

Essential Skills Wales

Essential Application of Number Skills (EAoNS)

Level 1 Controlled Task

Candidate Pack

Solar Panel Systems

Version 2.3

Sample (Set B)

Instructions

- Fill in the candidate information boxes below.
- Complete **all** parts of the task.
- Sign and date the declaration on the next page when you have completed the task.

Candidate name:
Candidate number:
Date registered for EAoNS:
Unique Learner Number (ULN) (<i>if applicable</i>):
Centre name <i>or</i> number:

You have up to **4 hours in total** to complete this controlled task.

The total time can be split over a number of sessions.

Details of when each session started and ended **must** be recorded below:

Date controlled task started :							
Date controlled task completed (<i>no more than eight weeks later</i>):							
Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7	Session 8
	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>	<i>Date</i>
<i>Duration</i>	<i>Duration</i>	<i>Duration</i>	<i>Duration</i>	<i>Duration</i>	<i>Duration</i>	<i>Duration</i>	<i>Duration</i>
Total time spent:				Supervisor signature:			

If more than eight sessions are required, any further dates/durations should be recorded on a separate sheet.

Produced jointly by the four Essential Skills awarding bodies:

Agored Cymru
City & Guilds
Pearson
WJEC



This task pack contains a scenario, a set of instructions and source material.

- Read the scenario, instructions and source material carefully before you start.
- You will be supervised throughout your time working on this task.
- You can use most of the equipment normally available to you in a real-life situation, including internet access.
- All work submitted must be **entirely** your own. You are not allowed any help with the skills that are being assessed through this controlled task.
- Hand in all of your work at the end of **each** session. You are not allowed to take any task materials away with you, or have access to these between sessions.
- Sign and date the declaration below when you have completed the task.

Candidate declaration

I confirm that this controlled task is entirely my own work and it was completed during the supervised sessions stated on the front page.

Candidate signature: _____ Date: _____

Task instructions: Solar Panel Systems

What you need to find out

Scenario

Your friends are thinking of buying a solar panel system.
They will sell the electricity from the solar panels.

The aims of this task are to:

- work out the power rating of a suitable solar panel system
- work out how much money your friends can make from selling electricity
- choose which company should supply the system.

Use the sources provided.

What you need to do

Part 1

Read through the task and source materials.

Make a plan to show how you will complete this task.

Show your plan as a list, a table, a spider diagram or a flow chart.

You must include:

- the information you need to find in the source materials
- what calculations you will do
- how you will present your findings for Part 2 and Part 3.

(Total for Part 1: 2 marks)

In **Part 2 and Part 3**, you must:

- show all the calculations you do. If you use a calculator, make a note of what you put into the calculator. If you use a spreadsheet, make a note of the numbers and the formulas you use.

Remember to check your calculations.

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Part 2

You need to work out the power rating of a solar panel system for your friends. They want to have the largest system that fits in the available space.

You must:

- use Source 1 to work out the area of the available space for the solar panels
- use Source 2 to choose a suitable solar panel system
- show the power rating of the system you choose.

Your friends will sell the electricity from the solar panel system you choose.

You must use Source 3 to work out:

- how many units of electricity the system can generate each year
- how much money your friends can make each year.

You must:

- present your findings in a suitable way (table, chart, diagram or graph).

Remember to check your calculations.

(Total for Part 2: 9 marks)

Part 3

You need to choose a suitable company to supply the solar panel system.

You must use Source 4 to:

- work out the discounts on solar panel systems from Pete's Panels and GW Systems
- work out the total cost of the systems after the discount. Give your answers to the nearest £10
- present your findings in a suitable way. Use a different method to the one you used in Part 2 (table, chart, diagram or graph)
- choose one company to supply the system. Give a reason for your choice.
- compare the total cost of the system with the money your friends can make each year from selling electricity. Make one comment on your findings.

Remember to check your calculations.

(Total for Part 3: 12 marks)

