

# Reasoning and Problem Solving

## Step 1: Measure Length (cm)

### National Curriculum Objectives:

Mathematics Year 2: (2M2) [Choose and use appropriate standard units to estimate and measure length/height in any direction \(m/cm\); mass \(kg/g\); temperature \( \$^{\circ}\$  C\); capacity \(litres/ml\) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Explain why an object is the odd one out. Measure objects using ruler; always starting at 0; all units shown on the ruler.

**Expected** Explain why an object is the odd one out. Measure objects using ruler; not always starting at 0; all units shown on the ruler.

**Greater Depth** Explain why an object is the odd one out. Measure objects using ruler; not aligned with 0; some increments missing.

Questions 2, 5 and 8 (Reasoning)

**Developing** Explain which child is correct when measuring an object. Measure objects using ruler; always starting at 0; all units shown on the ruler.

**Expected** Explain which child is correct when measuring an object. Measure objects using ruler; not always starting at 0; all units shown on the ruler.

**Greater Depth** Explain which child is correct when measuring an object. Measure objects using ruler; not aligned with 0; some increments missing.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Find two possible measurements between two lengths. Measurements are smaller than 10cm.

**Expected** Find a range of possibilities between two lengths. Measurements are up to 15cm.

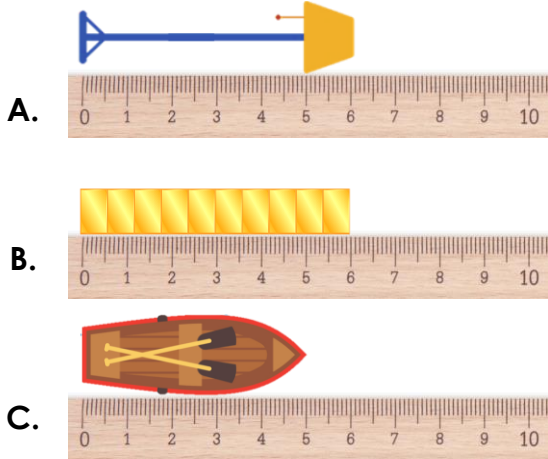
**Greater Depth** Find a range of possibilities between two lengths. Using a clue to limit possibilities.

More [Year 2 Length and Height](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

## Measure Length (cm)

1a. Which is the odd one out?



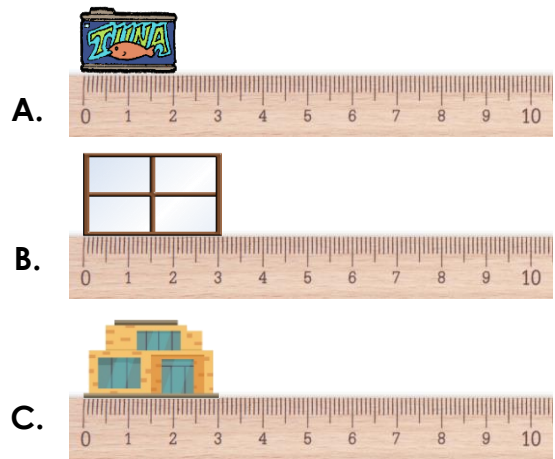
Explain your answer.



R

## Measure Length (cm)

1b. Which is the odd one out?



Explain your answer.



R

2a. Nadia and Alex are measuring the length of a toy flag pole.



Nadia says,



The pole is 8cm long.

Alex says,



The pole is 7cm long.

Who is correct? Explain your answer.



R

2b. Martin and Harriet are measuring the length of a shelf in a dolls house.



Martin says,



This shelf is 7cm long.

Harriet says,



This shelf is 9cm long.

Who is correct? Explain your answer.



R

3a. David's toy bus measures between 4cm and 9cm.

Find two possible measurements for his toy bus.



PS

3b. Josie's doll measures between 6cm and 10cm.

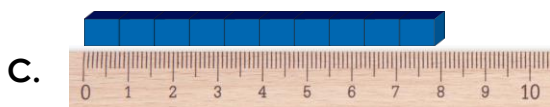
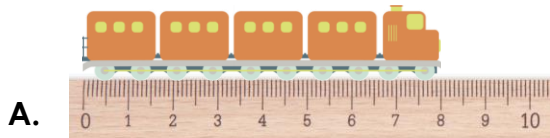
Find two possible measurements for her doll.



PS

## Measure Length (cm)

4a. Which is the odd one out?



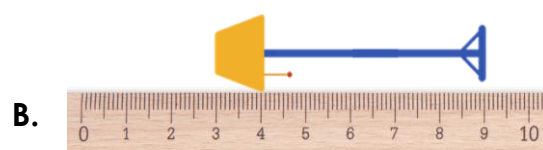
Explain your answer.



R

## Measure Length (cm)

4b. Which is the odd one out?



Explain your answer.



R

5a. Zoe and Mike are measuring the length of a pencil.



