

fs4u

Using Estimation to Check Results

‘How To’ Booklet 7

Using Estimation to Check Results

Example

The length of this paper is 29.6 cm; its width is 21cm. Estimate its area. Then use a calculator to find the exact area.

$$\text{Area} = 29.6\text{cm} \times 21\text{ cm}$$

Estimated, this becomes 30cm x 20cm (one significant figure):

$$= 600\text{ cm}^2$$

Accurately, using a calculator:

$$\begin{aligned}\text{Area} &= (29.6 \times 21)\text{ cm}^2 \\ &= 621.6\text{ cm}^2\end{aligned}$$

If the calculator did not have a decimal point the readout would have been 6216. Using our estimate we know the answer is approximately six hundred so we would be able to position the decimal point between the one and the six i.e. 621.6 cm².

Exercise

Copy the following table and fill in as show by the example:

	QUESTION	ESTIMATE	CALCULATOR
	29.6 x 21	30 x 20 = 60	621.6
1	38.7 x 18.4		
2	270 x 82		
3	595 x 394		
4	20.7 x 30.8		
5	111 x 222		
6	875 x 59.3		

Using Estimation to Judge Quantities

Useful information to consider when making estimations about length

LENGTH

A large ruler is one foot (12 inches) or 30cm long

An adult pace is about one yard (3 feet long) i.e. a bit shorter than a metre.

Exercise

1	Estimate the following lengths in i) centimetres ii) inches
a	length of this sheet
b	length of your desk or table
c	width of a book
d	length of your pen
e	the distance from the tip of your finger to your elbow

Now check your answers by using a ruler or tape measure.

2	Estimate the following lengths in i) metres ii) feet
a	length of the room
b	length of a corridor
c	width of a door
d	length of a door
e	length of a drive (from the gate to the door)

Now check your answers by using a tape measure (you will need someone to help you)

Useful information when making estimations about weight.

WEIGHT

1 kg is just a little more than 2 lb (a bag of sugar or a litre of milk)

1000 grams = 1 kilogram (kg)

16 ounces = 1 pound (lb) (a tin of beans)

Exercise

3	Estimate the following weights in i) grams ii) ounces
a	a book
b	a calculator
c	a tin of baked beans or something similar
d	a hammer
e	a personal stereo
4	Now estimate the following weights in i) kilograms (kg) ii pounds (lb)
a	your weight
b	a chair
c	a garden spade
d	a basket of laundry
e	a vacuum cleaner

Now check your answers using a set of bathroom scales (This question may have to be done at home).