Unit 306: Applying water-borne paint systems using airless equipment

Sample scheme of learning

Please revise the following text to suit your requirements.

This sample scheme of learning covers both classroom and workshop based learning for Unit 306. It is based on 60 hours over 10 sessions, plus additional hours for independent learning. Some suggestions of independent learning are made in the session plans.

This is only an example of a possible scheme of learning. You can use it as it is, adjust it or extract content to suit your delivery needs, or the needs of individual learners. We have endeavoured to make the schemes of learning as flexible as possible: where sessions may be taught out of order, this has been signposted. You may find it useful to use our lesson plan template to translate and adapt the sessions.

The schemes of learning are intended to be learner-focused, and they embrace current pedagogical methodology such as flipped and blended learning. They include the following types of learning tasks:

- **Pre-learning** – tasks for the learner to complete in advance of the session to allow for flipped learning
- **Active learning** – active, experiential and discovery learning approaches
- **Challenge focus** – stretching tasks to challenge more able learners
- **Independent learning** – tasks that learners can complete individually or collaboratively without tutor supervision. These tasks may be given as homework.

Reference is made within the scheme of learning to learning materials and other resources required for each session. A version of this scheme of learning with **full supporting materials** is also available to purchase on **SmartScreen.co.uk**. Resources consist of physical equipment required, as well as any technologies needed. Where possible we have included blended learning activities that make good use of technology so as to help centres fulfil the minimum amount of digital teaching recommended by the government.

The scheme of learning also signposts opportunities within the unit content to introduce the following wider skills and government initiatives:

- English, mathematics and ICT
- employability skills and behaviours
- British values (including the Prevent strategy).

Centres should also incorporate the following themes, where appropriate. Although they are not specifically referred to in the scheme of learning, City & Guilds regards these as essential in the teaching of the qualification:

- spiritual, moral, social and cultural issues
- health and safety considerations, in particular the need to impress upon learners the fact that they must preserve the health and safety of others as well as themselves
- environmental education and related European issues.

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Unit 306: Applying water-borne paint systems using airless equipment

Sample scheme of learning

Course/qualification: _____ **Tutor's name**: _____

Number of sessions: 10 **Delivery hours**: 60 **Venue**:_____ **Group**: _____

Learning outcomes:	**To enable learners to**:
• Perform preparation and protection of the work areas • Demonstrate safe use of a functioning airless spray unit with water-borne coatings • Understand how to rectify faults and defects in equipment and applied coatings • Perform cleaning, maintenance and storage of airless spray equipment and materials	• Be able to prepare and protect the working area • Use an airless system safely when applying water-borne coatings • Be able to identify and rectify application and equipment faults • Clean, maintain and store airless equipment

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Session 1: Introduction to unit and methods of assessment **Suggested Teaching Time**: 1 hour

Learning Outcome: An introductory overview of the unit to provide the learner with the skills and knowledge required to understand all learning outcomes related to this unit.

Topics: N/A

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to refer to the induction paperwork before class. Learners to note their existing knowledge of spraying systems and how airless spray systems compare to HVLP (if previously covered). **Active learning:** • Tutor to give a full explanation of the content and structure of the unit, including the elements of the learning outcomes, how the unit will be delivered and the assessment process. • Clarify learners' understanding of appeals procedure. • Learners to form 'teams' of 2–3 individuals and each team to write down as many of the learning outcomes as possible within two minutes. The team with the most is the 'winner'. • Tutor to clarify learners' understanding of the course, and facilitate a **Q&A session** to answer any questions about the course in advance. **Challenge focus:** • More able learners to **research** whether spraying would be a viable and cost-effective option in the particular field of decorating they are hoping to move into in the future, and how long they would expect to begin making a profit on the equipment outlay. **Independent learning:** • Learners to create the first entry in their **reflective log**, stating what they expect to get out of this unit and how it may benefit them in the future.	**Resources** • Scrap note paper • Textbooks	• Tutor to verify that learners are familiar with the learning outcomes through the 'race task'. • Tutor to question more able learners' research and ask the whole group questions during the presentation to get their thoughts on how they see the future of the industry and what part they feel themselves playing as individuals.

