

Mathematics

Level 2



Functional Skills Practice Assessment 2 Housing Development

You will need to use the information on the **Data Sheet**, which is situated at the back of this booklet, to answer the questions.

Write down **ALL** your calculations and explain why you are doing them.

Calculators may be used.

1) Show the ratio of the house types built on the estate as follows:

5-bed : 4-bed : 3-bed : 2-bed

_____ : _____ : _____ : _____

2) a) What fraction of the houses built are semi-detached?

b) Show this figure as a percentage.

c) Show this figure as a decimal.

3) If 360 houses were built on the site in the following numbers, how many more 3-bedroom houses would be built than 4-bedroom houses?

$\frac{1}{10}$ 5-bedroom $\frac{1}{5}$ 4-bedroom $\frac{8}{15}$ 3-bedroom $\frac{1}{6}$ 2-bedroom

- 4) The height of the Oatland garage is 2.5 metres. What is the total capacity (volume) of the garage?
- 5) a) In order to buy any of the houses, a deposit of 15% is required.
How much deposit is required for the 3rd most popular house of those sold to date?
- b) A young couple were originally thinking of buying a 3-bedroom, semi-detached house but eventually decided to buy a 3-bedroom townhouse.
How much less deposit did they need?

- 6) Before buying a house, it is useful to know what extra costs will be incurred.

Jenny and Jo are buying an Oatland house and are considering laying 'EASY WIPE' vinyl flooring in the kitchen and toilet.

EASY WIPE
Main Street, No. 32 - across from the post office
**Your one stop shop
for all vinyl floor coverings**
Sold in 3 metre and 4 metre widths

3 metre wide £16.50 per metre	4 metre wide £22.50 per metre
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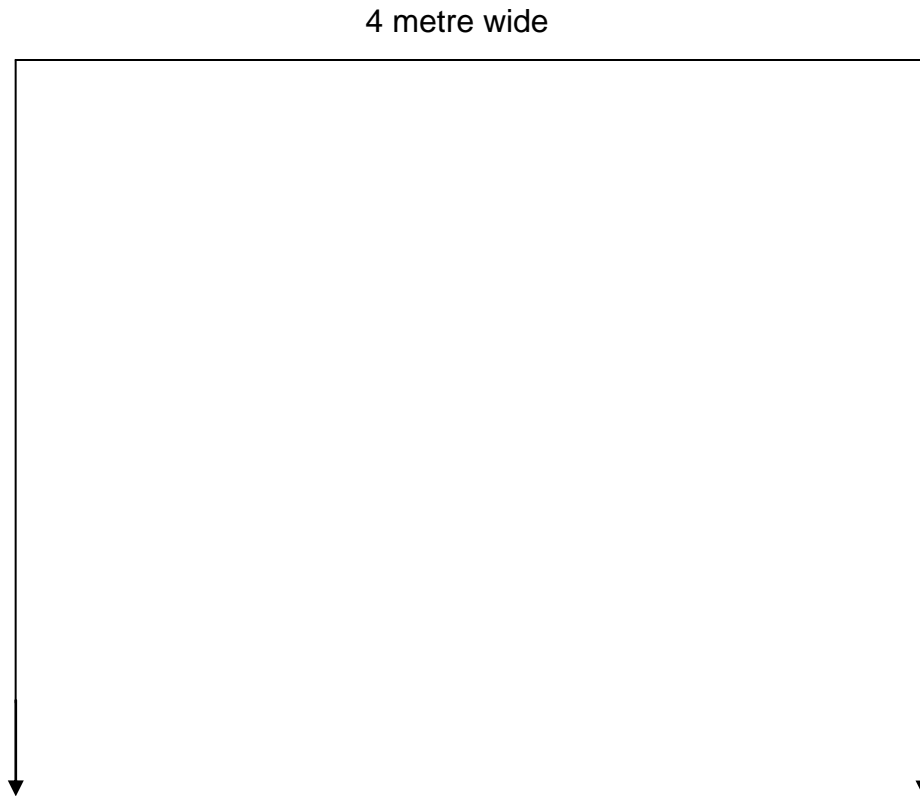
Tel: 01645 855565
LAZER QUEST

- a) Draw a sketch showing how the vinyl flooring would fit if it was cut, **in the most cost effective way**, from the 3 metre wide roll. The floor covering must be in one piece in the kitchen and in one piece in the toilet. Clearly show any wastage.

3 metre wide



- b) Draw a sketch showing how the vinyl flooring would fit if it was cut, **in the most cost effective way**, from the 4 metre wide roll. The floor covering must be in one piece in the kitchen and in one piece in the toilet. Clearly show any wastage.



- c) Work out the cost of **'EASY WIPE'** vinyl floor covering for the kitchen and toilet of an Oakland house.

3 metre wide roll _____

4 metre wide roll _____

d) Is it cheaper to buy the vinyl floor covering for the kitchen and toilet from the 3 metre wide / 4 metre wide roll?

e) How many metres of waste are there on:

3 metre wide roll _____ m²

4 metre wide roll _____ m²

7) A couple would like to buy a property on the development and are not sure which types of houses they can afford. **After paying** a 15% deposit, they have up to £170,000 funds available.

