

Reasoning and Problem Solving

Length and Height Consolidation – Year 1

About This Resource

This resource is aimed at Year 1 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in Spring Block 3 – Length and Height.

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

Compare lengths and heights

Measure length (1)

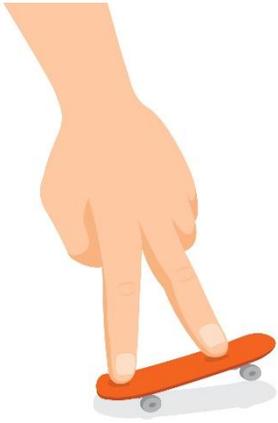
Measure length (2)

National Curriculum Objectives

Mathematics Year 1: (1M2) [Measure and begin to record lengths and heights](#)

Mathematics Year 1: (1M1) [Compare, describe and solve practical problems for lengths and heights \[for example, long/short, longer/shorter, tall/short, double/half\]](#)

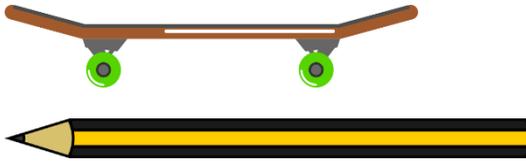
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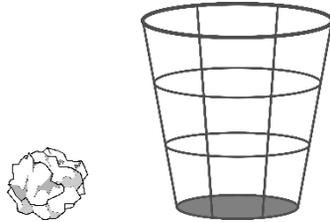
Jaali and his friends are playing with finger skateboards. They want to build a finger skateboard park. They are planning it.

1. Write a sentence to describe each pair of objects they are using. Use some of these words in your answers: long, longer, short, shorter, tall, taller, equal.

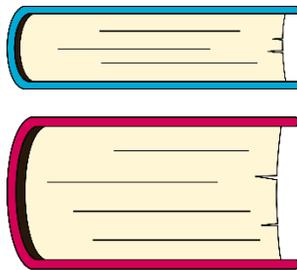
A finger skateboard and a pencil



A bin and a ball of paper



A blue book and a red book



Jaali and his friends build some ramps and some rails. They want to put them in order. They want to know which ones are biggest and which ones are smallest. It will help them build the finger skateboard park.

2. Match the words to the right ramps or rails in each set.

Longest Shortest Long Shorter Short					
Shortest Tallest Short Taller Tall					

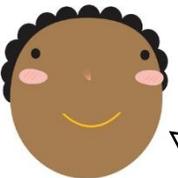
Jaali's friend Akil says that they should measure the things they are using. "It will help us to make a better skateboard park," he says.

3. What should the friends use to measure each item? Explain your choices.



Akil

We need to measure our finger skateboard. We can use my arm or my finger to measure it.



Jaali

We need to measure how long our little rails are. We can use the table leg or pencils.



Naomi

We need to measure how tall our coffee table is. We can use our hands or marbles on top of each other.

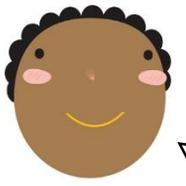
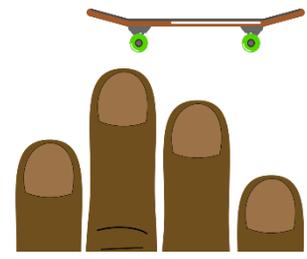
The three friends measure the objects.

4. Check the friends' measurements. Explain any mistakes.



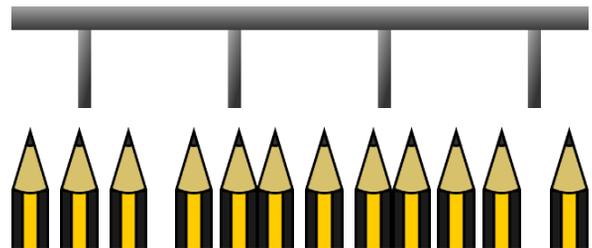
Akil

The finger board is 4 fingers long.