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Opportunities to develop maths, English, ICT and wider skills:

English: • Learners can demonstrate **writing** skills when producing a **reflective log entry** about their thoughts regarding the course. Check that learners have used **informal language** appropriately. Ensure that correct **spelling**, **punctuation** and **grammar** have been used. **ICT:** • Learners have the opportunity to engage in **blended learning** by writing in the reflective log, which makes use of suitable online tools for the task. This is an example of **communication** technology. • Learners may use search engines to source information for the pre-learning requirement.	**British values:** • Remind learners about **staying safe online** and raise awareness of the potential risk of radicalisation, as part of the government's '**prevent strategy**'. • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when writing in their reflective log, and assessing their skills and further training options. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. **Employability:** • Learners should demonstrate they can **actively listen** during the presentation, **understand** what has been said and **respond** accordingly by asking any questions. Learners should be encouraged to use techniques to ensure that they understand the requirements of the course, eg **repeating back** what was said in the 'race' task, **summarising** or **asking clarifying questions**. • Learners should demonstrate **self-analysis** by **identifying** the **skills** needed in the painting and decorating industry, and use this to evaluate and prioritise their **own strengths** and **skill gaps** for development.

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Session 2: Preparing the work area (theory) **Suggested Teaching Time**: 7.5 hours

Learning Outcome: 1. Perform preparation and protection of work areas

Difference between domestic and commercial, items and surfaces, order of work, and types of masking/protection.

Topics: 1.1 – Preparing domestic and commercial work area

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to assume they are preparing a room in their own home for spraying or an office environment they are familiar with and **list** the items they expect to have to move and/or protect with a view of presenting this to other members of the group. **Active learning:** • Following the introduction to the subject by the tutor, the learners should **present** and list their findings on flip chart, then explain the implications of damage in the workplace. • Tutor to show **Presentation 1**, which lists the items, surfaces and order of work, and lead discussion/mind map the various surfaces the learners will encounter. • Tutor to hand out **Worksheet 1**, covering removing items from the workplace, forms of protection, materials used for protection and the correct sequence of preparing a work area, as per the learning outcome. • Learners to split into two groups: one to list items of furniture found in domestic environments and the other to list those found in a commercial one, using **Worksheet 1**, and then list the order in which the work	**Resources** For the tutor to devise/source in advance: • **Presentation 1** • **Presentation 2** • **Worksheet 1** **Materials** • Samples of protective sheeting • Spray shield • Masking machines • Flip chart • Textbooks	• Tutor to mark **Worksheet 1**, checking the peer-marking and providing comments. Tutor to also provide comments and feedback on the use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to listen to and note the comments made by learners to gauge their knowledge, understanding and interest. • Tutor to note the findings from the pre-learning task to gauge learners' acquired knowledge. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge.

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Key learning activity/approach	Suggested materials and resources	Skills check
should be carried out. • Tutor to show **Presentation 2** and https://youtu.be/XmDZ8EDtSWw, https://youtu.be/qZM8ctYplLQ and/or https://youtu.be/Q8iHtB7YAgI, which cover types or methods of protection. • Tutor to hand out samples of the types for learners' evaluation and ask them to list what they consider the advantages and disadvantages of each type. • Tutor to demonstrate masking equipment and correct techniques in the workshop and classroom. • Learners to practise masking and protecting various items in and around the workshop and classroom. • Learners to complete **Worksheet 1** to clarify their knowledge and understanding of the subject. Swap papers and mark each other's work. **Challenge focus:** • More able learners to conduct their own **research** on the effects/damage/durability of various tapes and record their findings to present to the tutor. **Independent learning:** • Learners to **note** the differences between protective tapes sold in retail outlets and those sold in trade outlets, in order to understand the difference in quality and price between trade and retail products. Learners to then **evaluate** whether cheaper options are cost-effective, in order for them to be able to make informed decisions when buying materials.		

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Opportunities to develop maths, English, ICT and wider skills:

English: • Learners demonstrate **reading** skills in the **Worksheet** tasks, as they **identify** the **correct information** to answer the comprehension questions about preparing the work area. • **Speaking and listening** skills in **presenting** can be developed during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**.	**British values:** • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learners should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly. **Employability:** • Learners can experience **working in a team** as part of the active learning team task. Check that learners are **working well together** (letting one another have input, being positive, motivated, etc) and all are **contributing** appropriately.

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Session 3: Applying ventilation and health and safety when using an airless system **Suggested Teaching Time**: 7.5 hours

Learning Outcome: 1. Perform preparation and protection of work areas

Components of LEV, types of ventilation, general health and safety, hazards, legislation, PPE/RPE and risk assessments.

