Measuring in 3D

CONSTRUCTION YOUTH TRUST

Name: Sophia

Job Title: Quantity Surveyor

Role:

- Agreeing the timescales, costs and resources needed to deliver the project
- Drawing up a detailed plan for how to achieve each stage of the project
- Directing a multi-disciplinary team and ensuring that each stage of the project is progressing on time, on budget and to the right quality standards
- Setting out detailed plans for how to achieve each stage of the project
- Demonstrating knowledge of all areas of construction

The skills I use: Organised, practical, good communication skills, the ability to motivate others.

Why I love my job: *"I really enjoy my job because I get to meet different people and work on projects in many different places. Most of all I enjoy the sense of achievement after a project is complete this one of the best feelings I have ever felt."*

In any career within the Built Environment sector, working precisely with measurements is vital.

So, do you know...

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1. How many centimetres are in a metre?

2. How many millimetres are in a centimetre?

3. How many millimetres are in a metre?

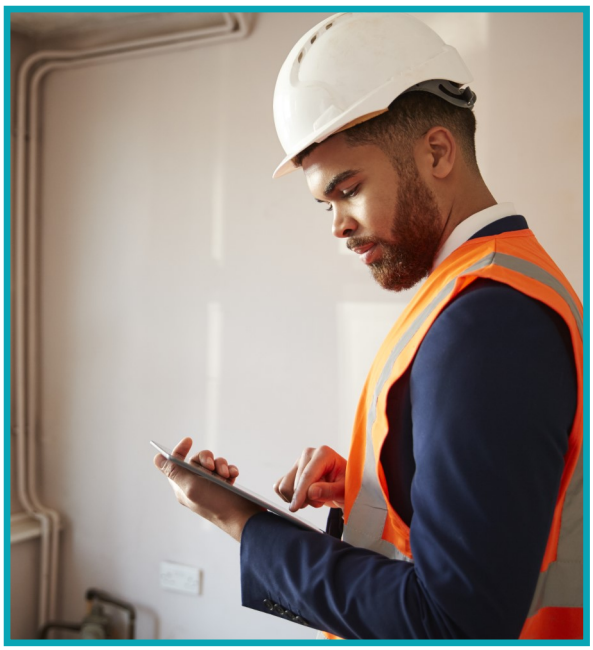
4. Which unit would be best to measure the area of a room's floor?

5. Which unit would be best to measure the thickness of a floor tile?

6. Which unit would be best to measure the length of a single brick?

Some of the important skills for a Quantity Surveyor to have are estimating and rounding.

Before a 'QS' is fully qualified they will have to sit exams practising these skills.



A trainee has measured some windows, radiators, doors and skirting boards.

These are the 5 lengths he has noted down. Convert them from metres into centimetres:

1. 6.6m _____
2. 8m _____
3. 2.5m _____
4. 1.4m _____
5. 11.1m _____

A property investor has asked a QS for a rough price to paint a new flat he has bought.

Can you help by rounding these lengths and widths to 1s.f. and estimating the areas that need to be painted using the correct unit?

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1. 2.42m x 1.95m AREA = _____
2. 8.99m x 5.39m AREA = _____
3. 33.4m x 7.87m AREA = _____
4. 46.9m x 4.57m AREA = _____
5. 93.2m x 62.8m AREA = _____

TOTAL AREA = _____

The Project

Your school is building another room identical to the one we are currently in. That means that the exact same measurements and amount of materials will be used.

Sophia is managing the project.

She has asked you, as a group, to measure up the classroom in order to find out these measurements.

Group roles:

1. Note Taker	To construct a two-way table similar to the example and record all measurements given by the estimator and measurers.
2. Estimator	To estimate each measurement and area using a suitable method and convey your results to the note taker.
3. Measurer	To use a suitable measuring device to measure the room and give the measurements to the note taker using an appropriate level of accuracy.
4. Measurer	To use a suitable measuring device to measure the room and give the measurements to the note taker using an appropriate level of accuracy.
5. Group Leader	To finalise everyone's role in the group. To ensure all measurements and estimates are taken accurately and recorded correctly.

You will need:

- Tape measure
- Ruler
- Paper
- Pencil

The group leader can also be the estimator for a group of four.

Every team member can offer an estimate but the final estimate recorded in the table is from the designated estimator.

The group leader has the final word in the case of any disputes.

The Rules

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You will have 5 minutes to estimate, measure and record the width and height of:

- Two walls
- The doors
- The windows

Then you will need to calculate the areas.
If you do not have time to do so these calculations can be completed afterwards.

You must take the largest possible measurements at any time, ignoring radiators, boxing, dropped ceilings and other obstacles.

Wall 1	TEAM 1 — TEAM 2 — TEAM 3 — TEAM 4
Wall 2	TEAM 2 — TEAM 3 — TEAM 4 — TEAM 1
Wall 3	TEAM 3 — TEAM 4 — TEAM 1 — TEAM 2
Wall 4	TEAM 4 — TEAM 1 — TEAM 2 — TEAM 3

	Estimate to the nearest metre	Measure to the nearest metre
Wall 1 Width Height Area		
Wall 2 Width Height Area		
Doors Width Height Area		
Windows Width Height		

Now you have measured up the room, you need to work out how much paint you need to decorate it and the cost.

AREA TO PAINT: m²

Here is an information sheet about prices and types of paint:

- For interior walls of general living areas:

Acrylic – £9 for a tin containing 750ml. 1 litre will provide 10m² of coverage.

- For Doors:

Glossy Acrylic – £25 for a tin containing 5 litres. 1 litre will provide 12m² of coverage.

Job information

All surfaces require 2 coats.

Using the actual areas in the table calculated by the Quantity Surveyor, work out the total area that would need to be painted.

Although you only have measurements for two of the walls, think of how you can use them to work out the area of the other two. Watch the windows!

How much is it going to cost to paint the room?

COST OF PAINTING WORKS: £