Sources you should use

Source 1

- Diagram – available space for the solar panels

Source 2

- Table – power rating of solar panel systems

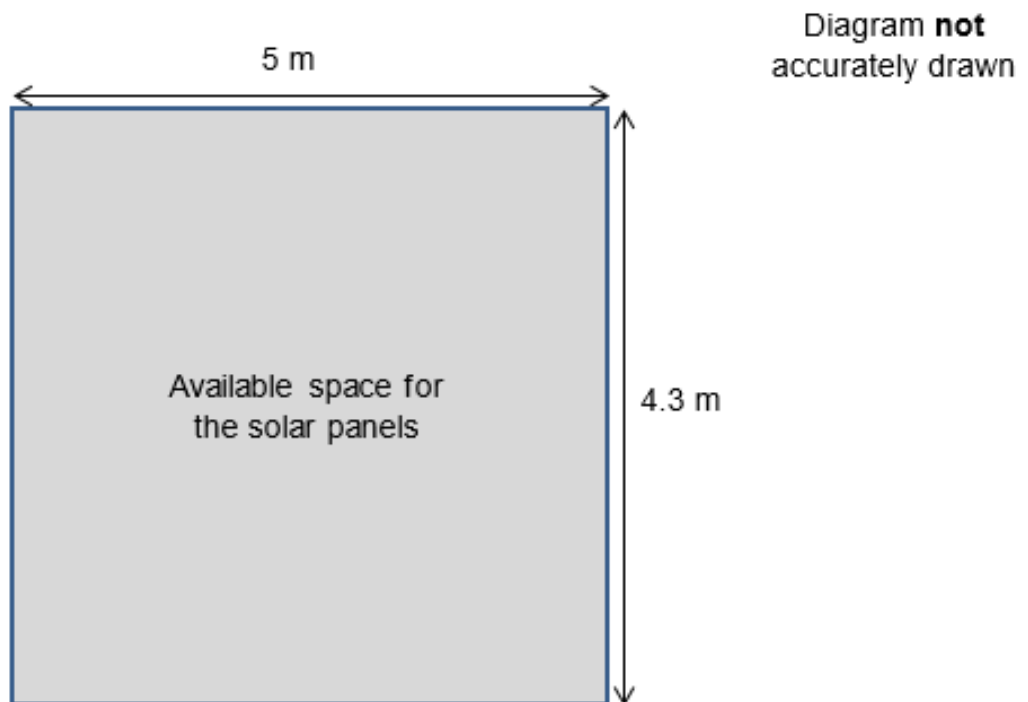
Source 3

- Graph – electricity generated each year by solar panel systems

Source 4

- Information – costs of suitable systems from different companies

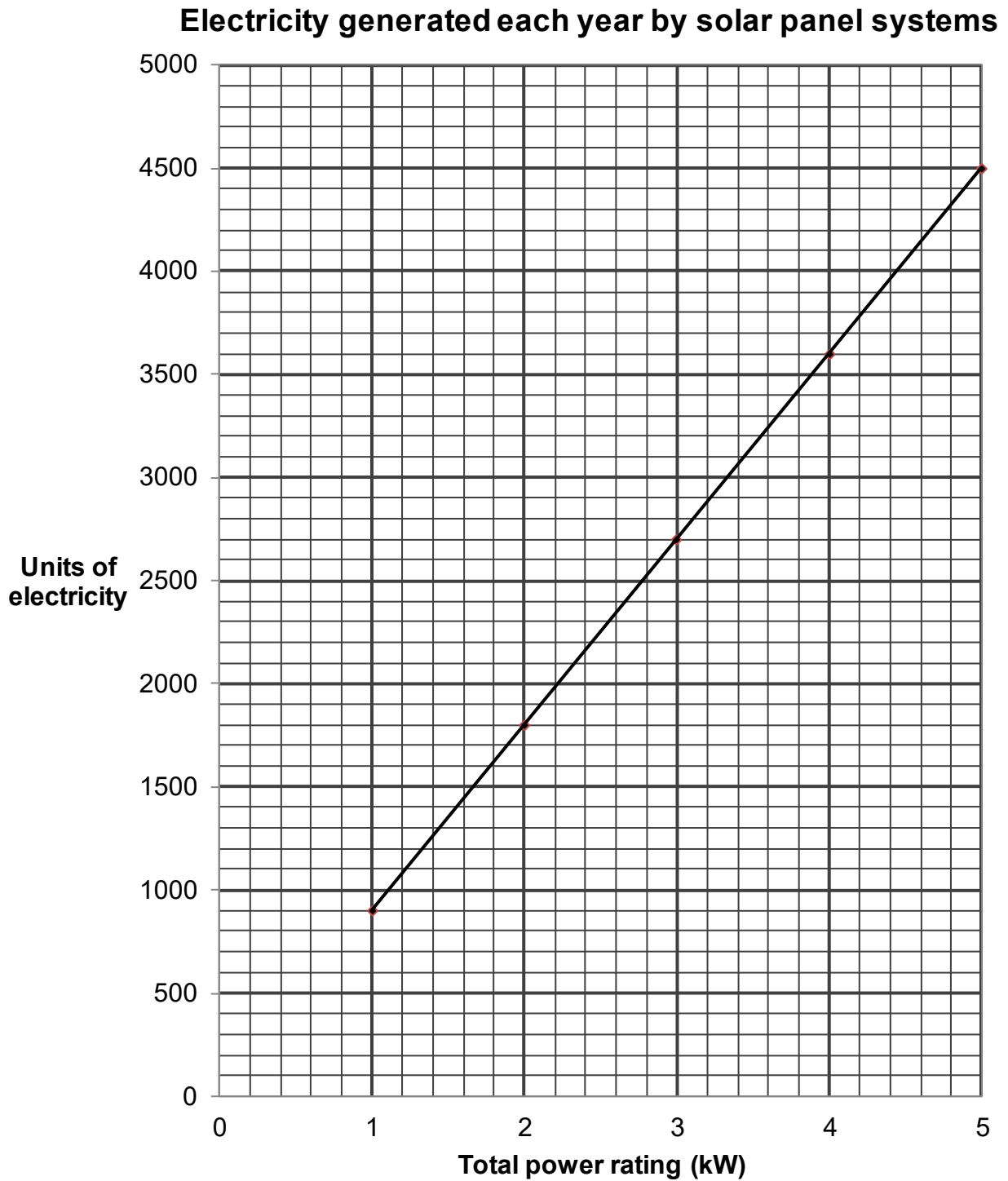
Source 1 Diagram – available space for the solar panels



Source 2 Table – power rating of solar panel systems

Area of space (m ²)	Number of solar panels	Total power rating (kW)
13 – 15.9	8	1.6
16 – 18.9	10	2.0
19 – 22.9	12	2.4
23 – 25.9	14	2.8
26 – 28.9	16	3.2

Source 3 Graph – electricity generated each year by solar panel systems



Money you can make from solar panel systems

£0.056 for each unit of electricity

Source 4 Information – costs of suitable systems from different companies

Pete's Panels

Usual cost for panels and installation
£4399

Special offer: 15% off

Sunny Days Solar Panels

Panels and installation

Total cost £3900

GW Systems

Usual cost of panels and installation
£4000

Special deal: For every £1000 you spend, get £89 back