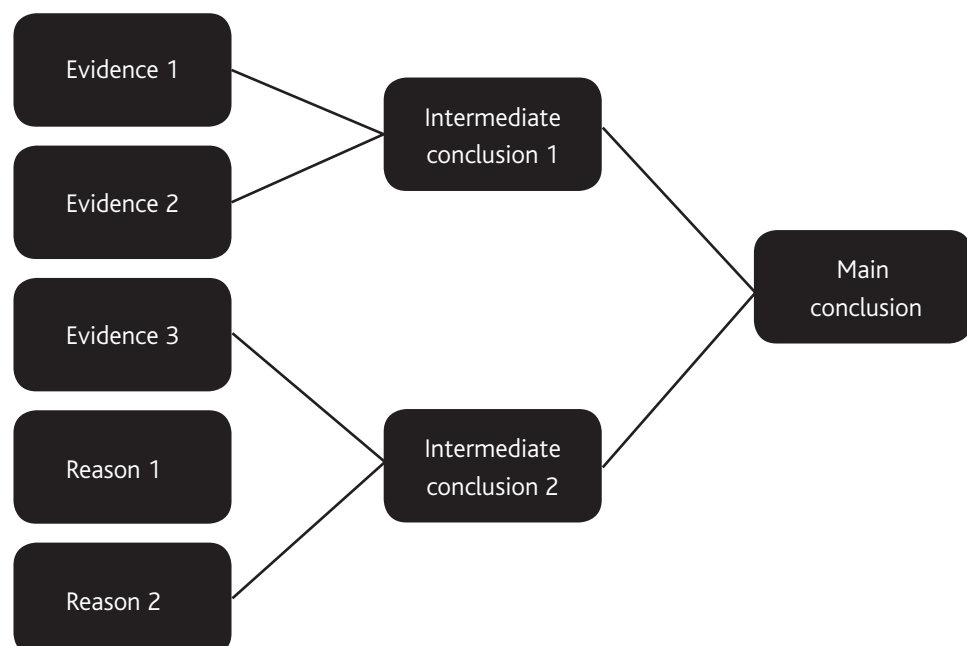
Task

The jumbled up argument about handwriting in the table below fits the template in the argument map diagram. The following elements are included:

- main conclusion
- two intermediate conclusions
- three evidence statements
- two reason statements.

1. First, decide which argument element fits which statement and write them in the table. It may help to cut up the statements and try them out against the argument map template provided until you think you have them in the right order.

2. When you think you have the right structure, draw out the argument map.

Students who use cursive writing produce longer and more complex essays than those who don't.	
Computer use should be restricted in school to ensure that children learn proper handwriting.	
In 2006, only 15% of US students taking the SATs wrote their essays using cursive writing.	
This is worrying, as handwriting is an important life skill.	
Children are no longer learning how to write properly.	
A well-handwritten letter can be a beautiful symbol of individuality and expresses intimacy in your relationships.	
Indiana is the latest US state to give up teaching traditional cursive writing, and instead they are teaching children to touch-type.	
Research shows that teaching handwriting to children develops their fine motor skills.	

3. Write the argument out as a complete paragraph. You can start or end with the main conclusion. Use the words 'because' or 'as' to link a conclusion to a premise. Use the words 'therefore' or 'so' to link a premise to a conclusion.

4. Check that the argument reads through logically. If it doesn't, you may have muddled up an intermediate conclusion with the conclusion so check the logic by substituting 'because' and 'therefore' between the two statements. The main conclusion should only work if it is preceded by 'therefore'.

5. Now, write your own counter argument to disagree with this argument. Use an argument map to help you structure it. Use intermediate conclusions if you want to, or if you prefer, keep it to a simple conclusion based on reasons and evidence. Do not use any assertions (unsupported claims). Make sure that your conclusion follows logically from the premises – avoid making a strong claim that you cannot support.

Now you should be able to construct well-organised arguments in your own project!

Aims and objectives

This activity introduces students to the basics of reasoning and constructing arguments. Writing clearly structured, logical arguments is a difficult skill that needs to be practised.

Anticipated student responses

Some students have difficulty thinking in a clear, logical way, so this activity will help them to see how arguments fit together. Others already have implicit understanding of how to create well-structured arguments. Even so, they will benefit from bringing these abilities into conscious awareness, as it will help them to pinpoint logical problems when they need to assess and evaluate reasoning.

Evidence Indiana is the latest US state to give up teaching traditional cursive writing, and instead they are teaching children to touch-type.

Evidence In 2006, only 15% of US students taking the SATs wrote their essays using cursive writing.

Intermediate conclusion Children in the US are no longer learning how to write properly.

Evidence Research shows that teaching handwriting to children develops their fine motor skills.

Reason Students who use cursive writing produce longer and more complex essays than those who don't.

Reason A well-handwritten letter can be a beautiful symbol of individuality and expresses intimacy in your relationships.

Intermediate conclusion This is worrying, as handwriting is an important life skill.

Main conclusion Computer use should be restricted in schools to ensure that children learn proper handwriting.

A possible argument structure

Children in the US are no longer learning how to write properly. Indiana is the latest US state to give up teaching traditional cursive writing, and instead they are teaching children to touch-type. In 2006, only 15% of US students taking the SATs wrote their essays using cursive writing. This is worrying, as handwriting is an important life skill. Research shows that teaching handwriting to children develops their fine motor skills and students who use cursive writing produce longer and more complex essays than those who don't. A well-handwritten letter can be a beautiful symbol of individuality and expresses intimacy in your relationships. Therefore, computer use should be restricted in school to ensure that children learn proper handwriting.

Relevant pages in Managing Extended Projects

Constructing logical arguments: pages 86-88
Using argument maps: page 88
Structuring a discussion: page 89

Einstein's puzzle

It is said that Einstein invented this puzzle as a boy, and that only 2% of people can solve the version he came up with! This version isn't quite so difficult because it has four categories to figure out rather than five, but it should still test the brain cells.

This activity challenges your powers of logical deductive reasoning. You need to gather and organise information from the clues, and apply general rules to these facts in order to solve the problem and reach a valid conclusion.

AIMS

What you need to know

The general rules

You are standing facing five houses in a row. Each house is painted a different colour, and is lived in by a person from a different nationality. Each person eats different food and has a different pet. There are five different options to choose from in each category, and each option is only to be used once.

The clues

1. The person eating pickled eggs lives in the blue house.

2. There are two houses between the French person and the person eating frogs' legs on the left.

3. The person in house five does not eat sauerkraut.

4. There are two houses between the German and the turtles.

5. There are two houses between the snakes and the house the lion lives in on the right.

6. There are two houses between the green house and the house the Swede lives in on the left.

7. There are two houses between the person eating pickled eggs and the person eating sauerkraut.

8. There is one house between the turtles and the lion on the right.

9. There are two houses between the house of the person eating meatballs and the pink house on the left.

10. The Hungarian person lives directly to the left of the monkey.

11. The third house is red.

12. The British person lives next door to the yellow house.

The problem: Where does the koala live and who is eating goulash?

Important hint: Be systematic. If you need to, you can use the hints provided, but first see if you can work out your own techniques to solve the puzzle through a process of elimination.

Hints

- Don't assume that national stereotypes are true!
- Use the grid to help you think logically and systematically about the puzzle.
- Be systematic. Use codes for definitely yes, definitely no and possible, and start with each cell marked possible. Mark each cell as you find the definite answer. Alternatively, write the initials of all the possible answers in each cell.(e.g. pets: L M K T S). Cross off each letter as it is eliminated.
- You may want to use a pencil and rubber so you can adjust your codes as needed.
- Deal with each clue in turn until the answers become clear. Go through the list, eliminating those that give you a definite answer each time. Do not cross out a clue until you are certain about the answers it refers to.
- Each time you go through the list, when you have answered as much as you can from the clues, look at the grid. If there are any columns or rows in each section that have only one possible answer, that must be the definite answer for that section. So which other possibilities can you eliminate? For example, if you know that snakes can only be in house 5, then you can also deduce that no other animals live in house 5. Then you can return to the clues with more information.

Houses		1	2	3	4	5

Colour	yellow					
	blue					
	red					
	pink					
	green					

Food	meatballs					
	sauerkraut					
	pickled eggs					
	goulash					
	frogs' legs					

Nationality	Hungarian					
	French					
	Swedish					
	British					
	German					

Pet	lion					
	monkey					
	koala					
	turtles					
	snakes					

Aims and objectives

This activity encourages students to think their way systematically through a process of elimination to reach a valid conclusion. It demonstrates the logical power of deductive reasoning.

The activity can be used to reflect on the importance of reasoning systematically in the Extended Project. It is likely to be most relevant in dissertation and investigation and some artefact design projects. It is a useful exercise to discuss with students when they are first trying to think their way through to a conclusion in their project.

Anticipated student responses

The problem is likely to take most students about 20 minutes to solve once they have worked out an appropriate technique. Most variation in timing comes down to the extent that individual students are naturally logical thinkers or have experienced deductive reasoning processes. The hints allow students to differentiate the activity for themselves. Encourage them to find their own techniques to solve the problem and then reflect on the activity as an analogy for the research and writing process i.e. a body of knowledge about the different possible answers (arguments or interpretations) is built up through evidence and reasoning. Then the objections to each of these alternatives are systematically assessed in order to reach a sound and valid conclusion.

Variations/developments

This could be used with 'Elementary my dear Watson' (see pp. 86-89) for more on induction and deduction.

Houses		1	2	3	4	5
Colour	yellow		■			
	blue					■
	red			■		
	pink	■				
	green				■	
Food	meatballs				■	
	sauerkraut		■			
	pickled eggs					■
	goulash			■		
	frogs' legs	■				
Nationality	Hungarian		■			
	French				■	
	Swedish	■				
	British			■		
	German					■
Pet	lion				■	
	monkey			■		
	koala					■
	turtles		■			
	snakes	■				

Koala's house:	Blue
Who is eating goulash:	British person

Relevant pages in Managing Extended Projects

Chapter 5: 'Constructing logical arguments' (pp. 86-93) has some related material on the validity of arguments.

Further information

Deductive reasoning like this can only be done when the complete range of possible answers are known. For example, it would be impossible to deduce the answers if it were only known that there were different nationalities living in this street but not which nationalities there were. In that case, we could only reason through induction from the clues to some of the possible answers about who might live in which house.

Elementary my dear Watson: logical reasoning

Deduction, induction and validity

How often have I said to you that when you have eliminated the impossible, whatever remains, however improbable, must be the truth? Sherlock Holmes[1]

Deduction is reasoning from the general to the particular. Put another way, a particular conclusion is drawn from what is already known or assumed. It is true because *absolutely all* other possibilities have been excluded, as argued by Holmes. Alternatively, a deductive argument is a *syllogism* that is true *by definition*. For example:

All bachelors are men. James is a bachelor. Therefore James is a man.

Induction is the opposite — reasoning from the particular to the general, or put another way, drawing the most probable general conclusion from the facts in view. For example, *I have seen plenty of swans. They were all white. Therefore all swans are white.*

If you want your conclusion to be convincing it is not sufficient to simply claim that it is true. You must make your case clearly through logical reasoning. This activity helps you to understand the difference between deductive and inductive reasoning, and the certainty of conclusions that can be drawn in each case. These two processes are often complementary in problem solving. Understanding this is the first step to constructing logical arguments with valid conclusions.

If it is true that I have only ever known about white swans, it may be reasonable for me to conclude that all swans are white. However, Europeans were certain for thousands of years that swans were white, but then travellers to Australasia returned with news of black swans!

