Year 4 Maths No Problem workbook, Chapter 11, lessons 3 – 6, mind workouts and Review 11, pages 107 - 120, week beginning 08/06/20

Lesson 3: Measuring Area

Textbook pages: 138 – 142

Lesson Objective

To be able to find the area of rectilinear shapes by counting squares.

Lesson Approach

To begin this lesson, show pupils the In Focus task and prompt them by asking them questions, such as: What is perimeter? What is the difference between area and perimeter? Who do you think is correct, Ruby or Elliott, and why? Ask them to talk to their partners before sharing their ideas. How can we test the statements?

Give each pupil a square grid and show them what 1 unit is. Tell them that we call this 1 square unit. Ask pupils to draw two different figures with the same area of 5 square units and perimeter. Is this possible? Give them time to discuss and experiment with the square grid paper. Then compare the figures they have drawn. Are the areas the same? Are the perimeters the same? Model how to count the area and perimeter using square units.

Next, ask pupils to draw two different figures with the same area of 5 square units but different perimeters. Is this possible? Ask them to exchange what they have drawn with their partners to check if the areas are the same and the perimeters are different. Then ask them to draw two different figures with different areas but the same perimeter. Is this possible?

Gather pupils together and guide them to see that figures with the same area can have different perimeters and figures with the same perimeter can have different areas.

During Guided Practice, pupils are forming figures and finding the areas of figures.

Lesson 4: Measuring Area

Textbook pages: 143 – 145

Lesson Objective

To be able to find the area of rectilinear shapes by counting squares.

Lesson Approach

To begin this lesson, show pupils the In Focus task. What is the same and what is different between this problem and what we have already learnt? Provide pupils with the same pieces of squares and triangles as shown. Ask them to tell you the names of the shapes. Then ask them if they can form a square using the triangles. How many triangles do you need to make a square?

Ask pupils to use the 5 pieces to create different figures. Display the figures they have made and arrange the same ones together. What is the area of each figure in square units? How can we count the triangles? Can we count 2 triangles as 1 square unit? Why? Guide pupils to conclude that the area of all the figures are the same as they all cover the same amount of surface area. Ask them if they can tell which figure has the longest perimeter.

During Guide Practice, pupils are finding the area of figures by counting squares.

Lesson 5: Measuring Area

Textbook pages: 146 – 149

Lesson Objective

To be able to find the area of rectilinear shapes by counting squares.

Lesson Approach

To begin this lesson, show pupils the In Focus task and ask them how we can find the areas of the different sized rectangles besides counting the number of squares one by one. Allow them some time to discuss this with their partners before sharing their suggestions. What do we know about the rectangles? (Some pupils may suggest drawing in the square grid and counting squares, while others may already suggest multiplying. Use both examples to test and check calculations.)

Show Let's Learn 1 and ask pupils to look at Rectanlge A. How many square units are in 1 row? There are 2 rows with the same number of square units. Can we do a calculation to find the total number of square units? What would that be? Guide pupils to see that there are 2 groups of 3, so we can use 2 × 3 to find the area of the rectangle.

Ask pupils to try using multiplication to find the area for Rectangle B. Prompt them by asking: How many square units are there in each row? How many rows are there altogether? Multiply to find the area of Rectangle B.

Ask pupils to draw the table shown in Let's Learn 4, find the areas for the rest of the rectangles and complete the table. Do you think there is a pattern shown by the areas? Can you explain the pattern? Can you use it to predict the area for the next two rectangles?

During Guided Practice, pupils are finding the areas of rectangles using two methods.

Lesson 6: Measuring Area

Textbook pages: 150 – 153

Lesson Objective

To be able to find the area of rectilinear shapes by counting squares.

Lesson Approach

To begin this lesson, show pupils the In Focus task and provide them with a printout of the task. Ask them how we can use what we already know about area to help solve the

problem. Ask them to start with the rectangle. It is arranged differently; is it possible to find the area? Suggest they draw the grid lines on the rectangle. What can they see? How many squares are there? How many triangles are there? What is the area of the rectangle in square units? Then ask them if there is another way of counting the squares. Show pupils Let's Learn 1 and work through counting the square units. Lead them to see that 2 triangles can be combined with 1 square to make a bigger triangle of 2 square units.

Next, ask pupils to find the area for the square. Can we use the same method? Give them some time to work on this. Hint that the triangles are different shapes and sizes. Then show them Let's Learn 2 and demonstrate how the triangles can be combined to form a rectangle of 3 square units.

During Guided Practice, pupils are finding the areas of squares and rectangles.

Lesson 7: Chapter Consolidation

Textbook pages: 154 – 156

Lesson Objective

To be able to use knowledge of area and perimeter to solve problems.

Lesson Approach

Mind Workout
Pupils solve problems involving the areas of squares and rectangles on page 154.

Solve the mind workout in the workbook, page 115.

Maths Journal
Pupils explain why the statements made by Sam and Charles on area and perimeter are incorrect on page 156.

Self Check
Pupils complete this as a chapter summary and discuss what to do with their teacher if any boxes are not ticked on page 157.

Review 11

Pages 116 – 120 to be completed independently.