



Activity description

In this activity students measure dimensions from scale drawings and find the areas of rectangles and triangles. They then calculate the amount of paint needed to paint a house and its cost.

Suitability

Level 1 (Foundation)

Time

1–3 hours

Resources

Student sheets

Optional: slideshow

Equipment

Centimetre rulers, calculators

Key mathematical language

Scale, dimensions, area, square metres, m^2 , litres

Notes on the activity

Before using this activity students will need to be familiar with the term ‘elevation’ and the formulae for the area of rectangles and triangles.

Students should take measurements which are correct to the nearest 0.1 cm and check all their calculations. You may wish to show students how to find the area of the first two walls, before leaving them to attempt the rest on their own.

During the activity

Students could work individually or in pairs.

Points for discussion

Check that students know what a litre is and what m^2 means. You could take this further by discussing the connections between m, cm, m^2 and cm^2 .

Discuss the use of a scale to find actual measurements.

Before students attempt the ‘Try these’ questions on the worksheet (page 4 onwards), check that they understand what they need to do to work out the cost of the paint. For example, you might discuss the need to round up to a whole number of tins of paint.

Extensions

Measure the classroom and draw a scale diagram of the floor.

Research the cost of carpet or carpet tiles using the internet.

Calculate the cost, and present the results as an invoice.

Answers Allow ± 0.1 cm in each measurement.

North-facing wall

	Length (m)	Height (m)	Area (m ²)
Whole wall	10.00	5.00	50.00
Large windows	2.00	1.00	2.00
Small window	0.90	1.00	0.90
Door	0.90	2.20	1.98

Area to be painted = 39.12 m²

East-facing wall

	Length (m)	Height (m)	Area (m ²)
Rectangle	7.20	5.00	36.00
Triangle	7.20	2.60	9.36
Whole wall			45.36
Window	0.60	1.00	0.60

Area to be painted = 44.76 m²

South-facing wall

	Length (m)	Height (m)	Area (m ²)
Whole wall	10.00	5.00	50.00
Patio door	2.80	2.00	5.60
Large windows	2.00	1.00	2.00
Small windows	1.60	1.00	1.60

Area to be painted = 37.2 m²

West-facing wall

	Length (m)	Height (m)	Area (m ²)
Rectangle	7.20	5.00	36.00
Triangle	7.20	2.60	9.36
Whole wall			45.36
Window	0.80	1.00	0.80
Door	0.90	2.20	1.98

Area to be painted = 42.58 m²

Total area to be painted = 163.66 m²

Amount of paint needed = 27.28 litres

One tin contains 5 litres

Number of tins = 6

Cost of paint = £191.94