

Solution

First, pupils need to work out the area of the existing floor space. They then need to work out the area of the extension.

Area of existing floor space:

6.4 metres wide

- $1.5\text{ m} + 4.9\text{ m} = 6.4\text{ m}$

Or

- $3.4\text{ m} + 3.0\text{ m} = 6.4\text{ m}$

7.1 metres long

- $2.1\text{ m} + 5.0\text{ m} = 7.1\text{ m}$

Area = $6.4\text{ m} \times 7.1\text{ m} = 45.44\text{ m}^2$

Area of extension:

4.8 metres wide

- $1.8\text{ m} + 3.0\text{ m} = 4.8\text{ m}$

2.7 metres long

Area = $4.8\text{ m} \times 2.7\text{ m} = 12.96\text{ m}^2$

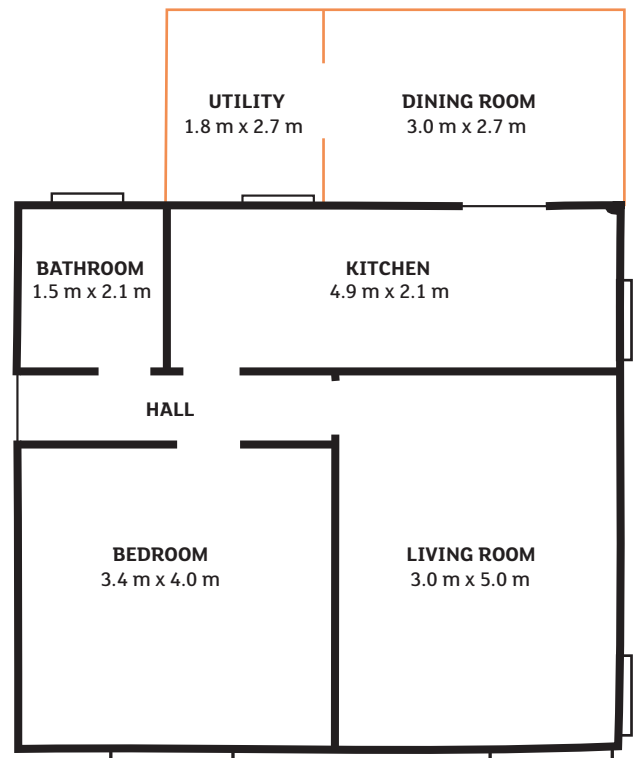
Pupils can choose to calculate 15% of the area of the existing floor space and compare it with the area of the extension:

- 15% of existing floor space = $45.44\text{ m}^2 \times 0.15 = 6.816\text{ m}^2$
- 12.96 m^2 is bigger than 6.816 m^2 so it is greater than 15%.

Or

Pupils can choose to calculate the area of the extension as a percentage of the area of the existing floor space:

- $\frac{12.96}{45.44} \times 100\% \approx 28.5\%$
- $28.5\% > 15\%$



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The area of the extension is bigger than 15% of the existing floor space, so it would be worthwhile.