Topics: 1.1 – Preparing domestic and commercial work area; 1.2 – Local Exhaust Ventilation (LEV) and natural ventilation for work area

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to consider the various types of ventilation they have used when applying paint coatings and preparing surfaces, and write a **short essay** on the effectiveness of these types in relation to the hazard. **Active learning:** • Learners to **present** the findings from their essays to the group. Tutor to note the findings for reference later in the session. • Tutor to show https://youtu.be/Ky8y2jDk6i8 about local and natural ventilation, and lead discussion on the effectiveness of each type when dealing with overspray compared to paint fumes and general dust. • Tutor to hand out **Worksheet 2**, covering question on types of natural and LEV ventilation, as per the learning outcome. Learners to complete the worksheet individually, swap papers and mark their peers' work, while tutor presents the correct answers to the group. • Tutor to show **Presentation 4** and show the following **video** https://youtu.be/oAbAYhlMEYs which covers the risks, hazards and precautions related to spraying, and hand around various masks, respirators and gloves for learners' evaluation. • Tutor to **demonstrate** the correct wearing of the types of mask/respirator and how to apply barrier cream correctly. • Tutor to explain the principles of a risk assessment. Learners to source examples of blank **risk assessments** from www.hse.co.uk or google	**Resources** For the tutor to devise/ source in advance: • **Presentation 4** • **Worksheet 2** • **Worksheet 3** **Materials** • Spray masks • Dust masks • Respirators • Filter cartridges • Gloves • Barrier cream • Textbooks	• Tutor to mark **Worksheets 2 and 3,** check the peer-marking and providing comments. Tutor to also provide comments and feedback on use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to listen to and note the comments made by learners to gauge their knowledge, understanding and interest. • Tutor to note the findings from the pre-learning task to gauge learners' acquired knowledge. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge.

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Key learning activity/approach	Suggested materials and resources	Skills check
images and draw up their own design of risk assessment based on the examples. • Learners to complete the blank risk assessments to clarify their knowledge and understanding of the subject. • Tutor to hand out **Worksheet 3**, covering questions and tasks regarding health and safety, including legislation, signs and symbols, PPE, hazards and manual handling, as per the learning outcome. Learners to complete the worksheet to clarify their knowledge and understanding of the subject. • Tutor to conclude session by discussing and recapping answers to worksheets. **Challenge focus:** • More able learners to **design** an LEV system that would function in the workshop. This should cover practicability, cost, disruption and structure of design to fit the workshop. **Independent learning:** • Learners to be encouraged to use natural ventilation wherever possible in the workplace, noting the benefits of a healthy working environment and observing what forms of ventilation are currently used in their place of work. After observing a few different scenarios, learners should produce a **short report** on the subject, considering the practicality of an LEV system in that particular working environment against natural ventilation.		

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Opportunities to develop maths, English, ICT and wider skills:

English: • Learners demonstrate **reading** skills in the **Worksheets** tasks, as they **identify** the **correct information** to answer the comprehension questions about ventilation. • Learners demonstrate **reading** skills in pre-learning and active learning tasks – **identifying** and **summarising** the **main points** about the results they have gathered regarding types of ventilation. • **Speaking and listening** skills in **presenting** can be developed during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. • Learners can demonstrate **writing** skills when producing a **short report** about the practicality of an LEV system. Check that learners have used **formal language** appropriately. Ensure that correct **spelling**, **punctuation** and **grammar** have been used.	**British values:** • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learner should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly. **Employability:** • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify** any feedback as needed and think of their **own next steps** for improvement.

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Session 4: Identifying components and their uses, and setting up an airless system **Suggested Teaching Time**: 7.5 hours

Learning Outcome: 2. Demonstrate safe use of a functioning airless spray unit with water-borne coatings

Types of guns and systems, components of a gun and system, and setting up an airless system.

Topics: 2.1 – Parts and functions of an airless set up; 2.3 – Produce a working airless spray unit

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to **research** what systems are on offer from local hire centres, and gather prices for daily and weekly use. Learners to then put together a spreadsheet, which features tables and graphs ready to **present** to the group. **Active learning:** • Learners to **present** their findings to the group and tutor to lead the discussion, raising points of advantages and disadvantages of hiring against buying outright, maintenance, and health and safety issues. • Tutor to show **Presentation 6**, which features the types of airless system and the main components. • Tutor to strip down the systems and spray guns, identify components and hand around to the group. Tutor to reassemble components. • Learners to split into suitable-size groups and rotate between stripping guns and pumps/hoses. • Learners to complete **Worksheet 4**, which contains questions covering how to set up an airless system, and the identification and functions of the components, as per the learning outcome.	**Resources** For the tutor to devise/ source in advance: • **Presentation 5** • **Worksheet 4** • **Worksheet 5** **Materials** • Airless spray guns • Airless pumps • Hoses • Loose components • Gun spanners • Wrenches • Textbooks	• Tutor to mark **Worksheets 4 and 5**, checking the peer-marking and providing comments. Tutor to also provide comments and feedback on use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to listen to and note the comments made by learners to gauge their knowledge, understanding and interest. • Tutor to note the findings from the pre-learning task to gauge learners' acquired knowledge. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge.