The philosopher Karl Popper argued convincingly that **inductive** reasoning can only ever give us a *best explanation* for now, as we cannot provide a positive proof that applies in every case unless every case is actually seen. Only proof of existence or disproof of the generalisation is possible: the black swan is proven to exist and it disproves the theory that all swans are white.

Drawing valid conclusions

A **valid** argument is one in which there is a logical link between premises (reasons) and conclusion such that if the premises are true then the conclusion must also be true. Deductive reasoning provides logical proof of a particular conclusion, if the premises are true. This means that it is valid but can't tell us anything substantially new.

Induction can help us to make predictions about future possibilities. However, conclusions reached through induction are not logical necessities and so they are not *true* as such, but they are *probable or plausible*. So, if you use inductive reasoning to support your project's conclusions, you should acknowledge that further evidence might produce alternative conclusions, however unlikely that might be.

Holmes and Watson go camping

Sherlock Holmes and Dr Watson were going camping. They pitched their tent under the stars and went to sleep. Sometime in the middle of the night Holmes woke Watson up and said: 'Watson, look up at the sky, and tell me what you see.'
Watson replied: 'I see millions and millions of stars.'
Holmes said: 'and what do you deduce from that?'
Watson replied: 'Well, if there are millions of stars, and if even a few of those have planets, it's quite likely there are some planets like earth out there. And if there are a few planets like earth out there, there might also be life.'
Holmes said: 'Watson, you idiot. It means that somebody stole our tent.'

Believe it or not, this was voted Britain's favourite joke in 2002![2]

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[1] Arthur Conan Doyle, *The Sign of Four* (1890) Ch.6.

[2] Wiseman, R. (2002) *Laughlab project* Available at http://www.laughlab.co.uk , accessed 7th August 2011

Task 1

Read the explanations of deduction, induction and validity provided. Use the information to help you tackle the questions below. Some of the conclusions (in italics) are reached through induction and some through deduction. Which are which?

1. Alfie is a terrier, *therefore Alfie is a dog*.	
2. *AS-level grades are usually a good indication of how well a student will do in A levels and degree-level studies.*	
3. All cats have fleas. *So Felix the cat has fleas.*	
4. *More than 24 million viewers in the UK watched the royal wedding on the BBC and ITV*, according to the Broadcaster's Audience Research Board.	
5. I sleep for eight hours every night. I never take naps. *So I spend a third of my year asleep.*	
6. This mystery substance is not a plant or an animal. *It is some kind of mineral.*	
7. The murder could only have been committed by one of the three people in the house. Colonel Mustard and Reverend Green both have alibis, *so it must have been you, Professor Plum!*	
8. *It will rain when we are on holiday*, because it always does.	

Now read 'Holmes and Watson go camping'. You will need to think through and write down the unspoken steps in Holmes' reasoning as he only states his conclusion.

Task 2

1. Does Watson's reasoning use induction, deduction or both?

2. Does Holmes' reasoning use induction, deduction or both?

3. Does either conclusion logically exclude other possible conclusions (such that if this conclusion is accepted, all other conclusions must be rejected)?

4. So, have either or both of Holmes and Watson drawn a valid conclusion?
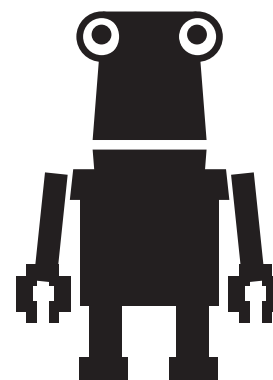
Aims and objectives

This activity introduces students to the concept of logical reasoning and helps to make the distinction between inductive reasoning (common, but not always logically valid) and deductive reasoning (logically valid). The activity will be useful for students who need to judge the validity of arguments they come across in researching and writing dissertation or investigation report projects. It is particularly relevant to science, social science and humanities students.

Anticipated student responses

Task 1

1. Alfie is a terrier, *therefore Alfie is a dog*.	Deduction
2. *AS-level grades are usually a good indication of how well a student will do in A levels and degree-level studies*.	Induction
3. All cats have fleas. *So Felix the cat has fleas*.	Deduction
4. *More than 24 million viewers in the UK watched the royal wedding on the BBC and ITV*, according to the Broadcaster's Audience Research Board.	Induction (from a survey sample)
5. I sleep for eight hours every night. I never take naps. *So I spend a third of my year asleep*.	Deduction
6. This mystery substance is not a plant or an animal. *It is some kind of mineral*.	Deduction (if applied to the natural world)
7. The murder could only have been committed by one of the three people in the house. Colonel Mustard and Reverend Green both have alibis, *so it must have been you, Professor Plum!*	Deduction
8. *It will rain when we are on holiday*, because it always does.	Induction

Task 2

Watson's argument is inductive. He is reasoning from the facts in view (the stars) to a general conclusion (there might be life out there). This may be true but he could not possibly confirm it. This is on the speculative side of what could be considered a 'best explanation'. However, he qualifies his conclusion with the words 'likely' and 'might'. Given that he does not express it as a certain claim, we cannot refute it: it may be unlikely, but it is not logically invalid.

First we need to identify all the assumed (unspoken) premises. The argument unfolds like this:

1. I went to sleep in a tent that obscured my view of the sky (premise 1).

2. I have woken up in the same place and now see stars in the sky (premise 2).

3. Therefore I can conclude that the tent is gone (premise 3/intermediate conclusion).

4. Therefore I can conclude that the tent has been stolen (conclusion).

Is Holmes' argument valid? Putting aside the possibility of magic, there is a significant difference between statements 3 and 4. If statements 1 and 2 are true, then the tent is either invisible (not possible) or it has gone (possible). Therefore statement 3 is the only answer we can accept, so this conclusion is a valid deduction. (The point of the joke is that Watson has missed this 'elementary' fact.) We now know that statements 1, 2 and 3 are true. We turn next to statement 4. Does it follow necessarily from the premises? Holmes decides that the tent has been stolen. However, from what is known we cannot exclude the possibility that it blew away. This too is an induction, like Watson's conclusion. However, Holmes draws the conclusion as a certainty. Its validity is therefore questionable.

Variations/developments

This activity could be used with Einstein's Puzzle (see pp. 83-85), which demonstrates the logical power of deductive reasoning and encourages students to think their way systematically through a range of possibilities to a conclusion. Einstein's puzzle can act as a useful introduction or follow-up to the activity.

You could continue further by asking students to make up some deductive and inductive arguments of their own. If they have already started researching their project topic you could ask them to find and assess examples of induction and deduction in one or two selected sources.

Relevant pages in Managing Extended Projects

Constructing logical arguments: pages 86-87
A glossary of reasoning: pages 91-92

Spot the mistake: errors in arguments

It is much easier to be logical if you know about some of the common mistakes people make in arguments. Errors in reasoning and misrepresentation of opposing arguments are called fallacies. Appeals are common rhetorical techniques that distract us from the logic of an argument. You need to avoid both of them.

This activity should help you identify weaknesses in arguments

Here is a list of common errors in reasoning.

Non-sequitur (unrelated conclusion)	'It does not follow': the conclusion does not follow logically from the premise e.g. a red herring, missing the point, false cause etc.
Circular reasoning (begging the question)	The conclusion does not follow logically from the reason. It simply re-defines or states it in different terms. The conclusion must be accepted for the reason to make sense.
Causal flaw (false cause)	Oversimplifying a cause and effect relationship or confusing cause and effect. This includes post-hoc reasoning.
Post-hoc reasoning (confusing correlation with cause)	'Post hoc ergo propter hoc': after this therefore because of this. Assuming incorrectly that because X happened after Y, it happened because of Y. A type of causal flaw or false cause.
Confusing necessary and sufficient conditions	Assuming that a necessary condition for accepting the conclusion is sufficient on its own; or the opposite, assuming that a condition that is sufficient is necessary when it is not.
Equivocation (conflation)	Confusing different meanings of a word or treating two different concepts as the same thing; drawing a false conclusion on the assumption that they are the same.
Unwarranted generalisation	Generalising too far without good justification. Can be sweeping (stereotyping too broadly) or hasty (from too little evidence).
Ad hominem	'To the man'. Dismissing an argument by attacking the arguer's integrity or status rather than the reasoning presented.
Tu quoque (a type of ad hominem flaw)	'You too'. Disregarding a claim on the basis that the arguer is hypocritical; or justifying a criticised action by batting an arguer's criticism back to them rather than responding with reason.
Straw man	Misrepresenting or trivialising the opposing argument so that it appears absurd and can be dismissed.
False dichotomy (restricting the options)	Misrepresenting an argument such that only two possible options are offered, one of which is unpalatable, when in reality there are other possibilities.
Slippery slope	Taking a possibility and arguing to an extreme conclusion through a series of implausible casual links. Used to misrepresent the consequences of an opposing argument.
Appeal to emotion	Use of persuasive, emotive language to stir up anger, fear, guilt, sympathy, pride, disdain etc. in place of logical reasoning.
Appeal to authority	Recommending a claim or action on the basis that someone of high status or authority also agrees/does it (i.e. not on its own merit).
Appeal to history	Arguing that something will happen just because historically it has been the case (i.e. there is no point doing anything different).
Appeal to tradition	Arguing that something should happen this way because this is how it is conventionally done (i.e. not on its own merit).
Appeal to popularity	Arguing for a claim or action on the basis that other people agree or do it too (similar to tradition, but applies to current, not past actions. Also similar to 'tu quoque', but applied more widely.)

Task 2

Use the list of fallacies and appeals provided to identify twelve common fallacies and five common appeals in the reasoning below.

Argument	Type of error
1. People only riot because it's a hot summer. If it were raining they wouldn't bother, they would stay at home.	
2. If we allow parents to select the sex of their unborn child, then it's a small step to manipulating genes to get blond hair and blue eyes. Before you know it we'll have created a new race of super-intelligent, super-beautiful, super-strong human mutants who will run the world and oppress the rest of us.	
3. Feminism is just an excuse for hating sex and having hairy legs.	
4. I disagree with the minister's speech on state education policy. He sends his children to private school.	
5. My friend's a consultant at the hospital. He smokes and drinks all the time, so I don't think we really need to worry about the health risks.	
6. The best place you could go on holiday is Benidorm. A million tourists a year can't be wrong.	
7. We all have the right to freedom, so we should be free of the burden of taxes.	
8. Murder is wrong. So euthanasia is wrong.	
9. It's going to rain on my birthday. It always rains on my birthday.	
10. Either we cut tax rates for very high earners or they will avoid paying any tax at all, and that would be disastrous for the economy.	
11. What do you mean you don't want to go to law school? You come from a long line of lawyers.	
12. These protesters have no idea what is right for the economy. They don't even have jobs.	
13. All white van drivers are sexist pigs.	
14. I got fired today. I can't believe it happened! It must have been because I broke that mirror last week.	
15. What you are doing is a criminal act, otherwise it wouldn't be against the law.	
16. Won't someone help the poor tragic little children?	
17. If we want to sort out our education system, we don't need to spend more money on schools; instead we should employ better teachers.	

Aims and objectives

This activity will help students to identify and define twelve common fallacies and five common appeals, and to spot fallacies and appeals in simple arguments.

Arguments are made up of one or more conclusions (the claim that you want your reader to accept), which should follow logically from one or more premises (statements containing reasons or evidence). Fallacies and appeals weaken the logical strength of arguments.

- Logical fallacies occur when there is a logical disconnection between premise and conclusion – perhaps the premise is irrelevant, insufficient or too similar to the conclusion that is meant to follow from it.

- Other types of fallacy occur when, instead of logically arguing against the premises in someone else's argument, you criticise the writer or misrepresent their ideas in order to dismiss their conclusion.

