AREA OF SQUARES AND RECTANGLES

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Subject

Mathematics

Prepared By

[Instructor Name]

Grade Level

3

Overview

This lesson plan covers teaching content for;

1. Finding the area of a square
2. Finding the area of a Rectangle
3. Calculating area of large spaces e.g. farmlands
4. Word problems on area

Objectives

Students should be able to;

1. Find the area of rectangles and squares
2. Find the area of shapes that can be divided
3. into rectangles and squares
4. Calculate the area of farmlands, towns and cities in square kilometers (km2)
5. Read and write area in square meters (m2)
6. Measure large areas like buildings in square meters (m2)
7. Solve problems relating to area.

Activity Starter/Instruction

1. Ask your pupils to work in pairs for this activity.
2. Give each pair 12 or more cardboard square centimeters.
3. Ask them to make as many different squares and rectangles as possible.
4. They should draw their shapes on centimeter square grid paper.
5. Discuss these shapes with your class. Ask questions like: “Are all the shapes the same size? Are some shapes bigger or smaller than other shapes? How do you know if a shape is bigger or smaller than another shape?”
6. Go on to ask them to build other shapes besides squares and rectangles
7. The area of a rectangle can be found by counting the square units.
8. How to multiply one-digit by one-digit numbers.
9. Vocabulary words: side length, area, square unit, unit, rectangle, square.

Teacher Guide

Day 1/ Lesson 1: 15 Mins

1. Assign partners.
2. Display the rectangle with a side length (row) of 5 units and a side length (column) of 4 units attached below.
3. Ask students to do a "Think-Pair-Share". Students think independently (30 seconds) about their answer, share with their partner, share with the class.
4. The teacher asks, "What is the area of this rectangle and how did you find the area. Ask a student to share what the partner said. Ask the whole class to show thumbs up, if they agree. (The correct answer is 20 square units. I counted each square.)
5. Next, the teacher should ask a student, "How many square units are across the rectangle (a row)?" The teacher guides the student by counting the number of squares across. Once the student says 5 the teacher should write 5 above the rectangle.
6. Next, the teacher should ask another student, "How many rows are there?" Once the student responds with 4, the

Materials Required

- Cardboards
- Square sheets
- Whiteboard
- Marker
- Measurement rule/ruler

Additional Resources

- https://www.homeschoolmath.net/teaching/g/area.p
- http://www.cpalms.org/Public/PreviewResourceLesso
- https://www.mathgoodies.com/lessons/vol1/area_re
- https://www.brighthubeducation.com/lesson-plans-g 5/128158-finding-area-of-rectangular-figures-using-m
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Additional Notes

Guided Practice

Day 2/ Lesson 2: 15 Mins

1. **The area** of a polygon is the number of square units inside the polygon.
2. To understand the difference between perimeter and area, think of perimeter as the length of fence needed to enclose the yard, whereas area is the space inside the yard.
3. Perimeter is 1-dimensional and is measured in linear units such as inches, feet or meters. Area is 2-dimensional: it has a length and a width.
4. Area is measured in square units such as square inches, square feet or square meters.
5. To find the area of a rectangle, multiply the length by the width. The formula is:
   A = L * W where A is the area, L is the length, W is the width, and * means multiply.
6. **A square** is a rectangle with 4 equal sides. To find the area of a square, multiply the length of one side by itself. The formula is:
   $A = s*s = s^2$ where A is the area, s is the length of a side, and · means multiply.
7. Let's look at some examples of finding the area of rectangles.
8. A rectangle has a length of 8 centimeters and a width of 3 centimeters. Find the area.
   Solution:
   A = L * W
   A = (8 cm) · (3 cm) = 24 cm2
9. The area of a square is 9 square centimeters. How long is one side?
   teacher writes 4 to the left of the rectangle.
7. Tell students that you have recorded the dimensions, the length of a side (write "dimension: length of a side" on the board). The teacher says, "4 rows of 5 squares, which is 4 groups of 5. Is there a way to figure out the total number of squares without counting each square?"
8. Possible Answers:
9. Repeated addition: 5 + 5 + 5 + 5 = 20 square units
10. Skip count the 4 rows of 5; 5, 10, 15, 20; the area is 20 square units
11. 4 groups of 5 squares; 4 x 5 = 20 square units

Guided Practice

Day 3/ Lesson 3: 15 Mins

1. Ask students to think of ways to find the area of a rectangle. Ask the students to take turns sharing his/her answer with his/her partner, letting the person whose first letter of the first name comes first in the alphabet to speak first.
2. Ask a student to share his/her answers with the class. Call on another student to contribute, if needed. Ask a student why these different ways would lead to the same answer. Elaborate and demonstrate on the board. A rectangle used earlier in the lesson could be revisited.
3. Ask, "If you know the area and one side length, could you find the other side length? Explain." (Yes. You multiply two side lengths

	Solution: square 9 cm2 = 3cm * 3cm Since 3 · 3 = 9, we get 3 cm · 3 cm = 9 cm^2. So s must equal 3 cm.` s = 3 cm.	together to get the area. If you know the area and one side length, you could divide the area by that side length to get the other side length.) Display a rectangle used previously or sketch an example to view, such as a rectangle with an area of 6 square units and a side length of 3 units, such that the other side length is 2 units and write ? x 3 = 6. 4. Discuss hectares (ha) with the pupils. 1000 m2 = 1 ha. 5. Give them the opportunity to ask you any questions that they might have
Assessment Activity	Assessment Activity 1. Put pupils into groups and assign each pupil a specific task. 2. After the group has measured, noted and calculated two areas, the pupils will swap tasks. 3. Each pupil should have the chance to measure, note down and calculate. Measurement must be done in meters. 4. Demonstrate an example on the board, for example, a door is 2.1 m high and 0.9 m wide. The area is 2.1 × 0.9 = 1.89 m2	Assessment Activity Write a multiplication with an unknown (an equation) for the area. Then solve. a. The area of a rectangle is 45 m., and its one side measures 9 m. How long is the other side (s)? b. The area of a rectangular field is 1,800 ft2, and its one side measures 60 ft. How long is the other side (s)?
Summary	Review and Closing 1. During the Teaching Phase and Guided Practice, the teacher will listen to students, ask questions for clarification or justification, and refine or elaborate their responses, as needed.	

	2. When students are working, the teacher will circulate the room, monitor the students' work, and ask questions to probe students' thinking and provide guidance to the learners. 3. Students will confer with their partners and may revise their answers.	