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Key learning activity/approach	Suggested materials and resources	Skills check
• Tutor to show the following videos: https://youtu.be/tnBZZFBdtXY, https://youtu.be/ZjdIFQJ90Vo and/or https://youtu.be/3rUxumFpMeE, which explain the full system assembly. • Learners to reassemble all components and assemble a complete system under the tutor's guidance and supervision. • Learners to complete **Worksheet 5,** which contains questions and problems covering the identification of the various parts and functions of a spray system, as per the learning outcome. Learners to swap papers and mark each other's work. **Challenge focus:** • Learners who display an aptitude for assembly and stripping of components to be given different types of spray guns (HVLP) to strip and clean. **Independent learning:** • Learners to note the different systems that are on the market and various well-known brand names that are associated with spraying in general, and put together a **poster** comparing the differences.		

Opportunities to develop maths, English, ICT and wider skills:

English:	British values:
• Learners demonstrate **reading** skills in the **Worksheets** tasks, as they **identify** the **correct information** to answer the	• Learner to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation.

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comprehension questions about identifying components and setting up a spray system. • **Speaking and listening** skills in **presenting** can be developed during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. • Learners to use **reading** skills in the pre-learning/presentation task, **evaluating** each resource's **usefulness**, **bias** and **point of view**. They should practise determining the **purpose** or **main argument** of each resource. **ICT:** • Learners have the opportunity to engage in **blended learning** in the pre-learning task, which makes use of Excel spreadsheet programmes. This is an example of **cloud-based/collaborative/communication/etc** technology.	• Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learners should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly. **Employability:** • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify** any feedback as needed and think of their **own next steps** for improvement. • Learners can experience **working in a team** as part of the active learning team task. Check that learners are **working well together** (letting one another have input, being positive, motivated, etc) and all are **contributing** appropriately.

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Session 5: Cleaning and maintenance of equipment, and disposal of waste **Suggested Teaching Time**: 7.5 hours

Learning Outcomes: 4. Perform cleaning, maintenance and storage of airless spray equipment and materials; 3. Understand how to rectify faults and defects in equipment and applied coatings

Shutting down procedure, dismantling, cleaning, how to store, waste disposal enforcement, disposing of waste materials, and identifying and rectifying equipment and application faults.

Topics: 4.1 – Cleaning and storage of components and equipment; 4.2 – Safe disposal of materials; 3.1 – Equipment faults; 3.2 – Application faults

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to conduct online research and **make notes** on videos featuring the cleaning and storage of airless equipment, with a view of forming their own questions to offer out to the group to test the amount of knowledge each learner has gained in their own research. Some examples include: www.youtube.com/watch?v=NgHp4wJWuqA, www.youtube.com/watch?v=WkH-SWRHIOc and https://youtu.be/SgRRmGuBD-I. **Active learning:** • Learners to lead their own **Q&A** session amongst their peers. • Tutor to demonstrate equipment faults, using the machine as a prop to highlight specific areas, while questioning the learners on the various parts and functions of the machine. • Tutor to oversee learners setting up one spray system individually. • Using the spray, tutor to **replicate** the outcome of four faults (too much airflow, not enough airflow, not enough material,	**Resources** For the tutor to devise/ source in advance: • **Presentation 6** • **Worksheet 6** • **Worksheet 7** • **Worksheet 8** • **Worksheet 9** **Materials** • Spray equipment • Dust sheets • Buckets • Spanners • Wrenches	• Tutor to mark **Worksheets 6, 7, 8** and **9**, providing comments. Tutor to also provide comments and feedback on use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to note the questions put together by learners to gauge their knowledge, understanding and interest. • Learners' knowledge and understanding of the subject will be highlighted in their efforts to produce their own questions. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge.