Place a tick in the table at the side of the house types the couple **can** afford.

House Type	✓
Lambeth	
Rochester	
Shrewsbury	
Richmond	
Windsor	
Abbey	
Hampton	
Oatland	

- 8) a) Renzo, an international potential buyer, would like to know how much the Rochester would cost in Euros. The current exchange rate is £1 = 1.2 Euros. How many Euros would the Rochester cost?
- b) When Renzo first saw the Rochester, the exchange rate was £1 = 1.45 Euros. Has Renzo saved or lost money by delaying buying the house? How much has he gained/lost in Euros?

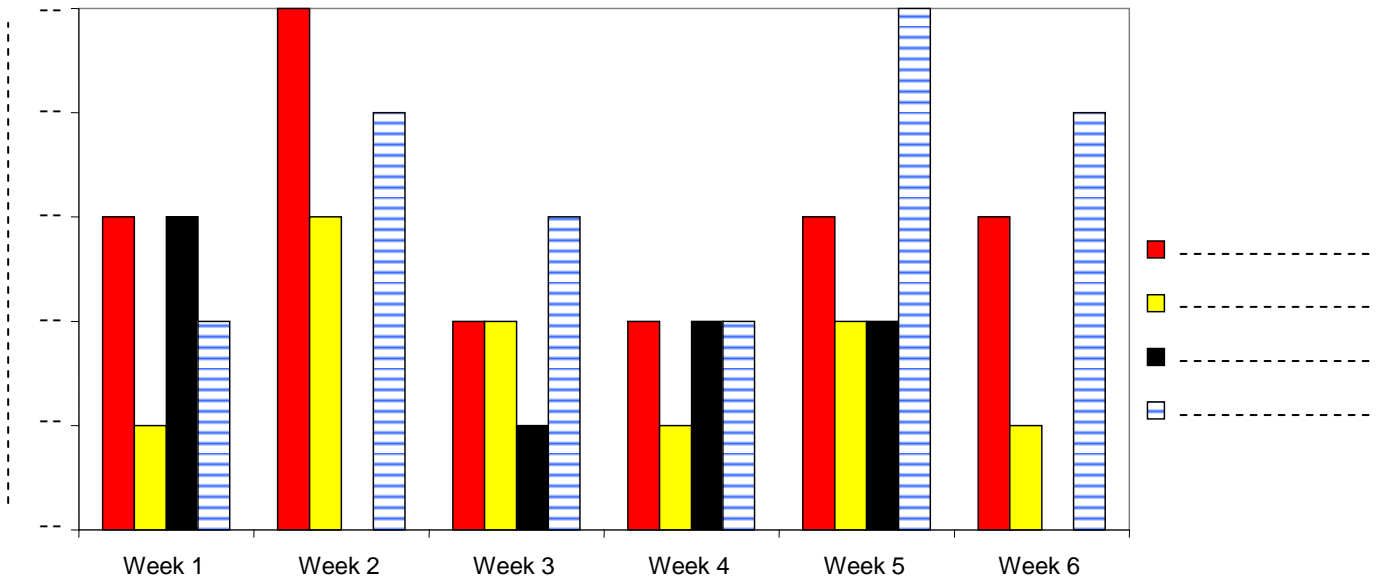
- 9) The following table shows a breakdown of last month's sales. 50 houses were sold in total. What was the total number of detached houses sold? **Show how you might check your answer.**

Detached			Semi-detached		Town Houses	
5-bed	4-bed	3-bed	3-bed	2-bed	3-bed	2-bed
$\frac{1}{25}$	$\frac{3}{25}$	$\frac{1}{5}$	$\frac{3}{10}$	0	$\frac{17}{50}$	0

HOUSE SALES

10)

Sales over a 6-week period



	Lambeth	Rochester	Shrewsbury	Richmond
Week 1	3	1	2	3
Week 2	0	3	4	5
Week 3	1	2	3	2
Week 4	2	1	2	2
Week 5	2	2	5	3
Week 6	0	1	4	3

- a) Using the information given in the table, complete the missing details, indicated by the various dotted lines, on the key, scale and label.
- b) What is the mean average number of Richmonds sold in the 6-week period?

- c) Which statement would best describe a median average?

The median average is not usually one of the values in the data set.

The median average is always the most common value in a data set.

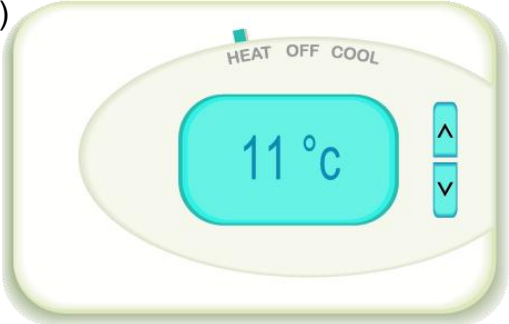
The median average is the middle value of a set of data.