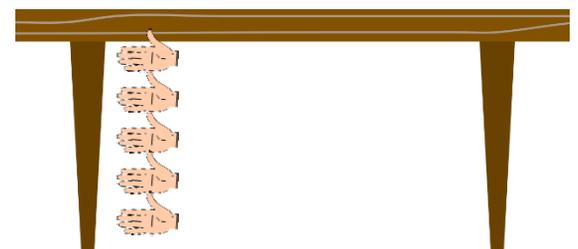
Jaali

The rail is 12 pencils long.



Naomi

The coffee table is 5 hands tall.



Empty rectangular box for student response.

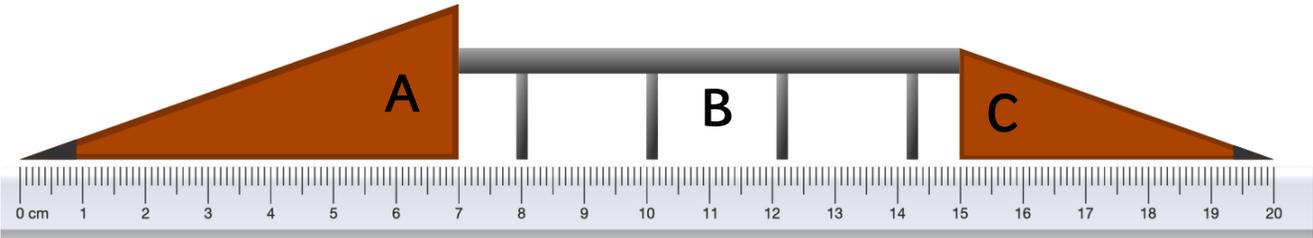
“Why don’t we use the same thing to measure everything?” says Akil. “If a rail is 15 pencils long, and the table is 15 hands long, they are the same length!”

5. What is wrong with what Akil has said? Is there any time he could be right?

Empty rectangular box for student response.

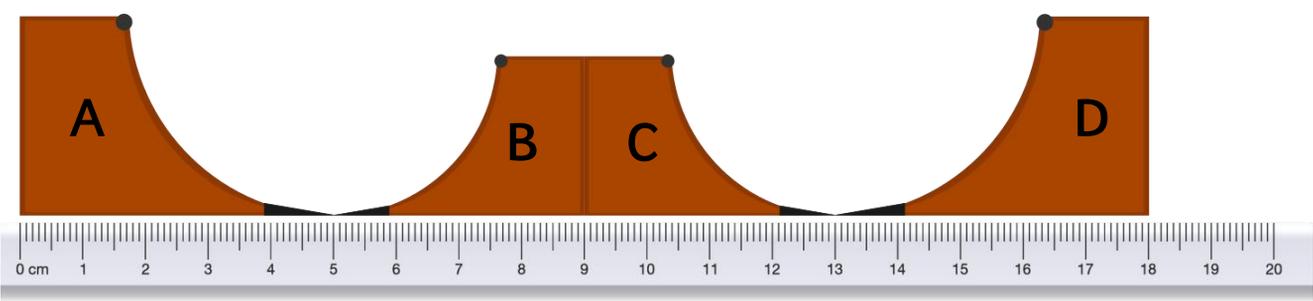
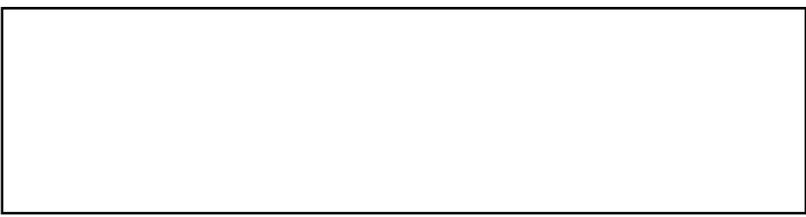
The children want to start putting together their finger skateboard park. They have different parts of the table to build on. They want to know what they can fit in their parts of the table. They use a ruler to help work it out.