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Key learning activity/approach	Suggested materials and resources	Skills check
excessive material) caused by equipment issues. • Learners to complete **Worksheet 6**, which contains questions and problems covering the application faults that can occur when applying materials by spray, as per the learning outcome. • Tutor to show https://youtu.be/u9IF-FFjSkM, which shows application faults. Tutor to then replicate as many of these faults as possible, using the airless spray. • Learners to complete **Worksheet 7**, which contains questions and problems covering the various equipment faults that can occur with airless equipment, as per the learning outcome. • Tutor to show **Presentation 6**, which explains the shutting down and cleaning process. • Tutor to then shut down, remove access material, strip down (**reiterating the same process as session 4**) and clean an airless system, demonstrating maintenance waste disposal and storage methods. • Leaners to complete **Worksheet 8**, which contains questions and problems covering the shutting down and cleaning processes, as per the learning outcome. • Tutor to show the following videos: https://youtu.be/298OjMFOv9M, https://youtu.be/Z8DWcMn9Pj0 and/or https://youtu.be/ov8KSf-XH6Q, which highlight waste disposal and recycling. • Learners to complete **Worksheet 9**, which contains questions and problems covering waste disposal, as per the learning outcome. **Challenge focus:** • Learners who display a good understanding of the stripping	• Full PPE/RPE • Textbooks	

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Key learning activity/approach	Suggested materials and resources	Skills check
and assembly procedure to pair with lesser able learners to help them. **Independent learning:** • Learners to **observe** current waste disposal facilities in the workplace and devise ways of recycling as much waste material as possible. Learners to write a **short report** comparing the facilities on site to those in the college/centre in relation to cost needs, practicality and the provision for collection. Suggestions on improvement could then be made to the person responsible for waste removal on site and in the college/centre.		

Opportunities to develop maths, English, ICT and wider skills:

English: • Learners demonstrate **reading** skills in the **Worksheets** tasks, as they **identify** the **correct information** to answer the comprehension questions about cleaning, maintenance, waste disposal, and equipment and application faults. • Learners demonstrate **reading** skills in pre-learning and active learning tasks – **identifying** and **summarising** the **main points** about the results they have gathered. • **Speaking and listening** skills in **presenting** can be developed during the active learning presentation and independent learning tasks. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. • Learners can demonstrate **writing** skills when producing a **short**	**British values:** • Remind learners about **staying safe online** and raise awareness of the potential risk of radicalisation, as part of the government's '**prevent strategy**'. • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learner should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly.

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report about the waste disposal facilities and recycling. Check that learners have used **formal language** appropriately. Ensure that correct **spelling**, **punctuation** and **grammar** have been used. **ICT:** • Learners have the opportunity to use **advanced search techniques** to **locate, select and evaluate** relevant online sources that provide suitable information about **cleaning and storage**.	**Employability:** • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify** any feedback as needed and think of their **own next steps** for improvement.

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Session 6: Sheeting and protecting work areas exercise (practical session)

Suggested Teaching Time: 7.5 hours

Learning Outcome: 1. Perform preparation and protection of work areas

Practical application of sheeting, masking and removal of items.

Topics: 1.1 – Preparing domestic and commercial work area

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to **research** the most suitable types of masking and sheeting material required to protect their work areas, and put together a materials requisition form. **Active learning:** • Learners to **produce** a requisition form for the tutor, who will supply them with the items required. • Learners to mask broad areas (ceilings and walls), remove/mask fixings, mask windows and/or glass door panels and lighting, and sheet floor areas using various materials appropriate to the surface. • Learners working in pairs to clear a room of furniture and stack/store appropriately. • Learners to remove and store window blinds and curtains. **Challenge focus:** • Learners who complete their work correctly and in good time to be given more complex surfaces, such as staircases, radiators and glass screens, to mask. **Independent learning:** • Learners to put what they have learned into practice by sheeting, masking and protecting in the home or the workplace. Learners to write a diary entry in a **reflective log**, outlining a few key skills that they think	**Materials** • Masking materials • Self-adhesive film • Dust sheets • Screwdrivers • Boxes • Masking machine	• Tutor to view and assess learners' requisitions in order to gauge their knowledge, understanding and interest. • Note learners' ability to select all of the tools and materials they require prior to carrying out the practice. • Mark evaluation and feedback of practical work.

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Key learning activity/approach	Suggested materials and resources	Skills check
are required to complete this unit, which areas are of most interest to them and what they hope to achieve by the end.		

Opportunities to develop maths, English, ICT and wider skills:

English: • Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. • Learners can demonstrate **writing** skills when producing a **reflective log entry** about their thoughts regarding the course. Check that learners have used **informal language** appropriately. Ensure that correct **spelling**, **punctuation** and **grammar** have been used.	**Employability:** • Learners can experience **working in a team** as part of the active learning team task. Check that learners are **working well together** (letting one another have input, being positive, motivated, etc) and all are **contributing** appropriately.

