Discussion Problems
Step 3: Metric Units

National Curriculum Objectives:

Mathematics Year 5: (5M5) Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)

About this resource:

This resource has been designed for pupils who understand the concepts within this step. It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

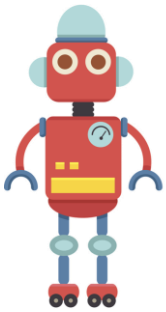
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More Year 5 Converting Units resources.

Did you like this resource? Don't forget to review it on our website.

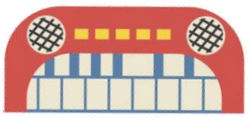
Metric Units

1. Amanda is displaying toys in her shop on a shelf display which is 2.48m wide. How could she arrange any of the toys below to fill the shelf, using only one of each toy? There needs to be a minimum gap of 20mm at both ends of the shelf and between each toy. Investigate different combinations of toys that can be displayed on the shelf.

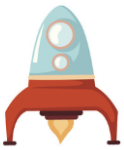


45cm

38cm

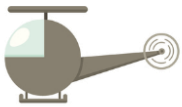


$\frac{1}{2}$m



300mm

50mm



350mm

45mm

34mm

200mm

120cm

1m 3cm

12cm

80mm

5cm

30cm

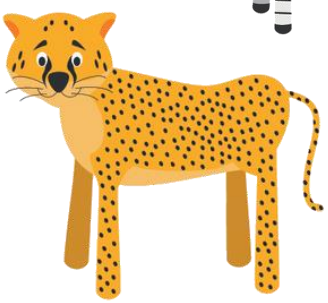
DP

2. A snail, zebra and cheetah all travel at different speeds for different durations of time.

The zebra travels at 64km per hour for 2 $\frac{3}{4}$ hours.

The snail travels at 50m per hour for 10 $\frac{3}{6}$ hours.

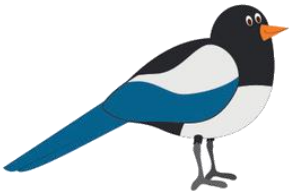
The cheetah travels at 1,200 metres per hour for 0.25 hours.



Explore what their combined distance is in km?

A bird flies at 148.9km per hour for 2$\frac{1}{2}$ hours.

Will it travel further than the combined distance for the other 3 animals?



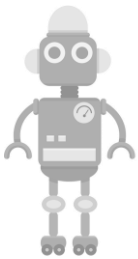
What is the combined distance for all 4 animals?

DP

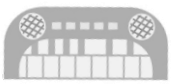
Metric Units

1. Amanda is displaying toys in her shop on a shelf display which is 2.48m wide. How could she arrange any of the toys below to fill the shelf, using only one of each toy? There is a minimum gap of 20mm at both edges of the shelf and between each toy.

Investigate different combinations of toys that can be displayed on the shelf.
Various possible answers, for example: This combination measures exactly 2.48m, but other answers may not be exact but will be no less than 2.4m.


45cm


38cm


$\frac{1}{2}$m


300mm


50mm


350mm


45mm


34mm


200mm


120cm


1m 3cm


12cm


80mm


5cm


30cm

DP

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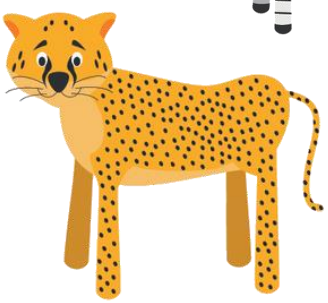
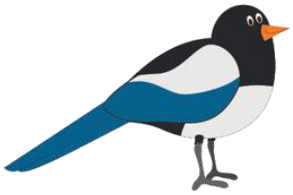


Explore what their combined distance is in km?
Zebra = 176km; Snail = 525m; Cheetah = 300m
Total distance covered = 176.825km

A bird flies at 148.9km per hour for 2$\frac{1}{2}$ hours.

Will it travel further than the combined distance for the other 3 animals?
Yes, it will travel 372.25km



What is the combined distance for all 4 animals?
549.075km

DP