6. Which ramps and rails can each child fit on their part of the table?



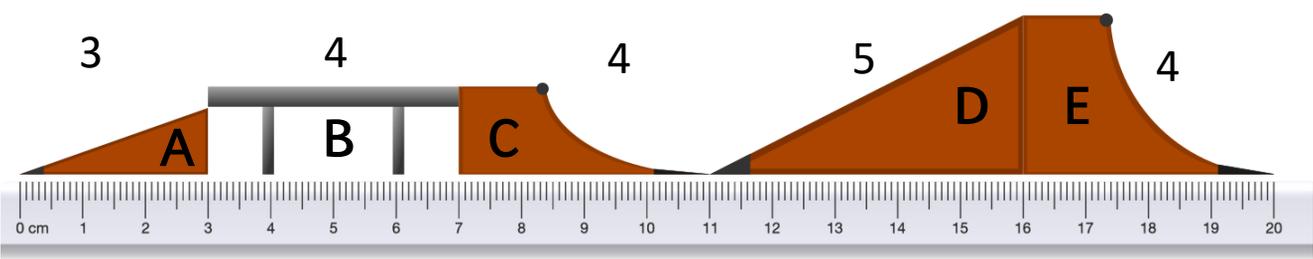
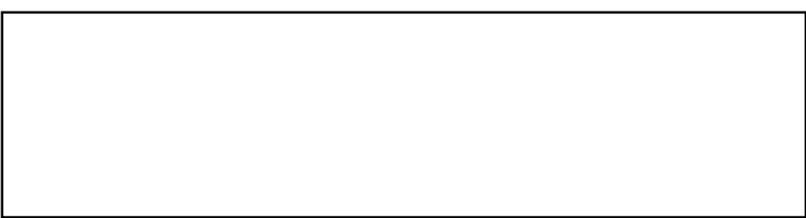
Jaali

My part of the table is 15cm long.



Naomi

My part of the table is 14cm long.



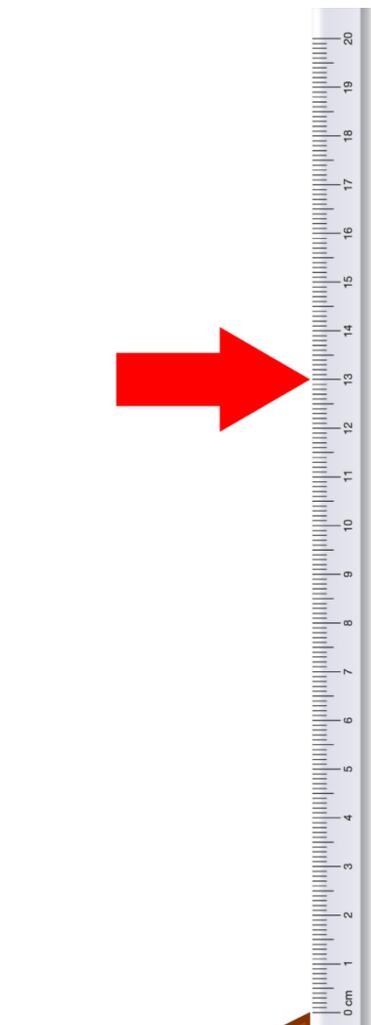
Akil

My part of the table is 15cm long.