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Session 7: Mixing and preparing materials ready for spraying **Suggested Teaching Time**: 7.5 hours

Learning Outcome: 2. Demonstrate safe use of a functioning airless spray unit with water-borne coatings

Identifying preparation aid, checking and adjusting material viscosity, mixing materials, and WFT/DFT.

Topics: 2.2 – Preparation of materials

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to be given one type of water- or oil-based coating each to **research** from product data information, and list the product's wet and dry film thicknesses for spray application. They should find one item that can be measured in microns to use as a comparison, in order to assist their understanding of the micron as a unit of measurement. **Active learning:** • Each learner to **present** their findings to the group using a flip chart or smartboard. • Tutor to show https://youtu.be/6gWRCkM_Yfo and https://youtu.be/eYT-PypR_Ec, which feature information regarding preparing materials and measuring film thickness. • Tutor to **demonstrate** how to apply ratios when thinning material and gauge pre-thinned material viscosity. • Tutor to **demonstrate** how to measure wet and dry film thickness. • Learners to **practise** and prepare batches of materials ready for spraying. Learners to also **practise** using wet	**Resources** For the tutor to devise/source in advance: • **Worksheet 10** **Materials** • Flip chart/Smartboard • Ford cup • Viscometer • Ratio sticks • Kettle/Pots • Paint materials • Sticks • Sieves/Strainers • Film thickness gauges	• Tutor to mark **Worksheet 10**, providing comments. Tutor to also provide comments and feedback on the use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to listen to and note the comments made by learners to gauge their knowledge, understanding and interest. • Tutor to note the findings from the pre-learning task to gauge learners' acquired knowledge. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge. • Note learners' ability to select all of the tools and materials they require prior to carrying out the practice.

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Key learning activity/approach	Suggested materials and resources	Skills check
and dry film thickness gauges. • Tutor to hand out **Worksheet 10**, which contains questions and problems covering material preparation and evaluation of film thickness, as per the learning outcome. **Challenge focus:** • Learners who display a good understanding of ratios to **prepare** larger batches of paint for the whole group to use. They should note the formulae and calculations they used in order to be able to demonstrate to their tutor a sound knowledge of ratios. **Independent learning:** • Learners to conduct **online research** of the implications of over-thinning paint materials in general and other uses of ratios used by other trades or professions.		

Opportunities to develop maths, English, ICT and wider skills:

English:	British values:
• Learners demonstrate **reading** skills in the **Worksheet** tasks, as they **identify** the **correct information** to answer the comprehension questions about preparing materials. • Learners demonstrate **reading** skills in the pre-learning and active learning tasks – **identifying** and **summarising** the **main points** about the results they have gathered. • **Speaking and listening** skills in **presenting** can be developed	• Remind learners about **staying safe online** and raise awareness of the potential risk of radicalisation, as part of the government's '**prevent strategy**'. • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop.

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during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. **Maths:** • Learners to practise using **scale/ratio/proportion** in a construction context, as part of preparing paint materials. **ICT:** • Learners have the opportunity to use **advanced search techniques** to **locate, select and evaluate** relevant online sources that provide suitable information about wet and dry film thickness.	• Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learners should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly. **Employability:** • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify** any feedback as needed and think of their **own next steps** for improvement.

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Session 8: Application techniques, film build and maintenance **Suggested Teaching Time**: 7.5 hours

Learning Outcome: 2. Demonstrate safe use of a functioning airless spray unit with water-borne coatings; 4. Perform cleaning, maintenance and storage of airless spray equipment and materials

Set up equipment, testing distance adjustment, speed of movement, triggering, stripe coats, and cleaning and storage.