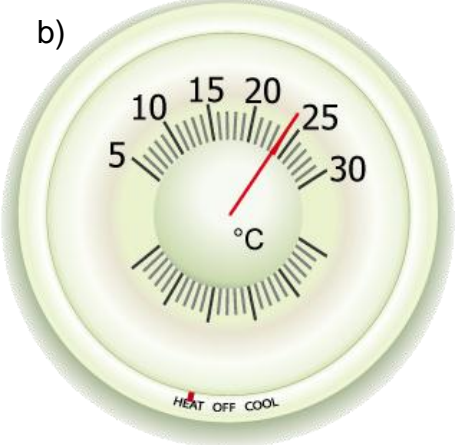
The median average is the most used average.

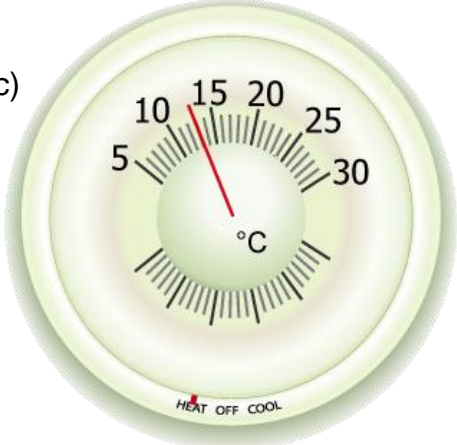
SHOW HOUSES

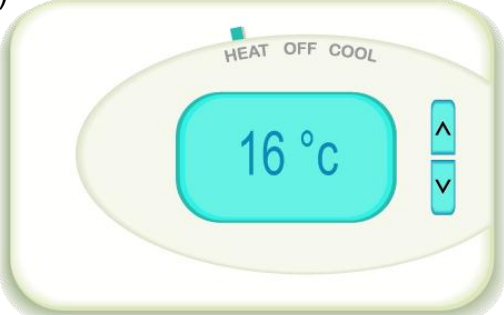
- 11) The show houses need to be warm and inviting, so the temperature should be kept at 21 °C, but the agents keep changing the thermostats. The room temperatures in 4 of the show houses are shown below.

Work out the number of degrees needed to make each show house the correct temperature and circle increase/decrease appropriately.

a)  Degrees: _____
increase (+) decrease (-)

b)  Degrees: _____
increase (+) decrease (-)

c)  Degrees: _____
increase (+) decrease (-)

d)  Degrees: _____
increase (+) decrease (-)

- 12) Each morning, one person must arrive early to open up all the show houses. The houses should have been cleaned after the previous day. The show houses are all located together in one area.

The person opening the show houses should:

- Open up each show house;
- Check all rooms, including toilets and bathrooms, for cleanliness;
- Check that the temperature is set correctly and that the heating system is working;
- Check that the coffee machine is programmed to switch on at the required time;
- All house sales literature is available and tidy;
- Open windows for 15 minutes minimum, then close if raining or a cold day.

If you had to carry out these duties on a Sunday morning, **in your opinion**, what time would you need to arrive at work? Give your reasoning.

- 13) Jan has appointments to show 2 families around the 3-bedroom houses. If there is an equal chance of choosing each type of house, what is the probability that both families would choose the same type of house?

Draw a diagram to explain your answer.

Leveringby Housing Development - Data Sheet

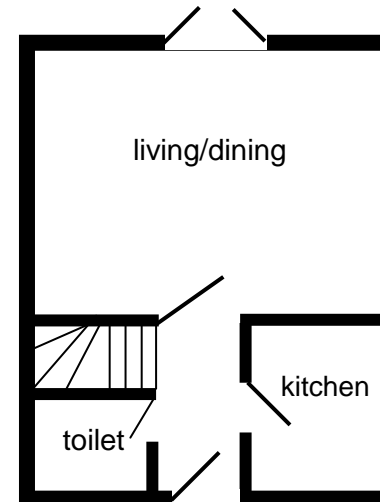
Leveringby is a large housing estate to be built as part of a new town in the south of England. The house types, prices and opening times of the sales office are shown below, along with a house plan showing the ground floor of an Oatland.

House Type	Lambeth	Rochester	Shrewsbury	Richmond	Windsor	Abbey	Hampton	Oatland
	Detached	Detached	Detached	Detached	Semi-detached	Townhouse	Semi-detached	Townhouse
	5-bed	4-bed	4-bed	3-bed	3-bed	3-bed	2-bed	2-bed
	£399,995	£259,995	£219,995	£205,995	£199,995	£129,995	£124,995	£113,995
Total no. built	32	36	60	32	26	54	38	42
Sold to date	18	22	31	18	17	28	26	23
No. available	22	13	24	12	13	22	8	23



There is one show house for each house type.

Show houses and sales office are open:
Saturday and Sunday 10.00 a.m. to 5.00 p.m.;
Thursday and Friday 12.30 a.m. to 7.30 p.m.



Oatland

living/dining	=	4 m × 4.5 m (max.)
kitchen	=	2.9 m × 2.4 m
toilet	=	1.5 m × 1.1 m
garage	=	3.5 m × 6 m

Not drawn to scale