- Appeals are rhetorical strategies commonly used in advertising and the media. They are persuasive, but they can weaken arguments because they do not focus on the logic of the premises and conclusions.

Anticipated student responses

1. Causal flaw (oversimplified)
2. Slippery slope
3. Straw man
4. Tu quoque (hypocrisy)
5. Appeal to authority
6. Appeal to popularity
7. Equivocation
8. Non-sequitur
9. Appeal to history
10. False dichotomy
11. Appeal to tradition
12. Ad hominem
13. Unwarranted generalisation
14. Post hoc reasoning
15. Circular reasoning
16. Appeal to emotion
17. Confusing necessary and sufficient conditions

Opinions differ on the taxonomy of some of the fallacies and appeals. Some are very similar to each other, so students may come up with more than one answer. It is more important for the Extended Project that students understand why the reasoning is flawed than that they can accurately name every flaw, so it may be helpful to move fairly quickly onto one of the variations to apply their thinking.

Variations/developments

- Turn it into a card sorting or matching game activity.
- Critique students' own or a peer's arguments for fallacies and appeals
- Examine some tabloid news and advertisements for fallacies and appeals
- Each student writes an argument based on one fallacy or appeal. They read out their argument in turn for the others to guess which one it is.
- Set up a competition to write an argument on a specific topic and give a prize for the person who manages to include the most fallacies and appeals.

Relevant pages in Managing Extended Projects

Constructing logical arguments: pages 86-87
A glossary of reasoning: pages 91-92

Down with everything: evaluating arguments

Persuasive writing takes skill, but it's also an art. Let's unpick a debate and see who's really got the best argument.

This activity should help your ability to argue effectively.

AIMS

Successful, logical, persuasive writing includes the following elements.

- Establishing a factual basis on relevant and reliable evidence.

- Capturing the imagination through striking (but representative) examples, or careful use of humour (exaggeration, irony, incongruity etc.).

- Presenting and clarifying relevant values or principles – creating the 'perspective'.

- Clear paragraph structure for each part of the argument (point, explanation, examples/evidence, link/intermediate conclusion) – each one should be a mini-argument that can stand alone as well as contributing to the final conclusion.

- Well-sequenced arguments that build up to the strongest point.

- Consideration and valid rebuttal of counter arguments.

- Clear, concise and striking conclusion or 'take home message'.

- Logical reasoning that fits with a well-supported conclusion.

- Good grammar, punctuation and spelling.

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1. Read the two blog posts: 'Down with all of that' and 'Down with this too'.

2. For each piece in turn, identify and highlight any evidence, examples, values and humour.

3. Summarise the main 'point' of each paragraph and the main conclusion of each piece.

4. Make a judgement as to which argument is stronger, using the list above.

5. Write your own argument in response to either or both of the blog posts. Use the elements of a successful argument above to make it really convincing.
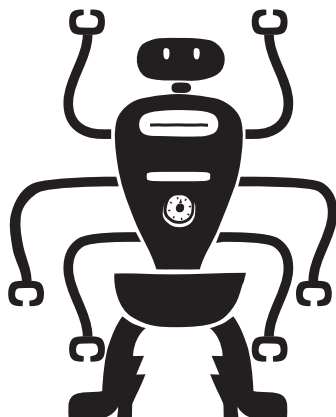
Hint: use exaggeration and irony carefully – a little can go a long way.

Down with all of that

I've just seen yet another advert on TV portraying men as an annoying inconvenience – yeah, you know, you've seen them too. This one was selling air freshener with a bloke being evicted from his house by his wife. Want to get rid of your annoying stinky man? Just press the ejector seat button, and your house can be fragrant and charming once more!
It all started years ago with that Boddingtons advert with Tarquin and his trolleys on backwards. Dozy Tarquin, oh how we larfed. But today these adverts have evolved so the man isn't a character of fun, but just plain stupid, easily manipulated, smelly, or an obnoxious tool.

My immediate reaction is annoyance at the outrageous inequality: just imagine reversing the roles in such an advert where the woman is portrayed as a bit blonde or just a pretty face. There would be a national explosion of oestrogen so large we'd be swimming in it for days. A lot has been said (but not enough) in the press. I do wonder why there hasn't been more of a male backlash against such adverts, but then, as a man, I couldn't be bothered to think too much about it and continued to pick my nose and have a good fart. When I finally got that bogey out and I got back on the case I realised that of course what's happening is that feminism is continuing on its logical course for a complete role reversal, and ultimately women will be in charge and men will stay at home and do the cooking and cleaning.

And I say let it happen. As we all know, men are masters at not doing the housework. Here's our dirty little secret: all men can cook and clean and change nappies perfectly well but simply don't want to – these are not particularly nice tasks. So we do a bad job at hoovering or we burn the pasta just once and our dear partner will tut and do then it 'properly' forever after.

Perfect. So now we have a situation where the woman goes out to work, earns the money, does the cleaning and the cooking and has babies and all that mess whilst the man stays at home sleeping and mowing the lawn. Who's stupid now, blondie?

Posted by guest blogger Dan L
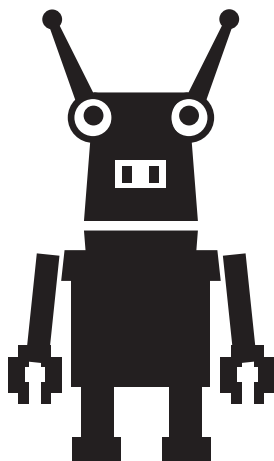
Down with this too

Dan's piece plays on something that infuriates me, the idea that Evil Feminism has won, that poor men are abused, at the mercy of an uncaring system, that the world is now officially run by ball-breaking bitches who hate them all. Nearly 40 years after the Equality Bill, women are paid an average of 17 percent less[1] than men for doing the same jobs. There is a six percent[2] rape conviction rate, and that's only considering the ones that get reported. Eighty-six percent[3] of forced marriage cases involve women. I know we've all heard these statistics a million times before, but come on, really, does this sound like a world run by women? Aside from the blondie comments, how stupid do you think we really are? 'Right, ladies, I have this brilliant idea for a political movement! We'll call it feminism, and it'll put us in charge, and then we can arrange our own inequalities!' Genius.

I think you'll find it's a little more complicated than that. Think about it: the negative portrayal of men in TV ads, far from being a true reflection on the world that should be banned for inequality, is just another way for our current post-feminist culture to lull women into a false sense of security about the fact that feminism has achieved what it needed to so we don't need it anymore. In fact we have nothing to worry about – look at the telly! Blokes are rubbish, we're ace! So we can all stop thinking about icky politics and just go back to shopping and reading *Grazia*.

On top of that, the portrayal of women in these ads is that they can do everything – shop, cook, work, raise the kids, all with faultless mascara and a size 10 waist – all without breaking a sweat, as well as take care of their sweet silly menfolk. Every other study you read says that first world females are falling apart because of the stress of trying to 'have it all', which, for all that people like to blame it on feminism, is actually a culturally implanted idea. Feminism is about giving people choices and letting them decide what works for them, not about ordering them to tick every single box at the same time. So these ads don't do women much good either.

The point is that, if you look beyond the fact that these ads are mean to men and show a 'feminist reversal' of the roles, then you'll find, as with most things, that constrictive gender codes are bad for men and women, that we'd all be better off if we could operate as people rather than as walking examples of our genitalia.

And another thing. I'm not sure what exactly is 'not particularly nice' about cooking and cleaning, but I know plenty of men who like to eat good food and live an environment that they find pleasing and have no qualms about making these things happen themselves. In fact, it's a little problematic for someone who's complaining about negative gender stereotyping to stereotype his own gender as lazy and manipulative. What's the world coming to when the feminists have to defend the men from the masculinists?

Posted by NickyF

Text adapted from The Opinionist blog: http://theopinionist.co.uk, 6th July 2010

[1] http://www.fawcettsociety.org.uk/index.asp?PageID=23

[2] http://www.cer.truthaboutrape.co.uk/3.html

[3] http://www.fco.gov.uk/en/travel-and-living-abroad/when-things-go-wrong/forced-marriage/

Aims and objectives

This activity aims to develop students understanding of how to argue effectively.

Anticipated student responses

Clearly 'Down with this too' is the more developed argument — there are references to statistical information that backs up the claims made, rather than just anecdotal evidence (although there is some of that too). There is a more nuanced understanding of feminism. 'Down with all that' exaggerates and plays on the stereotypes it is criticising, for example,

'I couldn't be bothered to think too much about it and continued to pick my nose and have a good fart.'

The purpose is humour but it results in inconsistency, which is pointed out by the opponent. 'Down with this too' uses gender stereotypes as well — but with irony, to illustrate the absurdity of the counter argument:

'In fact we have nothing to worry about — look at the telly! Blokes are rubbish, we're ace! So we can all stop thinking about icky politics and just go back to shopping and reading Grazia.'

Variations/developments

1. In preparation for the mid-project review or end of project review, ask students to argue a case for the grade they feel they deserve for their work in the project so far. They will need to study the mark scheme and write a detailed case with examples and evidence that are relevant to points in the mark scheme. They will need to reflect on how they have progressed and developed and what they have learned, and use all this information to reach a reasoned judgement.

2. For a simple approach to analysing the structure of these arguments into paragraphs, you can download a printable template for a 'persuasion map' from here: http://www.readwritethink.org/classroom-resources/student-interactives/persuasion-30034.html

3. For a challenging approach to argument analysis, students can turn each blog post into an argument map, identifying the following argument elements:

- Reasons (R)
- Explanations (Exp)
- Evidence (Ev) & examples (Eg)
- Counter assertions (CAss) and counter arguments (CA)
- Intermediate conclusions (IC) and Main conclusion (MC)

More able students may be able to tackle this straight away once they understand all the terms in this list. These can be found in Managing Extended Projects (p. 91) or at http://www.criticalthinking.org.uk/unit2/. For most students this will be a difficult exercise unless they already have some practice at identifying argument elements in simple arguments. Those who have studied Critical Thinking should find the exercise challenging but manageable.

See http://connectpublications.co.uk/shop/extended_project_activity_pack for answers to Variation 3

Relevant pages in Managing Extended Projects

Chapter 5: Constructing logical arguments: pages 86-92

Writing and presenting the project

Writing better paragraphs: the PEEL approach

Paragraphs are the fundamental building blocks of good writing. A paragraph encapsulates an idea and creates the links between that idea and the rest of the article. Paragraphs enable readers to grasp an idea in its entirety and check that it is understood before moving on. They help the reader to follow the flow of ideas –essential in a long and complex argument.

This activity should help you understand the importance of well-constructed paragraphs for coherent extended writing. It shows you how to use the PEEL technique for identifying paragraph structure.

There is no set length for a paragraph, although most will end up somewhere between 50 and 200 words. Short paragraphs and short sentences can create impact, but longer paragraphs are needed for expressing complex ideas. Most importantly, there should be unity – you should be able to summarise the paragraph into one main point.

To remember paragraph structure, you can use the acronym **PEEL**:

Point ➔ Explanation ➔ Evidence/Example ➔ Link.

The main **point** or thesis statement sets up the paragraph. Supporting **explanation** clarifies the idea. Specific **evidence** or **examples** help to illustrate it. The closing sentence should tie the paragraph together and expand the writer's thesis by **linking** to either the next paragraph or the conclusion of the argument – so setting up the flow of ideas.

The paragraph does not have to start with the main point, however. Sometimes a paragraph starts with a **counter-argument** or **counter-claim** against the main thesis **(C-PEEL)**. Occasionally, the paragraph will start with a linking statement – a 'signpost' which links two or more following paragraphs together e.g. 'There are two problems with this viewpoint. First...' **(L-PEEL).** So PEEL is a guide rather than a rule.

