

# 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.

**Various answers possible including:**

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

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



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



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

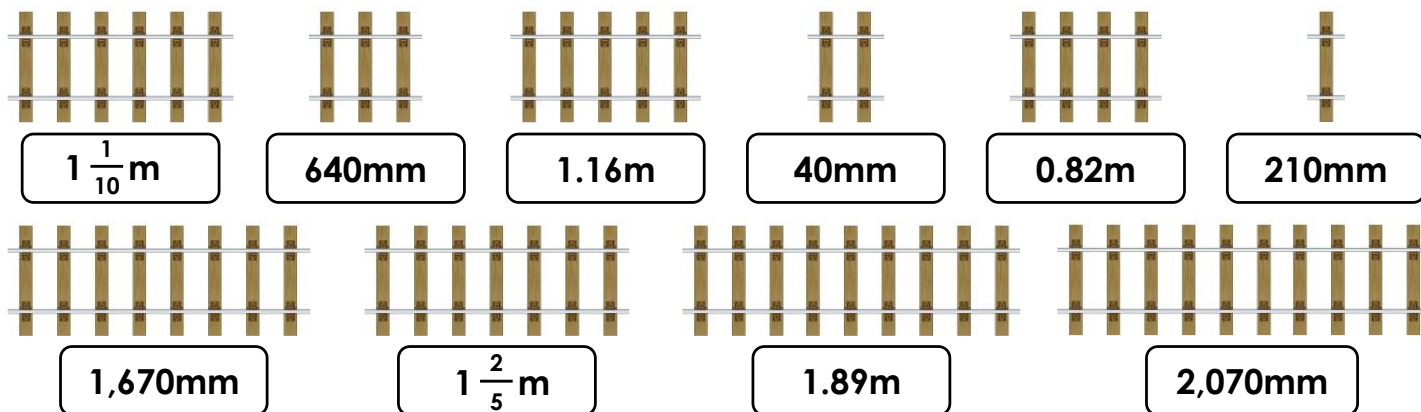
Using the different pieces below, what combinations of tracks could she use? She can only use each part twice and must use at least 5 different parts of different lengths.

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

**Various possible answers, for example:**

**$2,070\text{mm} \times 2 = 4,140\text{mm}$ ;  $1,670\text{mm} \times 2 = 3,340\text{mm}$ ;  $640\text{mm} \times 2 = 1,280\text{mm}$ ;**

**$4,140\text{mm} + 3,340\text{mm} + 1,280\text{mm} + 210\text{mm} + 40\text{mm} = 9,010\text{mm}$ ;  $9,010\text{mm} = 9.01\text{m}$ .**



*Not drawn to scale.*