Zoe says,



This pencil is 8cm long.

Mike says,

This pencil is 6cm long.



Who is correct? Explain your answer.



R

5b. Niall and Sarah are measuring the length of a shape.



Niall says,



The shape is 7cm long.

Sarah says,

This shape is 9cm long.



Who is correct? Explain your answer.



R

6a. Abdul's toy bottle measures between 10cm and 15cm.

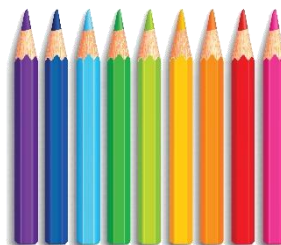
What are the possible measurements his bottle of drink could be?



PS

6b. Pippa's colouring pencils measure between 9cm and 14cm.

What are the possible measurements her colouring pencils could be?



PS

## Measure Length (cm)

7a. Which is the odd one out?



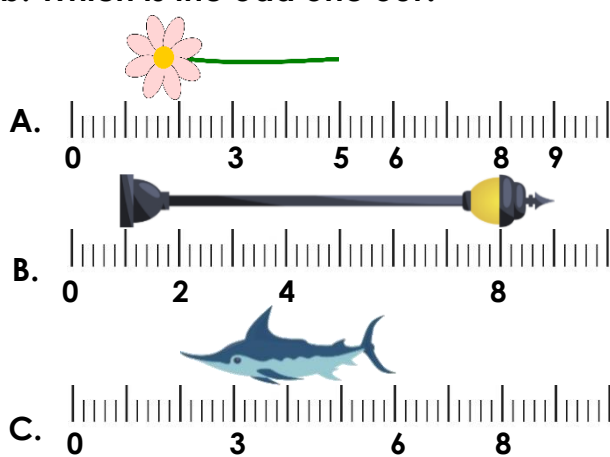
Explain your answer.



R

## Measure Length (cm)

7b. Which is the odd one out?

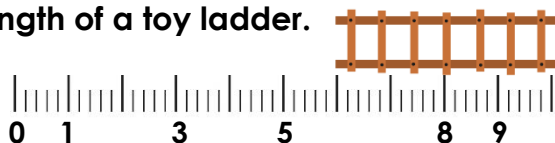


Explain your answer.



R

8a. Ciara and Tom are measuring the length of a toy ladder.



Ciara says,



The ladder is 4cm long.

Tom says,



The ladder is 6cm long.

Who is correct? Explain your answer.



R

8a. William and Isabel are measuring the length of a toy spear.



William says,



The spear is 9cm long.

Isabel says,



The spear is 7cm long.

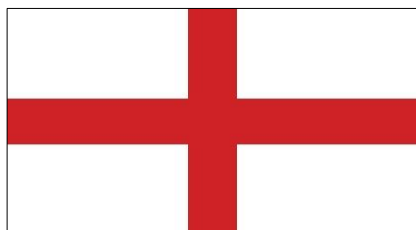
Who is correct? Explain your answer.



R

9a. Gemma's flag measures between 10cm and 20cm.

What are the possible measurements her flag could be if her answer is an even number?



PS

9b. Frank's teddy measures between 5cm and 15cm.

What are the possible measurements his teddy could be if his answer is an odd number?



PS

## Reasoning and Problem Solving

### Measure Length (cm)

#### Developing

- 1a. C. It is 5cm long whereas the others are 6cm long.
- 2a. Nadia. She has accurately read the measurement shown by the ruler.
- 3a. Various possible answers, for example: 5cm, 6cm, 7cm or 8cm.

#### Expected

- 4a. B. It is 5cm long whereas the others are 8cm long.
- 5a. Mike. He has taken into account that the object is measured from 2cm and not 0cm.
- 6a. Various possible answers, for example: 11cm, 12cm, 13cm and 14cm.

#### Greater Depth

- 7a. C. It is 5cm long, whereas the others are 4cm long.
- 8a. Ciara. She has taken into account that the object is measured from 6cm and not 0cm.
- 9a. Various possible answers, for example: 12cm, 14cm, 16cm and 18cm.

## Reasoning and Problem Solving

### Measure Length (cm)

#### Developing

- 1b. A. It is 2cm long whereas the others are 3cm long.
- 2b. Martin. He has accurately read the measurement shown by the ruler.
- 3b. Various possible answers, for example: 7cm, 8cm or 9cm.

#### Expected

- 4b. A. It is 7cm long, whereas the others are 6cm long.
- 5b. Niall. He has taken into account that the object is measured from 3cm and not 0cm.
- 6b. Various possible answers, for example: 10cm, 11cm, 12cm and 13cm.

#### Greater Depth

- 7b. B. It is 8cm long, whereas the others are 4cm long.
- 8b. Isabel. She has taken into account that the object is measured from 2cm and not 0cm.
- 9b. Various possible answers, for example: 7cm, 9cm, 11cm and 13cm.