A note on formatting paragraphs: you should either leave a space between paragraphs, or indent the first line. Don't use both techniques together.

Topic sentence —— Media coverage of youth often emphasises the negative effects of peer groups, focusing on their links with violence, drugtaking and anti-social behaviour.

This example illustrates the key point of the paragraph —— For example, newspaper and TV coverage of the riots that took place in British cities in the summer of 2011 often focused on the role of peer groups in using social networking to exchange information about where groups were gathering and which shops were being looted.

Arnett's research on American heavy metal fans shows how underage sex, rebellion and drug taking can be encouraged within the heavy metal subculture – or peer group. —— This reference to research findings provides evidence that supports the key point

This sentence provides a link to the next paragraph which will focus on positive aspects of the peer group. —— However, there is also evidence that the peer group can be a positive influence, giving young people a sense of belonging when they find themselves with an unclear status and identity.

Task

1. Can you identify the paragraphs in this argument? Read through and mark where the paragraph breaks should go.

2. In each paragraph, highlight/annotate the different parts in different colours, so you can see the PEEL/C-PEEL structure.

3. Work with someone else to check through the paragraphing in your own project drafts. Remember that the point of paragraphs is to help the reader to grasp the structure and flow of ideas through the whole piece. If your reader finds this difficult, you may need to work on your paragraphing.

An argument for vegetarianism

'Slavery has stopped. Women have been emancipated. Apartheid, in all its human forms, has been roundly condemned. But the abuse of animals has accelerated.'

One of the most obvious reasons for the abuse of animals in modern society is intensive farming. Intensive farming causes severe stress to animals. Intensively farmed chickens, for example, are forced to grow abnormally proportioned bodies at an unnatural speed by being pumped full of growth hormones and calories. The birds live in squalid, overcrowded conditions, where they attack and mutilate each other through stress and cannot support the weight of their over-developed bodies on their undeveloped legs. After a few weeks, machines execute them. It is a vicious life and a cruel death. Some people might argue that farming animals for food is instrumentally wrong, but not intrinsically wrong. By this they mean that intensive farming methods are wrong, but if we were to give animals happy, healthy lives and quick, painless deaths then eating meat is justifiable. Eating 'ethically produced' free range and organic meat is acceptable to some people because it can be seen as creating the best outcome for humans whilst reducing the cruel treatment of animals. This is known as a utilitarian argument. There are two problems with this position. The first is that it is a minority view. The reality is that many people would prefer to eat 'ethically' produced meat but see it as a luxury they cannot afford, so they rely on intensively farmed meat. This problem remains and is likely to escalate. Rising food prices due to factors such as limited land, rising populations and supermarket dominance all mean increasing pressure to reduce prices through intensive methods. Intensive farming is not going to go away. Secondly, the ethical meat production viewpoint is inconsistent because its proponents argue for animal welfare but they still feel it is acceptable to take away life prematurely, which is not in the animal's interests. Animals have the desire to seek out pleasure and avoid pain, just like us. Also like us, they have the motivation to live and survive. We should treat other animals in the same way that we treat our own species. Intentionally killing animals for food when we have other sources of nutrition is fundamentally immoral. A common counter-argument to this is that predators in the wild do not stop to consider the wellbeing of other species – or even in cases such as the lion, the individuals within their own species. So, it is argued, why should we act differently? But this is irrelevant. Nature 'red in tooth and claw' should not obscure the human ability to reason and empathise. We can think logically and we can empathise with the pain of farm animals, so unlike lions, we can judge the morality of our own actions. Peter Singer, a philosopher, suggests that these human capacities bestow us with rights that animals do not have. With those rights come responsibilities to these other, less powerful species. We have a duty to act as moral beings and therefore we should not kill and eat animals.

Aims and objectives

Although students have learned about paragraphing throughout their education, this is a common area of difficulty with extended writing. Students often fail to see the point of organising their ideas into coherent paragraphs and tend to either produce a 'stream of consciousness' or a confused argument in which several ideas may be jumbled up in a paragraph together. This activity aims to prevent these problems. It is appropriate for any project.

The activity is best undertaken when organising ideas in preparation for starting to write. It is important that students understand that paragraphing needs to be considered early on and throughout the writing and editing process, not just at the end. By paragraphing their ideas properly, they will be able to see for themselves the structure of the argument, its gaps, flaws and repetitions.

Peer reading and review is really helpful here, as the Extended Project writer's task is to communicate their ideas fluently to a lay audience. If their peers cannot follow their argument, there is work to be done on it.

Anticipated student responses

See the annotated argument on the next page.

Variations/developments

Ask students to use a piece of their own writing, the longer the better. They need to paragraph the ideas as described in this activity, at first ignoring the flow of ideas from one paragraph to the next. Then, they can summarise the main point from each paragraph to check that they have separated all the key points. These summaries can be printed, cut up, laid out and moved around on the table until the student is happy with the logical order. With extended writing it is sometimes better to take a low-tech approach, because it is easier to see an overview of the logical flow of ideas through the whole piece of writing.

Relevant pages in Managing Extended Projects

Writing and presenting the project: pages 94-98

Annotated argument

An argument for vegetarianism

'Slavery has stopped. Women have been emancipated. Apartheid, in all its human forms, has been roundly condemned. But the abuse of animals has accelerated.'

One of the most obvious reasons for the abuse of animals in modern society is intensive farming (P). Intensive farming causes severe stress to animals (EX). Intensively farmed chickens, for example, are forced to grow abnormally proportioned bodies at an unnatural speed by being pumped full of growth hormones and calories. The birds live in squalid, overcrowded conditions, where they attack and mutilate each other through stress and cannot support the weight of their over-developed bodies on their undeveloped legs. After a few weeks, machines execute them (EG). It is a vicious life and a cruel death (L).

Some people might argue that farming animals for food is instrumentally wrong, but not intrinsically wrong (P). By this they mean that intensive farming methods are wrong, but if we were to give animals happy, healthy lives and quick, painless deaths then eating meat is justifiable (EX). Eating 'ethically produced' free range and organic meat is acceptable to some people because it can be seen as creating the best outcome for humans whilst reducing the cruel treatment of animals. This is known as a utilitarian argument (L).

There are two problems with this position (L). The first is that it is a minority view (P). The reality is that many people would prefer to eat 'ethically' produced meat but see it as a luxury they cannot afford, so they rely on intensively farmed meat (EX). This problem remains and is likely to escalate (EX). Rising food prices due to factors such as limited land, rising populations and supermarket dominance (EG) all mean increasing pressure to reduce prices through intensive methods. Intensive farming is not going to go away (L).

Secondly, the ethical meat production viewpoint is inconsistent (P) because its proponents argue for animal welfare but they still feel it is acceptable to take away life prematurely, which is not in the animal's interests (EX). Animals have the desire to seek out pleasure and avoid pain, just like us. Also like us, they have the motivation to live and survive. We should treat other animals in the same way that we treat our own species (EX). Intentionally killing animals for food when we have other sources of nutrition is fundamentally immoral (L).

A common counter-argument to this is that predators in the wild do not stop to consider the wellbeing of other species – or even in cases such as the lion (EG), the individuals within their own species (C). So, it is argued, why should we act differently? But this is irrelevant (P). Nature 'red in tooth and claw' should not obscure the human ability to reason and empathise (EX). We can think logically and we can empathise with the pain of farm animals, so unlike lions, we can judge the morality of our own actions (EX). Peter Singer, a philosopher, suggests that these human capacities bestow us with rights that animals do not have. With those rights come responsibilities to these other, less powerful species (EV). We have a duty to act as moral beings and therefore we should not kill and eat animals (Main conclusion).

Jumbled up: the logical flow of ideas

The article below has been jumbled up. Only the first paragraph is in the right place. Can you sort the paragraphs into the correct order to make them flow logically from introduction to conclusion?

....

HOW TO TELL A STORY *adapted from Mark Twain (1897)*[1]

1. I do not claim that I can tell a story as it ought to be told. I only claim to know how a story ought to be told, for I have been almost daily in the company of the most expert story-tellers for many years.

2. But the teller of the comic story does not slur the nub; he shouts it at you—every time. And when he prints it, in England, France, Germany, and Italy, he italicizes it, puts some whooping exclamation-points after it, and sometimes explains it in a parenthesis. All of which is very depressing, and makes one want to renounce joking and lead a better life.

3. Artemus Ward used that trick a good deal; then when the belated audience presently caught the joke he would look up with innocent surprise, as if wondering what they had found to laugh at. Dan Setchell used it before him, Nye and Riley and others use it to-day.

4. The humorous story is told gravely; the teller does his best to conceal the fact that he even dimly suspects that there is anything funny about it; but the teller of the comic story tells you beforehand that it is one of the funniest things he has ever heard, then tells it with eager delight, and is the first person to laugh when he gets through. And sometimes, if he has had good success, he is so glad and happy that he will repeat the 'nub' of it and glance around from face to face, collecting applause, and then repeat it again. It is a pathetic thing to see.

5. The humorous story may be spun out to great length, and may wander around as much as it pleases, and arrive nowhere in particular; but the comic and witty stories must be brief and end with a point. The humorous story bubbles gently along, the others burst.

6. Very often, of course, the rambling and disjointed humorous story *also* finishes with a nub, point, snapper, or whatever you like to call it. Then the listener must be alert, for in many cases the teller will divert attention from that nub by dropping it in a carefully casual and indifferent way, with the pretence that he does not know it is a nub.

7. There are several kinds of stories, but only one difficult kind—the humorous. I will talk mainly about that one. The humorous story is American, the comic story is English, the witty story is French. The humorous story depends for its effect upon the manner of the telling; the comic story and the witty story upon the matter.

8. The humorous story is *therefore* strictly a work of art—high and delicate art—and only an artist can tell it; but no art is necessary in telling the comic and the witty story; anybody can do it. The art of telling a humorous story—understand, I mean by word of mouth, not print—was created in America, and has remained at home.

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[1] Italicised words in paras. 6 and 8 have been added to the original to make the logical flow of Twain's writing easier to detect.
Article is in the public domain, accessed online on 29/08/2011 from http://www.gutenberg.org/files/3250/3250-h/3250-h.htm.

Aims and objectives

To consider how ideas flow logically from one paragraph to the next in writing. This activity is helpful for students who find it difficult to structure the ideas in their writing and can be used in combination with PEEL Paragraphs at the redrafting and editing stage of writing the project.

Anticipated student responses

The correct order is:

1. I do not claim that I can tell a story as it ought to be told. I only claim to know how a story ought to be told, for I have been almost daily in the company of the most expert story-tellers for many years.

7. There are several kinds of stories, but only one difficult kind—the humorous. I will talk mainly about that one. The humorous story is American, the comic story is English, the witty story is French. The humorous story depends for its effect upon the manner of the telling; the comic story and the witty story upon the matter.

5. The humorous story may be spun out to great length, and may wander around as much as it pleases, and arrive nowhere in particular; but the comic and witty stories must be brief and end with a point. The humorous story bubbles gently along, the others burst.

8. The humorous story is (therefore) strictly a work of art—high and delicate art—and only an artist can tell it; but no art is necessary in telling the comic and the witty story; anybody can do it. The art of telling a humorous story—understand, I mean by word of mouth, not print—was created in America, and has remained at home.

4. The humorous story is told gravely; the teller does his best to conceal the fact that he even dimly suspects that there is anything funny about it; but the teller of the comic story tells you beforehand that it is one of the funniest things he has ever heard, then tells it with eager delight, and is the first person to laugh when he gets through. And sometimes, if he has had good success, he is so glad and happy that he will repeat the 'nub' of it and glance around from face to face, collecting applause, and then repeat it again. It is a pathetic thing to see.

