Year 4 Maths No Problem workbook, Chapter 10, lessons 7 - 11, week beginning 18/05/20

Lesson 7: Measuring Height

Textbook pages: 107 – 111

Lesson Objective

To be able to measure height in metres using decimals.

Lesson Approach

To begin this lesson, show pupils the In Focus task and ask them to study the measuring tape. How many intervals are there between the numbered markings? What does each interval represent? Then ask them to look at the measurements given by the four children. Can they explain how each child arrives at their conclusion? Who is correct?

Ask the class questions, such as: What do you think? Why? How can the answer be so different? What do you think has happened? Go through Let's Learn 1 and 2 to determine the scale used in the measuring tape. Pupils will learn that 10 cm = 0.1 m and 1 cm = 0.01 m. Draw attention to Let's Learn 2 and ask pupils if they know how many centimetres are in 1 m. How is this different to the measures we have been using so far? How do we write centimetres in metres? How can we write 1 cm in metres? How can we write this as a fraction? Work through the mistakes each child has made as shown in Let's Learn and point out the mistakes made.

During Activity Time, pupils are measuring their heights in groups. Ask each group for their tallest/shortest measurements and discuss any data that seems incorrect.

During Guided Practice, pupils are reading and writing heights in metres.

Lesson 8: Measuring Length

Textbook pages: 112 – 115

Lesson Objective

To be able to measure length in centimetres.

Lesson Approach

To begin this lesson, show pupils the In Focus task. What does perimeter mean? How will we know if the perimeter is more than 20 cm? How can we measure the perimeter? What units should we use to measure this perimeter? Ask pupils to discuss the problem before taking some feedback.

Display a ruler on the interactive whiteboard or provide rulers for the class to look at. Prompt them with questions, such as: What do you notice about the intervals on the scale? What does each interval represent? Can we write it in centimetres as a decimal? How do we use a ruler to measure? Show the class how to measure and write the length of each side of the triangle. Do we need to measure all of the sides to answer the problem? Why?

During Guided Practice, pupils are measuring lengths in centimetres and calculating the perimeter of 2-D shapes. When pupils have completed this, bring the class together to discuss examples 1(b) and (c). Did you have to measure all of the sides to find this perimeter? Why? Can you think of any other shapes like this?

Lesson 9: Converting Units of Length

Textbook pages: 116 – 119

Lesson Objective

To be able to convert between centimetres and metres.

Lesson Approach

To begin this lesson, show pupils the In Focus task. Then show them a video clip of athletes doing long jump and discuss how judges know who has won each medal. What do they measure? How do they measure the length? What units do they use? Ask pupils to discuss the table in the problem. What can we do to make solving the problem easier? What key fact would be useful to remember? (100 cm = 1 m) What is the problem asking us to calculate?

Pupils will learn three conversions: 1 m = 100 cm, 0.1 m = 10 cm and 0.01 m = 1 cm. Work through Let's Learn 1 and 2 with the class. Prompt pupils with questions, such as: How many 10 cm are equivalent to 1 m? What can we say about 1 block of 10 cm? Repeat the same process for Let's Learn 3 and 4, drawing attention to hundredths. How many hundredths are equal to 10 cm? Show pupils how to record the values in metres and centimetres. Spend some time discussing how each value in the decimal measurement is partitioned, converted and recombined. Why is 70 cm not equivalent to 0.07 m? Ask pupils to discuss the question with their partner before sharing their views.

During Guided Practice, pupils are converting metres to centimetres.

Lesson 10: Converting Units of Length

Textbook pages: 120 – 121

Lesson Objective

To be able to convert between metres and kilometres.

Lesson Approach

To begin this lesson, show pupils the In Focus task and ask them what is the difference in the units of measure compared to the previous lesson. Allow time for discussion before asking pupils for feedback. What should we do to compare the two distances?

Pupils will learn three conversions: 1 km = 1000 m, 0.1 km = 100 m and 0.01 km = 10 m. How many metres are in 1 km? Show this using the bar model in Let's Learn 2. What is equivalent of 200 m in kilometres? Why? Show the class how to convert the distances using

the bar model. If 200 m = 0.2 km, what is 100 m in kilometres? How about 10m? Can we write this in kilometres as a decimal? Who was ahead in the race? How do you know?

During Guided Practice, pupils are converting kilometres in decimals to metres.

Lesson 11: Measuring Perimeter in Different Units

Textbook pages: 122 – 124

Lesson Objective

To be able to measure perimeter in centimetres and millimetres and convert between the two units.

Lesson Approach

To begin this lesson, show pupils the In Focus task. Provide them with rulers showing centimetres and millimetres and allow them time to discuss the perimeters. Demonstrate, or invite a volunteer to show the class, how each child calculated the perimeter.

Prompt pupils with questions, such as: What shape is it? What do you know about rectangles? How can perimeter be calculated by measuring 2 sides? Which 2 sides should we measure? How can the perimeter be both 16 and 160? Using a ruler, model how to measure the rectangle in millimetres. Show pupils how perimeter can be calculated using 4 sides of the rectangle, and 2 sides of the rectangle.

Pupils will learn that 1 cm = 10 mm and 10 cm = 100 mm. Spend time discussing the equivalence between centimetres and millimetres, ensuring pupils justify their answers.

During Guided Practice, pupils are measuring lengths in centimetres and millimetres, and finding the perimeter of rectangles.