Topics: 2.4 – Apply coatings using an airless unit; 4.1 – Cleaning and storage of components and equipment

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to seek out three well-known brands of spray machine available in the UK, and consider which would be most suitable for the type of work they do on site, taking into account cost, practicability and typical surfaces they regularly encounter. **Active learning:** • Learners to **present** their finding to the group, in order for others to be able to select the type of equipment which may suit their own circumstances in the future. • Tutor to show: https://youtu.be/XeJKyGk1B4M, https://youtu.be/KUEyq4axdt8, https://youtu.be/yFTJrCmhPs4, https://youtu.be/FgZ5Pb5kKnA, https://youtu.be/mdVfYxNm5OY, https://youtu.be/xS_0X8KInpQ and/or https://youtu.be/BNUqT05P8dU: video clips which condense many of the outcomes the learners have covered to date in order to re-	**Resources** For the tutor to devise/source in advance: • **Worksheet 11** **Materials** • Water-borne paints • Spray equipment • Buckets • Gun spanners • Wrenches • Textbooks	• Tutor to mark **Worksheet 11**, checking the peer-marking and providing comments. Tutor to also provide comments and feedback on use of spelling, capitalisation, structure, punctuation and grammar. • Tutor to listen to and note the comments made by learners to gauge their knowledge, understanding and interest • Tutor to note the findings from the pre-learning task to gauge learners' acquired knowledge. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge. • Note learners' ability to select all of the tools and materials they require prior to carrying out the practice. • Mark, evaluate and provide feedback of practical work. • Evaluation of independent learning activity's photographs/videos and notes.

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Key learning activity/approach	Suggested materials and resources	Skills check
fresh and re-cap knowledge. • Learners to complete **Worksheet 11**, which contains questions and problems covering the spraying techniques and issues when applying coatings, as per the learning outcome. Learners to swap papers for marking • Tutor to demonstrate assembly and testing procedures, and then the spraying techniques required. • Learners to get into pairs and assemble airless spray equipment. Tutor to check safe assembly of equipment prior to spraying. • Learners to **prepare** their own materials and apply water-borne coats to ceilings, walls and surfaces which feature internal and external corners and obstructions such as pipework. • Tutor to monitor progress during task and offer assistance, guidance and feedback. • At the end of the task, learners to strip down, clean, maintain and store systems under close supervision of the tutor. **Challenge focus:** • Learners who are able to master the spraying techniques required to apply airless systems could be given a cordless spray gun to practise their hand skills and shown how to use these guns to touch up and blend paint into the surface. **Independent learning:** • Learners to practise their spraying techniques		

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Key learning activity/approach	Suggested materials and resources	Skills check
using aerosol paint for projects in and around the home and bring in **photographs/short video clips** and bullet-pointed **listings** of the processes/techniques they used.		

Opportunities to develop maths, English, ICT and wider skills:

English:

- Learners demonstrate **reading** skills in the **Worksheet** tasks, as they **identify** the **correct information** to answer the comprehension questions about applying paint by spray, film build and maintenance of equipment.
- Learners demonstrate **reading** skills in pre-learning and active learning tasks – **identifying** and **summarising** the **main points** about the results they have gathered. **Speaking and listening** skills in **presenting** can be developed during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**.

British values:

- Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation.
- Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop.
- Learners can demonstrate how they **change** their **communication style** to suit their **audience** in class. Use of **appropriate language**, **tone** and **body language** should be analysed. Learners should have successfully identified that the **purpose** of the question and answer task is to **inform/describe**, and acted accordingly.
- After completing the practical and evaluation task, learners should understand that they can **learn** as much from their **mistakes** as their **successes** if they **reflect** on their experiences. This is an opportunity to discuss the importance of **stretching yourself**, **setting challenging tasks** and **seeking advice** as needed.

Employability:

- Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify** any feedback as needed and think of their **own next steps** for improvement.

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	• Learners can experience **working in a team** as part of the active learning team task. Check that learners are **working well together** (letting one another have input, being positive, motivated, etc) and all are **contributing** appropriately.

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Session 9: Returning spray area ready for re-use and disposal of waste products (practical) **Suggested Teaching Time**: 4 hours

Learning Outcome: 4. Perform cleaning, maintenance and storage of airless spray equipment and materials

Removal and disposal of masking, decanting paints, and disposal of waste solvents.

Topics: 4.2 – Safe disposal of materials

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to produce and print a '**flyer'** using a publishing programme for a fictitious company, advertising safe disposal of materials and highlighting health and safety regulations and methods of disposal. **Active learning:** • Learners to **present** their flyers to the group, discussing style, content and omissions. • Learners to remove all masking materials and dispose of them correctly. • Learners to evaluate each other's work and produce a snagging list of items based on defects, overspray and general cleanliness. • Tutor to lead classroom discussion on all aspects of the unit, incorporating subject which will assist learners in their **multiple choice questions**. **Challenge focus:** • More able learners work as a team to **devise tick lists**, listing possible faults, and then explain to the learners how to use the list when marking their own work areas. More able learners to then check and clarify the content of other	**Materials** • Rubbish bags • Containers • Knives • Cleaning equipment • Rags • Use of computers to produce checklists	• Tutor to evaluate flyer for content, clarifying learners' understanding of waste disposal and law. • Listen and observe how learners come to the decisions about each other's work in order to evaluate and clarify their level of knowledge. • Note learners' ability to select all of the tools and materials they require prior to carrying out the practice.