6. Very often, of course, the rambling and disjointed humorous story (also) finishes with a nub, point, snapper, or whatever you like to call it. Then the listener must be alert, for in many cases the teller will divert attention from that nub by dropping it in a carefully casual and indifferent way, with the pretence that he does not know it is a nub.

3. Artemus Ward used that trick a good deal; then when the belated audience presently caught the joke he would look up with innocent surprise, as if wondering what they had found to laugh at. Dan Setchell used it before him, Nye and Riley and others use it today.

2. But the teller of the comic story does not slur the nub; he shouts it at you—every time. And when he prints it, in England, France, Germany, and Italy, he italicizes it, puts some whooping exclamation-points after it, and sometimes explains it in a parenthesis. All of which is very depressing, and makes one want to renounce joking and lead a better life.

Variations/developments

1. Cut up a student essay or a range of easier and more difficult news articles, narratives or arguments and ask students to sequence the paragraphs.
2. Use this activity as preparation for a peer assessment activity in which students check the logical flow of each other's writing.

Relevant pages in Managing Extended Projects

Writing coherently: pages 94-95
Editing your work: page 98

This extract from a student essay needs some serious proof reading attention. Can you find and correct all the spelling, grammar and punctuation errors? Watch out for spelling mistakes, US English spellings, punctuation errors and omissions, missed capitalisation and grammatical errors.

This activity helps you to sharpen up your proof reading skills.

AIMS

The Euthanasia Debate

Campaigners against euthanasia have argued that legalizing euthanasia would mean devaluing life. There point is that if euthanasia was legalized it would suggest that in some cases it is better to be dead than disabled. Religious groups reject euthanasia because of they believe that all life is sacred. disability support groups argue that some people with severe disabilities might feel pressured to agree to euthanasia for the convenience of othersThese groups argue that this not only puts them at risk but it also devalues them as human beings. They're suggestion is that euthanasia contravenes human rights.

But the pro-euthanasia argument replies that refusing euthanasia to someone who ask for it meaning that the person is kept alive against their will — and that this contravenes human rights to. The patient may have loss all quality of life and might be in unbearable pain. To be kept alive for months or years in avoidable pain is more cruel than euthanasia. Even without the legalization of euthanasia in the uk, pro-euthanasia campaigners argue that a patients family members should be able to accompany them to a clinic such as dignitas in Switzerland without being prosecuted. It is only human to allow a person who wants to die to do so in dignity when and how they choose with their family around them.

Some people argue that legalising euthanasia would result in a Nazi-style state. This argument refers to the Nazi's policy of non-voluntary euthanasia. This began in 1939 with the euthanasia of incurabley sick and disabled children, which they called 'mercy death'. That practice led the way to mass murder in the gas chambers as World War Two progressed. So the argument here is that if voluntary euthanasia where to be legalized, then the floodgates would be open to mass murder.

The main flaw with this argument is that legalizing voluntary euthanasia has nothing to do with the actions of the Nazi's. Their program moved from non-voluntary euthanasia for dodgy medical reasons all the way to genocide. Nazi values are not considered to be acceptable in contempory British society, The vast majority of those who support voluntary euthanasia would never support non-voluntary euthanasia, so the argument that legal voluntary euthanasia would automaticly open the way to Nazi-style eugenics and genocide is flawed. It is also argued that strict regulations would be neccesary and their should be a judicial review of each request for euthanasia to avoid any possibility of unlawful killing.

The Euthanasia debate: proof reader's notes

Campaigners against euthanasia have argued that legalizing euthanasia would mean devaluing life. [Their] point is that if euthanasia [were to be] legalized it would suggest that in some cases it is better to be dead than disabled. Religious groups reject euthanasia because [of] they believe that all life is sacred. [D]isability support groups argue that some people with severe disabilities might feel pressured to agree to euthanasia for the convenience of others[.]These groups argue that this not only puts [those people] at risk but it also devalues them as human beings. [Their] suggestion is that euthanasia contravenes human rights.

7 errors

[But T]he pro-euthanasia argument replies that refusing euthanasia to someone who ask[s] for it mean[s] that the person is kept alive against their will – and that this contravenes human rights to[o]. The patient may have [lost] all quality of life and might be in unbearable pain. To be kept alive for months or years in avoidable pain is crueller[2] than euthanasia. Even without the legalization of euthanasia in the [UK], pro-euthanasia campaigners argue that a patient[']s family members should be able to accompany them to a clinic such as [D]ignitas in Switzerland without being prosecuted. It is only [humane] to allow a person who wants to die to do so in dignity[,] when and how they choose[,] with their family around them.

11 errors

Some people argue that [legalizing][3] euthanasia would result in a Nazi-style state. This argument refers to the [Nazi] policy of non-voluntary euthanasia. This began in 1939 with the euthanasia of [incurably] sick and disabled children, which they called 'mercy death'. That practice led the way to mass murder in the gas chambers as World War Two progressed. So the argument here is that if voluntary euthanasia [were] to be legalized, then the floodgates would be open to mass murder.

4 errors

The main flaw with this argument is that legalizing voluntary euthanasia has nothing to do with the actions of the [Nazis]. Their [programme] moved from non-voluntary euthanasia for [dubious] medical reasons all the way to genocide. Nazi values are not considered to be acceptable in [contemporary] British society[.] The vast majority of those who support voluntary euthanasia would never support non-voluntary euthanasia, so the argument that legal voluntary euthanasia would [automatically] open the way to Nazi-style eugenics and genocide is flawed. It is also argued that strict regulations would be [necessary] and [there] should be a judicial review of each request for euthanasia to avoid any possibility of unlawful killing.

8 errors

Total 30 changes

[2] Crueller (UK English), crueler (US). More cruel is acceptable.
[3] Legalising or legalizing are acceptable in UK English, but the spelling should be used consistently. Legalizing has been used throughout the essay so far.

Aims and objectives

The purpose of this activity is to focus students' attention to detail when they are editing and proof reading their own work. It can serve to prompt discussion about:

- The importance of professional standards of written communication.

- The issues with using automatic spelling and grammar checkers that don't always spot ungrammatical word usage and often default to US English.

- The differences between errors and matters of style or convention.

Anticipated student responses

Thirty errors have been corrected in the proof reader's notes. Most of these are spelling and word usage errors, with a few punctuation and capitalisation errors. It is important not to get too hung up on the minutiae here. Grammatical conventions do vary and the Extended Project does not require perfection. All that is required is good, clear communication. Also, it is not the role of the project supervisor to correct language errors in the project, and in fact some exam boards prohibit marking of any written drafts. The teacher does not therefore need to be an English language expert to facilitate this activity. Proof reading should be encouraged as an integral part of the writing process, and this is often best done as a collaborative exercise with other students.

If students need more guidance or want to check any of their judgements on the spelling, punctuation, grammar and corrections in the passage, there are plenty of dictionaries and grammar, punctuation and style guides available online. One caveat — you may want to suggest avoiding the use of forums for advice. Select style guides from university websites (UCL has an English grammar course for students) and reputable dictionaries such as the Oxford or Collins English Dictionaries instead. Do remind students to check that any reference material consulted is designed specifically for UK English rather than US English language use.

One common problem in sixth form writing is the use of tortuous multiple-clause sentences and fussy, pretentious language. The Campaign for Plain English website http://www.plainenglish.co.uk/ is a good place to send any students who insist on writing like this.

Variations/developments

This exercise would be a good introduction to a peer proof reading and collaborative correction exercise.

Relevant pages in Managing Extended Projects

Writing coherently: pages 94-95
Formatting your project: pages 96-97
Editing your work: page 98

Twelve steps for planning and structure

Writing a long essay of your own choice might seem daunting but it needn't be difficult when you break it down into twelve simple steps.

This activity takes you through the process of planning and structuring a piece of writing for your own Extended Project.

AIMS

1. Decide on a topic and do some introductory research to build an overview.

2. Ask lots of questions about your topic. Let your mind think freely and explore all the possibilities. Do some more research if needed.

3. Once you have explored the topic, you are ready to make a shortlist of 4-5 alternative project questions/titles.

4. Analyse your project questions shortlist. Most importantly, you need to define the content terms, i.e. explain precisely what the essay is going to be about; and you need to identify any instruction words that express what you intend to do with the content (e.g. analysis, evaluation, question structures such as 'to what extent is...?' or 'is it right that...?')

5. Choose the question that you think shows the most promise and that will enable you to demonstrate analysis, synthesis/application and evaluation in your project. (Note: you will need to talk this through with your supervisor.)

6. Identify sections for the project. Define aims and plan an estimated word count for each section. A 5,000 word written project is likely to need around 5-7 sections including introduction, research, development/discussion, product/conclusion and evaluation. A practical project will have a similar structure but will have less written content and shorter sections.

7. Create a concept map or mind map, using key words. This will help you to understand how your ideas fit together.

8. Next, plan your detailed research to answer all the questions you have identified. Be systematic with your note taking. You could head up a separate page for each question and add notes to relevant questions as you read through each source. This is a much more efficient way to take notes than just summarising sources one by one. You will probably refine your questions and concept/mind map as your research material expands.

9. When you think you have enough material to answer the question, you need to work out a logical order for the content of each section. You could convert the edited map into a flowchart or hierarchy chart or use the outline view in your word-processing software. You could draft an outline with three levels of detail:

    *   Overview/sections: as described above.

    *   Subsections: For example, a discussion section might have: introduction, arguments for x, discussion of these arguments, arguments against x, discussion of these arguments, conclusion and justification.

    *   Ideas/points: for example, a list of the main arguments against x. When written out fully, points are typically one or two paragraphs in length.

10. Next you need to write the paragraph points. You don't necessarily need to write in order and it is often easier to write the introduction after you have written the middle section. So just start where you feel confident and flesh out the structure, adding linking sentences and cross-references as you fit points together.

11. Having written all the points, you can check for the logical flow of ideas from start to finish, paying particular attention to the fit between the arguments you have presented and your conclusion. You can do this by distilling each paragraph into one point and checking that the outline still makes sense. You may want to re-order some of the points and you might identify some gaps in your reasoning that will need to be filled if your conclusion is to be fully supported.

12. Of course, once you have written the project, you'll need to reference, edit, re-draft and proofread too.

Aims and objectives

This is not a classroom activity as such but a step-by-step guide through the process of planning and structuring a piece of extended writing. It is probably most usefully introduced when students have completed skills development activities and are ready to work on their own project ideas. It also develops some of the ideas on planning and editing writing in the Managing Extended Projects companion book.

Anticipated student responses

Students may need to be encouraged to take this guide one step at a time and to see it as a longer-term activity rather than a 'worksheet' to be rushed through. The steps are not all essential for all students or for all projects, so they should be encouraged to use the guide critically and independently and to trust their own judgements. They may decide that they do not need to use the guide at all, or they may choose to select from it and adapt it to meet their own needs. They might find it contains useful advice if they get stuck. They will probably need to have access to the other activities that are referenced if they have not already worked through these.

Other helpful activities in this book for the 'twelve steps'

Step 2:   You could use the Questions, Questions list (pp. 18) but don't just regurgitate these ideas.

Step 5:   You may want to check the meanings of these terms using the Questions, Questions list.

Step 7:   See Thinking maps (pp. 20-22).

Step 8:   See Note-taking nightmare (pp. 48-50).

Step 10: See Writing better paragraphs: the PEEL approach (pp. 98-101).

Step 11: See Jumbled up: the logical flow of ideas (pp. 102-103) and Thinking maps (pp. 20-22).

Step 12: See Footnote finder (pp. 53-55), Proof Reader Pro (pp. 104-106) and Bibliography: spot the difference (pp. 56-58).

