

Reasoning and Problem Solving – Length and Perimeter

Consolidation – Year 3

About This Resource

This resource is aimed at Year 3 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in Spring Block 4 Length and Perimeter.

The questions are based on a selection of the same ‘small steps’ that are addressed in the block, but are presented in a different way so children can work through the pack independently and demonstrate their understanding and skills.

Small Steps

Measure length

Equivalent lengths - m and cm

Equivalent lengths - mm and cm

Compare lengths

Add lengths

Subtract lengths

Measure perimeter

Calculate perimeter

National Curriculum Objectives

Mathematics Year 3: (3M1a) [Compare lengths \(m/cm/mm\)](#)

Mathematics Year 3: (3M2a) [Measure lengths \(m/cm/mm\)](#)

Mathematics Year 3: (3M9b) [Add and subtract lengths \(m/cm/mm\)](#)

Mathematics Year 3: (3M7) [Measure the perimeter of simple 2-D shapes](#)

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Vulf is a beast hunter. When a town or village has a problem with a monster, they find him. He always sorts the monsters out.

Today he is bored. It seems that no monsters feel like terrorising villagers at the moment. That's a shame for Vulf. He wanted something to do, so he is visiting his friend, Wizard Sigrunn.

“Don't touch anything!” she tells him. “If you *must* do something, use the new measuring sticks I've made to measure your hunting gear. Just don't break them!”

Sigrunn has made three measuring sticks. One of them measures metres, one measures centimetres and the last one measures millimetres.

1. Which stick should Vulf use to measure each of the 6 things below? Vulf is 2m tall.



Ring of light	Spear	Shrinking potion	Sword	Growing potion	Eric the snail

2. Estimate the height of each of the 6 things. Use the units you chose for question 1.

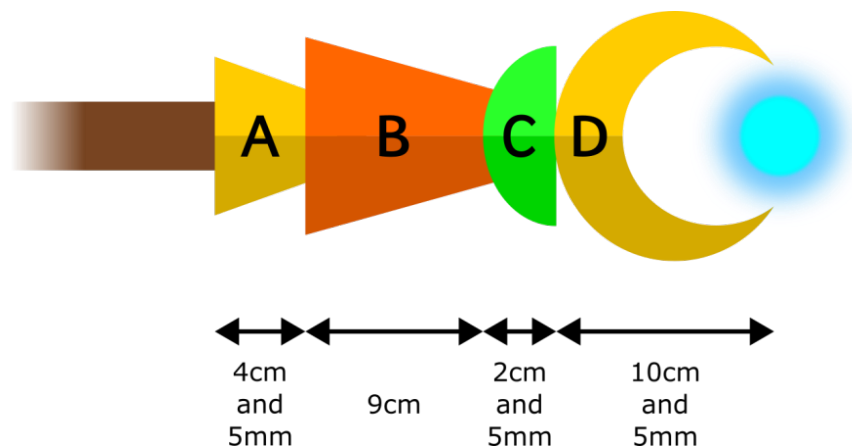
Ring of light	Spear	Shrinking potion	Sword	Growing potion	Eric the snail

Even after the measuring, Vulf is still bored. He decides to practise his sword fighting. He lunges, swings, cuts and... breaks the millimetre and centimetre measuring sticks by hitting them together.

“I *told* you not to break them!” shouts Sigrunn when she sees what Vulf has done. “I needed those to find out how long the magic parts of my new staff are to be! I’ve only got the measurements in centimetres! I want them in millimetres!”

3. Help Sigrunn by finding out how long each part of the staff is in millimetres.

How long will the magic part of her staff be altogether? Give the total in millimetres, and in centimetres and millimetres.



Part A (mm)	Part B (mm)	Part C (mm)	Part D (mm)	Total (mm)	Total (cm and mm)

Sigrunn has made other magic wands and staffs. She needs to send them to The Assembly of Wizards to be checked and sold.

“I need to put them into these cases,” says Sigrunn, “so could you work out how to fit them in perfectly? I don’t want any gaps!”

4. Work out which wands and staffs will go into each case to fit perfectly end-to-end.

Case 1

2m and 20cm

Case 2

5m and 79cm

Case 3

$7\frac{1}{2}$ m

Wand 1	Wand 2	Wand 3	Wand 4	Staff 1	Staff 2	Staff 3	Staff 4
107cm	1m and 13cm	$1\frac{1}{4}$ m	1m and 4cm	308cm	2m and 61cm	2m and 14cm	3m and 17cm









Vulf and Sigrunn load the cases onto a cart, ready to take them to The Assembly of Wizards. Suddenly a little boy bursts out of the forest!

“Vulf! Vulf! Come quickly! A monster has been creeping around our village! We have found its footprints by the river!”

Vulf, Sigrunn and the boy rush to the river. The footprints have been washed away!

“They were here, I promise!” says the boy. “If I remember correctly, they were somewhere between 45cm and 50mm long and 1m and 22cm long. We tried to measure them but I can’t remember exactly how long they were.”

5. Using Vulf's hunting chart, work out which monsters the footprints could belong to.

			
<u>The Blue Crested Grobber</u> Foot length: 303mm	<u>The Snot-gargling Manitog</u> Foot length: $85\frac{1}{2}$ cm	<u>The Great and Terrible Flunge</u> Foot length: 1218mm	<u>The Five-toed Farnwalla</u> Foot length: 1m and 9mm
			
<u>The Club-pawed Chock-Chock</u> Foot length: $1\frac{1}{2}$ m	<u>The Slice-clawed Slibby</u> Foot length: 6cm and 6mm	<u>The Sobbling Podgefoot</u> Foot length: 56cm and 1mm	<u>The Hackchaddler</u> Foot length: 3m and 35mm

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“Now we know which monsters it might be, I’ve put their heights in order from shortest to tallest. That will help if someone’s seen it.”

6. Has Vulf got his order right? Explain any mistakes.

<u>Shortest</u>	3560mm	3m and 52cm	6m and 125mm	606cm	<u>Tallest</u>
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