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Key learning activity/approach	Suggested materials and resources	Skills check
snagging lists for accuracy. **Independent learning:** • Learners to write a diary entry in a **reflective log**, outlining a few key skills that they can apply in the workplace already.		

Opportunities to develop maths, English, ICT and wider skills:

English: • Learners can demonstrate **writing** skills when producing a **reflective log entry** about their thoughts regarding the course. Check that learners have used **informal language** appropriately. Ensure that correct **spelling**, **punctuation** and **grammar** have been used. • **Speaking and listening** skills in **presenting** can be developed during the active learning presentation task. Learners to use the **correct format** with an **introduction**, **supporting evidence** and **statements**, and **conclusions**. They should adapt the content to **suit the audience** and **purpose**. **ICT:** • Learners could use appropriate **publishing software** to produce the flyer.	**British values:** • Remind learners about **staying safe online** and raise awareness of the potential risk of radicalisation, as part of the government's '**prevent strategy**'. • Learners to develop their **self-knowledge**, **self-esteem** and **self-confidence** when making a presentation. • Remind learners about the **importance** of the **laws of England**, and their **purpose** to **protect citizens**, when copying a design from an online source. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • After completing the practical and evaluation task, learners should understand that they can **learn** as much from their **mistakes** as their **successes** if they **reflect** on their experiences. This is an opportunity to discuss the importance of **stretching yourself**, **setting challenging tasks** and **seeking advice** as needed. **Employability:** • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting peer review comments about their work. They should be encouraged to **clarify**

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	any feedback as needed and think of their **own next steps** for improvement. • Learners can experience **working in a team** as part of the challenge focus task. Check that learners are **working well together** (letting one another have input, being positive, motivated, etc) and all are **contributing** appropriately.

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Session 10: Multiple choice questions and answers

Suggested Teaching Time: 2.5 hours

Multi choice questions

Topics: Multiple choice questions covering all aspect of this unit, followed by an open answer session to clarify and correct mistakes

Key learning activity/approach	Suggested materials and resources	Skills check
Pre-learning: Learners to revise from textbooks, handouts and internet resources. **Active learning:** • Tutor to summarise main topics, providing guidance and covering subject content. • Learners to complete **multiple choice questions.** Learners to mark each other's work. • Tutor to carry out an open session covering correct and incorrect answers. • Learners to correct their work and re-take question paper if necessary. **Challenge focus** • Learners who display a good knowledge of the subject to be given the task of devising their own multiple choice questions and/or revision notes to assist/share with their peers. **Independent learning:** • Learners to **revise** weak areas highlighted in **multiple choice questions**.	**Resources** For the tutor to devise/source in advance: • **Multiple choice questions**	• Marking and feedback of learners' answers in the **multiple choice questions**. • Evaluation of learners' grasp of the subject by analysing the multiple choice questions that more able learners have put together.

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Opportunities to develop maths, English, ICT and wider skills:

English: • Learners demonstrate **reading** skills in the pre-learning revision task – **identifying** and **summarising** the **main points they have learned** about airless spraying. • Learner to **describe** in their **reflective log** how they felt about the airless spraying unit as a whole and what career **opportunities** they feel they will have in the future. **ICT:** • Learners have the opportunity to use **advanced search techniques** to **locate, select and evaluate** relevant online sources that provide suitable information about airless spraying for the purpose of revision.	**British values:** • Remind learners about **staying safe online** and raie awareness of the potential risk of radicalisation, as part of the government's '**prevent strategy**'. • Talk about **appropriate learner behaviour**, both at college and at work, when in the classroom/workshop. • After completing all practical and theory tasks, learners should understand that they can **learn** as much from their **mistakes** as their **successes** if they **reflect** on their experiences. This is an opportunity to discuss the importance of **stretching yourself**, **setting challenging tasks** and **seeking advice** as needed. **Employability:** • Learners should demonstrate **self-analysis** by **identifying** the **skills** needed in the revision task, and using this to evaluate and prioritise their **own strengths** and **skill gaps** for development. • Learners to learn how to **use feedback** by **listening openly**, and **accepting** both **praise** and **criticism**, as part of getting feedback on their answers in the **multiple choice questions**.

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