Variations/developments

You could use the twelve steps as a series of targets for self or peer review or for discussion at supervisor meetings.

Relevant pages in Managing Extended Projects

Chapter 1: Starting the project: pages 10-25
Chapter 3: Using sources: pages 43-46, 49-57
Chapter 5: Constructing logical arguments: pages 86-92
Chapter 6: Writing and presenting the project: pages 94-95, 98-103

Chapter 7

Evaluating the project

Warts and all: reflective self-evaluation

A good evaluation is critical, reflective and honest about strengths and limitations. It should address how well you have worked, how successful the outcome is, how much you have enjoyed the process, what difficulties you encountered, what you have learned from the project and how useful it has been to you. It is a good idea to systematically address the four assessment objectives so you might want to follow this structure:

AIMS

This activity aims to help you understand what is involved in a good evaluation. It will help you to write a well-structured, critical self-evaluation of your project.

It also aims to help you to develop an evaluative vocabulary so that you can write a varied and precise evaluation of the different aspects of your project.

AO3: the outcome of the project and any issues in its development
AO2: research skills and useful sources
AO1: planning, project management and self-monitoring skills
AO4: presentation and review, including the most important things you learned, what you would like to do next, and what you would do differently next time.

Task

1. Read the two project evaluations and comment on the extent to which each one is critical and reflective about strengths and limitations. (You can assume that these students have been honest!)

2. Identify where the students have addressed each of the assessment objectives. Has this been done systematically? Is it well structured?

3. Use the 'Evaluation Thesaurus' provided to find and highlight all the evaluative terms used by each student. Which of the project evaluations makes best use of an evaluative vocabulary?

4. Draft your own project evaluation. You should structure it carefully, perhaps around the four assessment objectives, and aim for at least four paragraphs. Try to include new vocabulary. You could choose at least one new word from each section of the Evaluation Thesaurus. Check the precise definitions of words that you are unfamiliar with before you use them – some in each list are synonyms, but others have subtly different meanings.

5. Check your evaluation with someone who is familiar with your project work (a classmate or parent, perhaps). Does he/she agree that you have been critical, reflective and honest about your strengths and limitations? Can they suggest anything you could write about yourself or your project that you haven't already included?

Evaluation: Project 1

The first part of my question made me research what architects think about when they are designing stadiums. The second part made me research whether the design of the stadium impacted how much it is used following the completion of the games.

The introduction of my project acted as a base to refer back to. It helped me stay on the right track while also introducing the topic. By presenting pictures of the individual stadiums I introduced people visually to my project. By giving them a visual of each stadium I felt this would provide them with food for thought and make them eager to read more.

In my literature review I provided readers with a large amount of factual data sourced mainly from websites. I referenced each source used and evaluated them, considering reliability and validity. My literature review contains general information such as the history of the Olympics, how countries win the Olympic bid, and what hosting the

Olympics involves as well as many other sub-headings. While my literature review taught me the most about my topic, it did not provide me with an answer to my question. It did however provide me with useful information and a base for me to begin my discussion.

In my discussion I looked at each of my chosen stadiums in detail considering everything mentioned in my build up. It considers how the stadiums were successful and how they were not both during and following the Olympics. At the end of my discussion although I was unable to provide a one sided answer to my question in my conclusion I did come up with a slightly asymmetrical conclusion. Based on my research I concluded that stadiums are more sustainable if they have an unusual and aesthetically pleasing design and if they have many facilities as opposed to more simple stadiums built with a symmetrical design and with a limited number of facilities.

In my presentation I gave a brief overview of my entire project. I showed what went well and what could have gone better, as well as the things I learnt throughout the project.

Evaluation: Project 2

Although my main aim was to ascertain whether chivalry was ever a genuine social order, the project also gave me the opportunity to investigate aspects of human nature and whether there could be a social code that could work against people's self-interest and yet still be adhered to. Measuring a social ideal has its difficulties in that there is rarely any concrete evidence. For instance, I am well aware that the case study I attempted on Matthew Paris was extremely limited, in terms of both population validity and content. Appraising the consistency of chivalry was also difficult but I believe I was more successful in this. Although my discussion has only a few examples, the research I did helped me to reach sound conclusions.

As the majority of my sources were books written by historians, evaluating them was not difficult as long as I was aware of the varying interpretations and each historian's personal position so that I could counter any biases. The websites I used were largely stores of online journals provided by the college. These online journals are mostly trustworthy due to the peer review process before being published. As well as the sheer depth and breadth of the topic, a significant issue was gaining access to primary sources. I was able to gain access to resources at Kent University, where my sister is an undergraduate. Through the University library I had opportunity to view both secondary and primary sources. However this meant that I could not check any information that I had not noted and brought home, which meant I had to be organized.

I enjoyed the research process and have learned how to process large quantities of information. It helped that the topic was fascinating. Completing the project has given me an insight into how to plan and structure a dissertation. Although at the start 5000 words seemed daunting, as the project progressed it became clear that reaching the limit would not be hard. This understanding of word limits will be useful for future projects. I did not find the Gannt chart I produced for the project proposal especially helpful, although it did make me realize the similarity in deadlines for my history coursework and Extended Projects, so I could plan for these in advance.

After a great deal of refining, my project presentation was successful but I have definitely learned that it was essential to be prepared, both in timing and content.

One of the most striking facts I discovered was the existence of an almost identical but completely separate form of chivalry in the Muslim culture, called futuwwa. This suggests that there is something intrinsic to human societies that produces codes – outside any form of government – with the aim of reducing the effects of an extremely martial lifestyle and protecting those who are less fortunate. If I were to continue this project it would probably evolve into a cross-cultural study of the origins of governing bodies or laws that aim to regulate war and prevent atrocities.

Evaluation Thesaurus

The standard of my work is...

Excellent *(adj)* wonderful, brilliant, marvellous, fantastic, high-quality, very good, exceptional, outstanding, great, distinguished, flawless, faultless, exemplary

Good *(adj)*

1. **Quality**; commendable, desirable, notable, sound, fine
2. **Thorough**; complete, in-depth, substantial, exhaustive, comprehensive, detailed, broad
3. **Effective**; successful, efficacious, useful, serviceable, productive
4. **Organized**; well-ordered, structured, systematic, in order

Satisfactory *(adj)* acceptable, passable, fair, reasonable, tolerable, average, adequate, sufficient

Unsatisfactory *(adj)* weak, unsuitable, limited, disappointing, inadequate, insufficient, ineffective

My product/decisions/conclusions/are...

Sound *(adj)* robust, sturdy, solid, valid, well-founded, considered, reasonable, rational, logical, reliable, dependable, substantial, judicious, trustworthy, cogent

Faulty *(adj)* flawed, defective, unreliable, shoddy, inaccurate, incorrect, weak, ill-founded, unfounded, false, erroneous, invalid, illogical, shaky, fallacious

Original *(adj)* imaginative, inventive, inspired, fresh, innovative, revolutionary, experimental

Unoriginal *(adj)* unimaginative, uninspired, hackneyed, stale, trite, clichéd, derivative

I have been/become more...

Motivated *(adj)* hard-working, industrious, diligent, conscientious, enthusiastic, keen, energetic

Competent *(adj)* proficient, skilled, expert, accomplished, adept, professional, able, knowledgeable

Organized *(adj)* reliable, dependable, methodical, businesslike, efficient

Confident *(adj)* assured, composed, self-reliant, self-assured, bold, courageous, positive, optimistic

Creative *(adj)* imaginative, resourceful, productive, intuitive, pioneering, full of ideas

I found the project/source...

Hard *(adj)* challenging, complex, difficult, arduous, onerous, laborious, daunting

Easy *(adj)* simple, effortless, undemanding, straightforward, manageable

Interesting *(adj)* engaging, enjoyable, absorbing, fascinating, stimulating, inspiring, thought-provoking

Boring *(adj)* tedious, dull, monotonous, repetitive, dreary, tiresome, uninspired, dry

Useful *(adj)* beneficial, advantageous, helpful, worthwhile, appropriate, suitable

Pointless *(adj)* useless, futile, unproductive, insignificant, a waste of time/effort

Important *(adj)* significant, relevant, salient, crucial, essential, key, central, pivotal, seminal, striking

Unimportant *(adj)* insignificant, inconsequential, irrelevant, incidental, marginal, peripheral, trivial

I need to...

Correct *(v)* mend, fix, remedy, rectify, put right, amend, revise, redraft, debug

Change *(v)* alter, convert, modify, reorganize, restructure, remodel, revise, renew, replace, adapt, adjust, transform, transfer, translate, substitute

Improve *(v)* develop, enhance, enrich, perfect, refine, sharpen, streamline, make progress

Elaborate *(v)* develop, expand on, flesh out, add depth, refine, enhance, explain

Learn *(v)* discover, find out, ascertain, appraise, understand, determine, realize, gain insight, be aware/informed, comprehend, understand, assimilate, master, remember

Focus *(v)* concentrate on, spotlight, pinpoint, bring into focus, pay attention to

Apply myself *(v)* commit, devote, dedicate, concentrate, persevere, pursue

Use *(v)* exercise, utilize, employ, draw on, put into practice, engage, implement

Terms selected from: Chambers Thesaurus (1996) Chambers Publishers Ltd. [online],
available at http://www.chambersharrap.co.uk , accessed 13 August 2011.

Aims and objectives

The Extended Project outcome is as much about deeper self-awareness and new competencies as it is about the product you create. So a really good evaluation can make up significantly for other errors and shortfalls. This activity familiarises students with the reflective nature of self-evaluation in preparation for writing the evaluation of their own project. It encourages them to engage with the four assessment objectives and to understand how different aspects of their project map on to these.

You could do tasks 1-3 very early on, as engaging with previous students' evaluations will help to illuminate the purpose of the Extended Project for new students who are trying to grasp what it is all about. It will also alert students to the need to record and reflect on evidence of their experiences and reflections along the way, so will help to make self-evaluation an ongoing formative learning process.

Reflective self-evaluation (as opposed to self-assessment/marking) is a challenging idea for some. When introducing the activity, it should be emphasised that smoothing over the project's bumps in order to create a tidy narrative about one's achievements is the *opposite* of what is required. The evaluation should be 'warts and all': absolutely honest, reflective and critical, using evaluative language to make qualitative judgments about process and outcome. For example, if a student has failed to keep good records of the process, she should not gloss over and 'backfill' the paperwork. In the evaluation, she should examine honestly why that happened, what she has learned from her mistake and what she would do differently next time.

Anticipated student responses

Evaluation: Project 1 is a simple description of the project's structure. It lacks detail and says nothing about what the student has learned from the process. There is an attempt to comment on the nature of the conclusion: 'I was unable to provide a one sided answer to my question', but this is more descriptive than evaluative.

Evaluation: Project 2 is well-structured, detailed, with specific examples and evaluative judgements throughout. In terms of content, it considers the extent to which aims were achieved, highlights some successes, difficulties and challenges, explains how research decisions were made, considers what was helpful or not helpful, identifies what has been learned and points the way for future research.

Variations/developments

1. Introduce the aim of the evaluation process through a discussion of quotes such as:

   'Failure is only the opportunity to begin again more intelligently.' Henry Ford

   'I failed my way to success.' Thomas Edison

2. Use exemplar evaluations from your own previous students, or use final project presentations as a recruitment and induction tool for your next cohort, encouraging prospective students to ask questions about the presenters' experiences.

