Discussion Problems
Step 2: Millimetres and Millilitres

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.

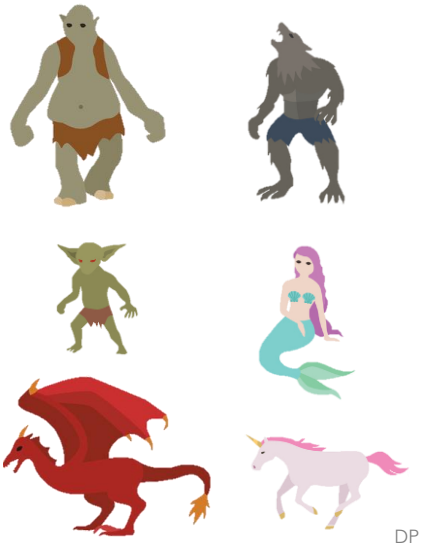
Did you like this resource? Don't forget to review it on our website.

Millimetres and Millilitres

1. Albus the wizard is creating potions. His cauldron can hold 11.95L of liquid. He needs to fill his cauldron to at least 11.1L and use at least 5 different ingredients.

What combinations of ingredients could he use? You can use each ingredient more than once.

Ingredients	Volume
Ogre blood	0.81L
Goblin vomit	$1\frac{3}{4}$ L
Dragon oil	3,760ml
Unicorn milk	1,390ml
Mermaid tears	0.15L
Lycan mucus	$2\frac{3}{5}$ L



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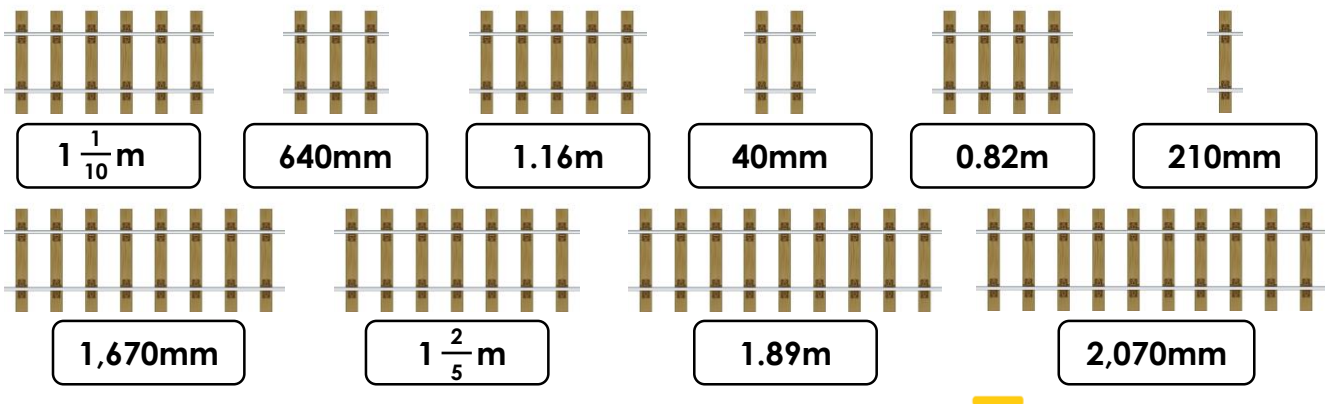
2. Lola is trying to build a model train track using different parts. Her track needs to measure between 8.9m and 9.71m.

Using the different pieces below, what combinations of tracks could she use? She can only use each part twice and must use at least 5 different parts of different lengths.

What is the closest she can get to 9.71m without going over the required length?



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What combinations of ingredients could he use? You can use each ingredient more than once.

Various answers possible including:

1x Dragon oil, 1x Unicorn milk, 1x Lycan mucus, 1x Goblin vomit and 2x Ogre blood.

3,760ml + 1,390ml = 5,150ml; 5,150ml = 5.15L; $2\frac{3}{5}$ L = 2.6L; $1\frac{3}{4}$ L = 1,75L; 0.81L x 2 = 1.62L; 5.15L + 2.6L + 1.75L + 1.62L = 11.12L.

Ingredients	Volume
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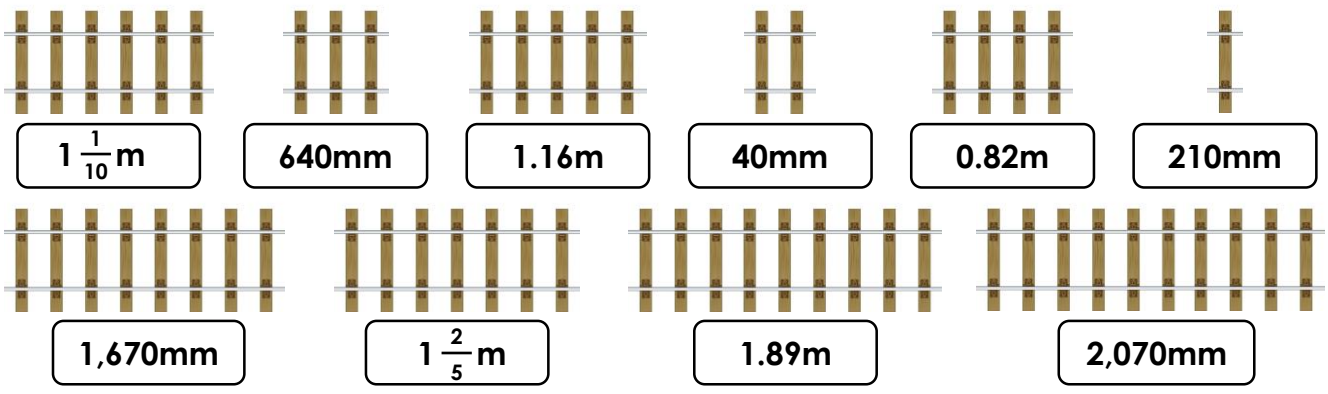
Various possible answers, for example:

2,070mm x 2 = 4,140mm; 1,670mm x 2 = 3,340mm; 640mm x 2 = 1,280mm; 4,140mm + 3,340mm + 1,280mm + 210mm + 40mm = 9,010mm; 9,010mm = 9.01m.



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