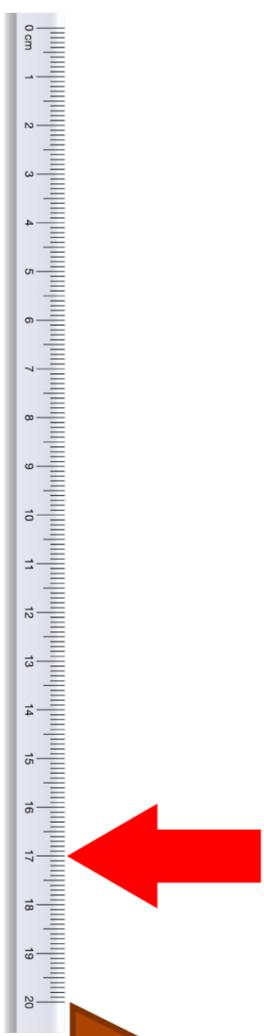
Now the children can play with their skateboard park! They see who can jump their finger skateboard the highest. They measure from the top of the ramp.

7. Is each child right? If something is wrong, what is it?



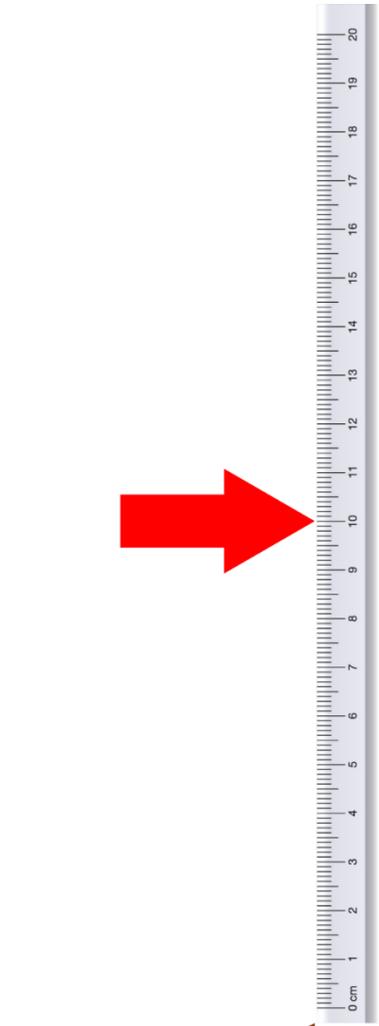
Jaali

“My jump was 13cm high.”



Akil

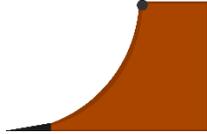
“My jump was 17cm high.”



Naomi

“My jump was 10cm high.”

1. Various possible answers. Answers must use at least one word from the list and accurately describe the objects in the pairs.

Longest Shortest Long Shorter Short	Long	Longest	Shortest	Short	Shorter
					
Shortest Tallest Short Taller Tall	Short	Tall	Shortest	Tallest	Taller
					

3. Akil should use his finger to measure the finger skateboard because his arm will be too long for such a small object.

Jaali should use pencils to measure the little rails because the table leg will be too long for such small objects.

Naomi should use her hands to measure the height of the coffee table because it would take too many marbles to measure something so large.

4. Akil has not lined the finger skateboard up with his first finger. The finger skateboard is 3 fingers long.

Jaali has not lined the pencils up edge to edge, so there are gaps. The rail is 15 pencils long.

Naomi has not lined up the hands with the top or bottom of the table. The table is 6 hands tall.

5. Pencils and hands are not the same length, so just because things are the same number of hands/pencils long, they will not be the same length. The only time he would be right is if the pencil and the hand used for measuring were exactly the same length.

6. Multiple options, easiest option is given first:

Jaali: Ramp A, Rail B; Ramp A, Ramp C; or Rail B or Ramp C.

Naomi: Ramp A, Ramp B, Ramp C; Ramp B, Ramp C, Ramp D.

Akil: Ramp A, Rail B, Ramp C; Ramp A, Rail B, Ramp C, Ramp E; Rail B, Ramp C, Ramp D; Rail B, Ramp D, Ramp E; Rail B, Ramp C, Ramp E.

7. Jaali is correct.

Akil has started measuring at 20. His ruler is upside down. He has jumped 3cm.

Naomi has measured from the end of the ruler, not from 0.