Relevant pages in Managing Extended Projects

Evaluating your project: pages 110-112
Structuring a discussion: page 89

Chapter 8

Giving an oral presentation

Rainbow presentation

We have all sat through dull lessons. Maybe we don't understand what the teacher is talking about, can't hear what they're saying, or the visual aids are confusing or too small. The outcome of a lesson like this is always the same – we don't learn much. Giving presentations is a bit like teaching a lesson. The key to a good presentation is to captivate the audience with engaging and stimulating content, and to hold their interest with a clear structure and a relaxed delivery.

> **AIMS**
>
> This activity will help you improve your presentation skills in preparation for the final assessed presentation. By creating and delivering your own individual or group presentation on a specific topic, and by watching and evaluating other presentations on the same topic, you will begin to understand what makes a good presentation.

Task

1. Either individually or in a group you are going to produce a presentation on 'Rainbows'.

2. The presentation should last for five minutes and you should spend no more than 25 minutes on preparation.

3. The presentation could use a computer, be in the form of a poster or just be done orally.

4. You can interpret the word 'Rainbows' however you choose. There are many possibilities.

5. First you should make a note of everything that needs to be included in your presentation to make it interesting and accessible to others.

6. If it is a group activity you may want to decide what role each person will have within the group. Everyone in the group should contribute verbally during the final presentation.

7. Once you have planned your presentation you will present it to other students, who will use the criteria below to assess the presentation and give you some feedback on how to improve future presentations.

The other presentations: what do you think?

Look at the criteria below, think about the questions and rate each section out of 10. You should also make a comment about what works well and what could be improved next time.

1. Content	2. Visual aids
Was the content relevant to the title?	Were they easy to read?
Was the content interesting?	Were they relevant?
Did the different parts link together?	Were they interesting?
3. Pace/Voice	**4. Body language**
Could you hear the presentation?	Did the presenters smile?
Did everyone speak clearly?	Were they facing the audience?
Did they stick to the five-minute time limit?	How well did the presenters control their nerves?

Think about...

• What you liked about the presentation and why.

• What you would improve and how.

> Remember that the presentation is an important part of your project so remember the three Ps: Plan; Prepare; Practise.

Aims and objectives

This activity introduces the presentation aspect of the EPQ to students. By preparing a presentation on a specific topic, and watching and critiquing other presentations on the same topic, students will be able to develop their presentation skills and understand what they need to think about and work on for their project presentations.

Anticipated student responses

- Students may end up with similar content in their presentations so it is important to reinforce the point that they should think creatively.

- Some may question why they all have to do a presentation on the same topic so it will be necessary to explain that by doing the presentation on the same topic they will able to identify what works well and what does not.

- Some students may try to avoid playing a part in the delivery of the final presentation so it may be necessary to remind everyone that they need to participate.

Variations/developments

- This activity could be completed as an individual or a group task.

- If it is an individual task more preparation time may be needed.

- 'Rainbows' is just one suggestion for a topic – try choosing your own.

- This could be used as an introductory activity before students prepare a 'project in progress' presentation when they are about half way through the project.

Relevant pages in Managing Extended Projects

Chapter 8: Giving an oral presentation, pages 114-117

Further information

Although you could attempt to do this activity without online access, it works much better if students are able to do some research on the topic. You will be surprised how creative some students are with the title 'Rainbows' and how good the presentations end up even though they've had only 25 minutes preparation time.

Planning a presentation: what would you do?

Sophie has spent the last few months working on her Extended Project. She decided early on that she was going to create an artefact, which meant she had to plan, research, develop and evaluate its production. Sophie is really good at photography and interested in architecture so came up with the idea of producing a series of photographs and illustrations based on the idea of architectural decay and renewal. She has researched areas around the UK that have been regenerated such as the Digbeth and Bullring areas of Birmingham, and Docklands and Shad Thames areas of London. She also found areas that were still 'decaying' and used original illustrations to show her ideas for their renewal.

Sophie is very pleased with her final project but there is still one problem: she has no idea how to present it. As with all Extended Projects, the outcomes and evaluation of a project have to be presented to an audience, but Sophie is very shy and has no idea of the process she needs to go through in order to produce the best presentation. She needs your help!
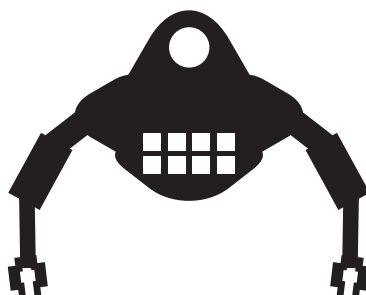
> **AIMS**
>
> This activity will help you to understand the process of planning and preparing a good presentation.

Task

Think about Sophie's project and decide how you would tackle the presentation.
Use the following questions as prompts:

1. What format should the presentation take? Will PowerPoint be used? How will you best showcase the photographs and artwork?

2. How should the presentation be divided into sections?

3. What equipment might be needed?

4. How would you make the presentation interesting to the audience?

5. What questions might the audience ask?

6. How should Sophie overcome her nerves?

Once you have decided how you would tackle Sophie's presentation, start thinking about how you will tackle your own project presentation. What will you need to include? What format will it take? How will you make it interesting?

Aims and objectives

This activity will help students understand the process of preparing a good presentation.

Anticipated student responses

Hopefully students will have different ideas on how they would proceed with the presentation, but there are some core ideas that should be considered.

1. Responses might vary considerably to this question. Some might choose to use PowerPoint; others might suggest working through a series of pictures on a display board; some might suggest she make a video to chart progress – all suggestions should come with reasons.

2. Key sections include an introduction, main section (including research done, how the artefact was created, how the project developed), conclusion and an evaluation.

3. Depending on the original format suggested, ICT equipment might be needed, also a place to display the photos and a DVD player.

4. Clear structure, logical ideas, clearly explained visual aids, friendly relaxed manner, and eye contact. Some stimulus and questions to encourage audience involvement.

5. Keep it simple and plan, prepare and rehearse.

Variations/developments

*   This activity could be done as an individual, paired or group activity.

*   The activity could be done quickly at the start of a lesson and be followed by students working through the questions for their own projects, or it could be done as a much more detailed activity, highlighting all the important aspects of the presentation part of the project.

Relevant pages in Managing Extended Projects

Chapter 8: Giving an oral presentation: pages 114-121

The power of words

Have you ever been persuaded to buy something you don't need or don't even want? Every day people use persuasion to try and convince people to agree with them, to buy something, to vote for someone or to do something they want them to do. Persuasion is a powerful tool.

Once you have finished your Extended Project you will have to share the outcome with others using appropriate communication methods. This may include persuading an audience of the merits of a specific argument or that a product you have made satisfactorily meets a design brief; either way similar techniques will be used. Some of these techniques include the use of repetition, asking rhetorical questions and using emotive language to engage your audience.

AIMS

This activity will help you understand the techniques used to influence listeners in oral presentations and speeches. By reading a speech made by the American President (1963-69) Lyndon B. Johnson, and looking at his use of persuasive techniques, this activity will help you to develop your speech-writing skills before your final presentation.

Common persuasive techniques

- **Repetition** – repetition helps people to remember the key message of a speech as we generally remember far less of what we hear than what we see.

- **Concession** – acknowledging that there are other arguments which have merits, usually done so you can say your idea is better.

- **Rhetorical question** – a question posed without the expectation of a reply, usually to make the listener think. For example, 'Isn't the solution obvious?'

- **Parallelism** – takes place when two similar phrases are joined to make just one sentence. For example, 'Fred plays football. Fred plays cricket.' These sentences would become 'Fred plays football and cricket.' Parallelism is used for greater emphasis.

- **Triples** – to repeat an idea or image three times, usually in a slightly different way. For example, 'Hunting is evil, cruel and outdated.'

- **Emotive language** – words and phrases which produce strong positive or negative feelings. For example, 'The fox is torn viciously apart by savage dogs'.

- **Appealing to audience** – using inclusive pronouns such as 'we', 'you', 'our' and 'us' to make your audience think you are talking only to them. For example, 'We all feel that …'.

- **Superlatives** – using adjectives to imply the highest or lowest quality. For example, 'This is the best school in the area'.

- **Opinion as fact** – to present beliefs as if they are factual truths. For example, 'Obviously, hunting is cruel'.

Task

1. Read the list of persuasive techniques above and then the extract from Lyndon B. Johnson's speech 'To fulfil these rights' about racial inequality in America in the 1960s. Identify as many of the techniques as you can.

2. Now you have seen the persuasive techniques in practice, why not try to write your own persuasive speech. Select a line of argument from your Extended Project and write a one-minute speech using some of the techniques above.

Lyndon B. Johnson: 'To Fulfil These Rights', Howard University, June 4, 1965

Our earth is the home of revolution. In every corner of every continent men charged with hope contend with ancient ways in the pursuit of justice. They reach for the newest of weapons to realize the oldest of dreams, that each may walk in freedom and pride, stretching his talents, enjoying the fruits of the earth.

Our own future is linked to this process of swift and turbulent change in many lands in the world. But nothing in any country touches us more profoundly, and nothing is more freighted with meaning for our own destiny than the revolution of the Negro American. In far too many ways American Negroes have been another nation: deprived of freedom, crippled by hatred, the doors of opportunity closed to hope.

In our time change has come to this Nation, too. The American Negro, acting with impressive restraint, has peacefully protested and marched, entered the courtrooms and the seats of government, demanding a justice that has long been denied. The voice of the Negro was the call to action. But it is a tribute to America that, once aroused, the courts and the Congress, the President and most of the people, have been the allies of progress ...

The voting rights bill will be the latest, and among the most important, in a long series of victories. But this victory – as Winston Churchill said of another triumph for freedom – '...is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.'

That beginning is freedom; and the barriers to that freedom are tumbling down. Freedom is the right to share, share fully and equally, in American society – to vote, to hold a job, to enter a public place, to go to school. It is the right to be treated in every part of our national life as a person equal in dignity and promise to all others.

But freedom is not enough. You do not wipe away the scars of centuries by saying: Now you are free to go where you want, and do as you desire, and choose the leaders you please.

You do not take a person who, for years, has been hobbled by chains and liberate him, bring him up to the starting line of a race and then say, 'You are free to compete with all the others,' and still justly believe that you have been completely fair.

Thus it is not enough just to open the gates of opportunity. All our citizens must have the ability to walk through those gates.

This is the next and the more profound stage of the battle for civil rights. We seek not just freedom but opportunity. We seek not just legal equity but human ability, not just equality as a right and a theory but equality as a fact and equality as a result.

For the task is to give 20 million Negroes the same chance as every other American to learn and grow, to work and share in society, to develop their abilities – physical, mental and spiritual, and to pursue their individual happiness.

To this end equal opportunity is essential, but not enough, not enough. Men and women of all races are born with the same range of abilities. But ability is not just the product of birth. Ability is stretched or stunted by the family that you live with, and the neighbourhood you live in – by the school you go to and the poverty or the richness of your surroundings. It is the product of a hundred unseen forces playing upon the infant, the child, and finally the man.

Much of the Negro community is buried under a blanket of history and circumstance. It is not a lasting solution to lift just one corner of that blanket. We must stand on all sides and we must raise the entire cover if we are to liberate our fellow citizens.

Adapted from *Public Papers of the Presidents of the United States: Lyndon B. Johnson, 1965.* (Washington, D. C.: Government Printing Office) 1966. pp. 635-640

Aims and objectives

This activity aims to help students understand more about the techniques used in persuasive speaking in order to assist them with their presentation skills.

Anticipated student responses

Below are just some suggestions of examples in the text, there will be others.

Repetition	Para 11: '... but not enough, not enough.'
Concession	Para 4: 'The voting rights bill will be the latest, and among the most important, in a long series of victories. But this victory ...'
Rhetorical question	None in the extract
Parallelism	Para 9: 'We seek not just freedom but opportunity. We seek not just legal equity but human ability ...'
Triples	Para 11: '... playing upon the infant, the child, and finally the man.'
Emotive language	Para 2: '... deprived of freedom, crippled by hatred ...'
Appealing to audience	Para 1: 'Our earth ...' Para 9: 'We seek ...'
Superlatives	Para 1: 'They reach for the newest of weapons to realize the oldest of dreams ...'
Opinion as fact	Para 1: 'Our earth is the home of revolution.'

Students could assess each other's own one-minute speeches in a similar way to above.

Variations/developments

- This activity could be an individual, paired or group activity.

- It may take more than one lesson, or part of the activity could be completed for homework.

- In the final task of the activity, students could be given the argument they have to write about in the first instance and work on arguments within their projects.

Relevant pages in Managing Extended Projects

Chapter 8: Giving an oral presentation, pages 114-121

The two-minute presentation challenge

Summarising information is an important skill. Many jobs rely on the ability to deliver information in a succinct and interesting way, whether it is written down in a report or presented in person. Many job interviews now require you to prove your summary skills, either by limiting how many pages you can write in your application or by asking you to present information in a given time period. This is one of the reasons why the presentation part of the Extended Project is so important. This activity will help you to develop both your summary and presentation skills in preparation for your own assessed project presentation.

> **AIMS**
>
> This activity will help you improve your ability to summarise information and deliver it to an audience. By studying an article, summarising it and then preparing a two-minute presentation, you will go through the steps that will help you prepare a logically structured, clear and concise presentation.

1. Read through the article provided once to get a basic understanding of the main ideas.

2. Re-read the article. This should be active reading, where you underline key facts or ideas and label areas for inclusion or those you may want to avoid (for example they may be interesting but too detailed or repetitive). You should also clarify any words or ideas you don't understand.

3. Now divide the article into topic areas that you think need to be addressed and write one detailed sentence about each topic area. Make sure that you include the main points and not just minor details.

4. From the sentences you have written in step 3 you should have a good idea about the focus of your presentation. This focus will help to form the introductory statement to your presentation.

5. The introductory statement and sentences you have written so far will form the basis of your summary presentation; now you need to work on what you are going to say.

6. Once you've written your first draft, revise and edit it.

7. Usually a summary does not include opinions or interpretations, but this presentation should include a critical summary which means you can add your own thoughts and opinions on the strengths and weaknesses of the position put forward in the article.

8. Remember time goes very quickly when you are talking (think of your phone bills!) so make sure that what you have written does not exceed the two-minute limit.

9. Once you have planned your presentation you must be prepared to present it to another student or students.

Watching other presentations

When watching other presentations think about the following:

*   Was it a critical summary of the article? What opinions about the strengths and weaknesses of the article were included?

*   Were you interested? Why or why not?

*   Was the presentation logically structured? Did it link together?

*   How much of the presentation can you remember?

> **Remember...**
>
> An important part of delivering a good presentation is making sure you have rehearsed it first.

Cyber-bulling: Who does it affect?

Almost 1 in 5 young people in the UK have been the victim of cyber-bullying, according to research carried out by academics at Anglia Ruskin University.

The study, commissioned by leading children's charity the National Children's Bureau on behalf of its Wellcome Trust-funded PEAR young people's group, examined the scale of cyber-bullying and the negative effect it has on young people's mental health.

Cyber-bullying is a relatively new problem which involves the use of information and communication technologies to torment, threaten, harass, humiliate, embarrass or otherwise target a young person. As the use of social media sites amongst young people continues to grow, the rate of cyberbullying increases.

Steven Walker, Principal Lecturer in Child & Adolescent Mental Health, led the research amongst young people aged 10-19 and discovered that cyber-bullying was far more prevalent amongst girls. Amongst the young people surveyed, 18.4% admitted to being a victim of cyber-bullying and 69% of those bullied were girls.

More girls than boys had also witnessed cyber-bullying, known somebody who had been cyber-bullied or known somebody who had cyber-bullied others.

Of those who said they had been affected by cyber-bullying the most common effects were on their confidence, self-esteem and mental and emotional well-being. Of the 87 youngsters who had experienced cyber-bullying as victims, a third said it had affected their confidence 'quite a lot' or 'very much', while half (52%) said cyber-bullying had affected their mental and emotional wellbeing. Over a quarter of those who had been cyber-bullied (28.8%) said that they had stayed away from school and over a third (38.9%) had stopped socialising outside school as a result of cyber-bullying.

Most young people thought cyber-bullying was just as harmful as other forms of bullying (74.4%). Some thought it was far worse because this bullying is permanent in written or picture format, could get very personal and be transmitted to many more people more quickly. According to the lead researcher, many of the respondents to the study thought that cyber-bullies did not actually think they were bullying, they thought that cyber-bullying was seen by bullies as merely a form of 'harmless fun', or a joke.

It was also suggested that the secretive nature of cyber-bullying caused additional fear in the victim. Of those who had sought support to deal with cyber-bullying, most said that they had spoken to their parents/carers, while nearly half had approached a teacher or someone else in school. Reasons for not seeking support included a fear of making the cyber-bullying worse and feeling that they were able to deal with the incident themselves.

Some key strategies used by young people to deal with cyber-bullying included; changing or blocking their instant messenger, email addresses and mobile numbers; and being careful who they gave their personal details to. Only a small minority took action by reducing their use of social networking sites.

It has been argued by some that as the use of social media amongst young people continues to grow, host sites and Government agencies need to tackle the problem head on.

Based on the Press Release found at:
www.anglia.ac.uk/ruskin/en/home/news/cyber-bullying.html

Aims and objectives

This activity introduces the idea of linking and applying summary skills to presentations.

Through following a set process students should be able to summarise work in a clear and logical manner so that they are then able to apply the process to their own projects and presentations.

Anticipated student responses

Some may question why they are all working on the same article so it will be necessary to focus on the skills element of this activity. The process is as important as the final outcome.

Some students will struggle to use their own words and may end up re-writing the press release. These students should be encouraged to read the article and then try to remember what was written when they are summarising the key points rather than copying it word-for-word.

If the lesson is followed exactly then students will be producing very similar presentations, so to avoid boredom they could do their presentations to small groups, and then swap roles, or a few students from the overall group could be chosen at random to present.

Students may struggle with the time limit of two minutes, either because they have too much or too little to say. To overcome the timing issue, emphasis should be put on rehearsing the presentation to get an idea of timings. Those with too much to say should think about what can be discarded and those with too little to say should be encouraged to expand their key points.

Variations/developments

- This activity could be an individual or paired activity.

- Different articles could be used, either chosen by students or provided for them.

- Students should be able to complete this activity in one hour, but to save time they could be asked to read the article for homework in advance of the lesson.

Relevant pages in Managing Extended Projects

What makes a good oral presentation: page 114
Preparing the presentation: page 119

Further information

If you do not have access to computers then this is a useful presentation activity as all you need is a piece of written text.

Visual aids: PowerPointless?

We have all experienced 'death by PowerPoint'. It starts as information is simply read off a set of seemingly never-ending slides, with each slide containing so much information that we can't keep track of what the presenter is saying and aren't able to read the information on the slides, so slowly but surely we switch off.

This activity will help you to use visual aids effectively in presentations.

The assessors of the final Extended Project presentations would really prefer not to be bored to death by endless visual aids that add nothing to the presentations; therefore this activity should help you understand what is useful when it comes to visual aids and what is pointless. Although this activity focuses on a PowerPoint presentation, the same basic ideas apply to any visual aids.

Look at the slides below and explain your answers to the following questions:

- Are the slides easy to read?
- Are some better than others? If so, why?
- Are there too many images?
- Do the images add to the presentation or distract from it?
- Are the slides/images appropriate to the audience?

Now complete these tasks.

1. Identify one mistake on each slide.
2. Go through each slide in turn explaining how it could be improved.
3. Using the mistakes you have identified and your methods of improving each slide, make a checklist of things to be considered when making your own visual aids.

Should Spain Ban Bullfighting
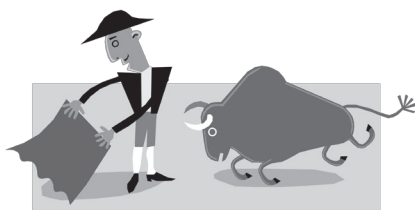
1

What is bullfighting?

Bull-baiting, often ends in a kill.

Bullfighting is sometimes define as:

- an art form
- theatre
- a bloodsport
- an act of cruelty

2

---

3. Bullfighting in Spanish Society

- Franco (Spanish dictator from 1936- 1975) promoted bullfighting as something *Spanish*. The association between Franco and bullfighting was so great that when his dictatorship ended and democracy ensued people predicted its decline.

- Considered an important part of Spanish culture and tradition

- In more recent times there has been a decline in interest. A 2002 poll showed that only 7% of people called themselves fans.

- Many consider the ban in Catalonia in 2010 as a political move showing their desires to become independent from the rest of Spain

3

---

4. Bullfighting as an industry

Some say bullfighting is a source of income for Spain, however it is heavily subsidised in Spain by all levels of the Government.

Over 530 million euros of taxpayers' money is given to the pro-bullfghting industry per year in Spain.

4

---

5. What about Animal Rights?

Bullfighting is criticized by animal rights activists who believe it as a cruel and barbaric blood sport, in which the bull suffers severe stress and a slow, torturous death Anti bullfighting actions are often carried out by animal activists in Spain and other countries

What does the law say?

Although the Animal Welfare Act aims to protect animals, bullfighting is exempt from this Act. If we have a duty to care for the welfare of animals as the Animals Welfare Act suggests, and bullfighting damages welfare, then bullfighting can never be acceptable.

5

Conclusion:

Should bullfighting be banned? YES

Bullfighting should be banned because it is consistent with the view on animal rights adopted in the 2007 Animal Welfare Act.

It is also clear that Government money could be used in other ways.

6

Aims and objectives

This activity will help students understand how to use visual aids effectively. By correcting mistakes and adding their own improvements to the slides students will learn to identify what makes successful visual aids.

Anticipated student responses

1. Mistakes identified could include:

Slide 1: no question mark at the end of the question.	Slide 4: heading not underlined, 'bullfighting' spelt wrong, text size is inconsistent with rest of presentation.
Slide 2: 'define' should be 'defined'.	Slide 5: a full stop is missing so sentence is too long.
Slide 3: different font is used, too many words, no reference for statistic.	Slide 6: the word 'consistent' should read 'inconsistent' – this changes the meaning of the whole sentence.

2. Improvements could include:

Slide 1: a photograph might make the audience view the topic as more serious.	Slide 4: bullet points could be used as on other slides, perhaps a picture would add interest.
Slide 2: easy to read but a better definition could be used.	Slide 5: adding the year that the Animal Welfare Act was passed would help. It would be interesting to know why bullfighting is exempt from the act.
Slide 3: too many words and repetitive so shorter sentences needed. Also the statistic should be referenced.	Slide 6: underlined heading, picture, diagram of arguments to show how conclusion was reached.

Improvements to the overall presentation could include the use of colour, the use of more images to illustrate ideas and more care taken when checking spelling and grammar.

3. The list could include some of the following.

- Consistency and appropriateness of font
- Font size
- Use of bullet points
- Text that can always be read
- Avoiding large amounts of text

- Careful use of images
- Making sure each image serves a purpose
- Appropriate labelling of images
- Avoiding too many slides

Variations/developments

- This activity could be done as an individual, paired or group activity.

- It could form the basis of a peer-assessment exercise where a student could assess and comment on the visual aids used by another student.

Relevant pages in Managing Extended Projects

Using visual aids: pages 117-118

Further information

The work of past Extended Project students could be used to illustrate good/bad use of visual aids.

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