

November 9, 2022

**Find the Area of Figures with Missing Sides**

Unit Focus	Standard
<p>This unit is an extension of multiplication that has a focus on solving for the area. In the previous unit, students learned the concept of multiplication through various representations of equal groups. In this unit, students are learning multiplication and area at the same time by recognizing that two factors are multiplied to find a larger amount. Students are learning area through this process by learning the concept of length x width.</p>	<p>3.MD.C.7: Relate area to the operations of multiplication and addition.</p>
<b>Student Learning Target</b>	
<p>Learning Goal: I can find the area of figures with missing side lengths.</p>	
<p>Language Goal: I can do this by breaking the large figure into smaller figures and solving the area of each shape before adding the totals together.</p>	
<b>Vocabulary</b>	
<p>Multiplication, area, length, width</p>	
<b>Assessment Plan</b>	
<p>Formative Assessment:</p> <ul style="list-style-type: none"> <li>• Whole class discussion during warm-up.</li> <li>• Whole class discussion during Activity: The Mystery Side.</li> <li>• Whole class discussion during Activity: Practice with Mystery Sides.</li> <li>• Meet with table groups during turn-and-talk time.</li> <li>• Meet with students with specific learning needs during the turn-and-talk time.</li> </ul> <p>Summative Assessment: Students will take the Unit 2 assessment at a later date.</p>	
<b>Lesson Introduction</b>	
<p>The lesson will begin by asking the class the same question that they are asked at the beginning of each math lesson "What is area?" Students will raise their hands and wait to be called on. After one volunteer is called on, they will be expected to respond by stating that "Area is the inside of a shape and is solved by doing length x width." Students will then be asked to turn to their table group partners and describe the shape of their table groups. After</p>	

having a minute to discuss with peers, a volunteer will be called on to share what their table group determined.

The Lesson 14 presentation will then begin with a warm-up called Notice & Wonder. Students will look at an irregular shape and discuss with their table groups what they notice about the shape and what they wonder about the shape. After a minute of discussion, volunteers will be called on to share what they noticed and what questions they have about the shape.

### Lesson Core

Learning the math skill of finding the area of an irregular shape is challenging for most third graders, so this lesson will attempt to take a scaffolded approach to understand the concept and the steps to solving it.

1. The first slide of the practice will be Warm-Up: Notice & Wonder. On this slide, students will be asked to identify something that they notice and something that they wonder about an irregular shape shown to them. In this shape, all sides of the shape have measurements shown except for one. [The key skill on this slide is for students to recognize that sometimes, there may be missing side lengths, and observational and math skills are needed to find the missing side.]
2. The next slide of the practice shows students a different irregular figure with all sides measured except for one. It then prompts students to consider what the missing side could be by having students observe the other known sides. On this slide, I will first ask students to use their pencils to mark each corner of the irregular shape to point out the lengths of each side of the figure. This will later help students recognize what sides to pay attention to when solving the area of an irregular shape. [The key skill on this slide is to recognize the length of each side of an irregular shape.]
3. Students will continue to observe the irregular figure with the missing side. In their table groups, they will be asked to discuss how they could potentially use the known side lengths to help them discover what the unknown side is. At this time, I will be checking in with specific students to ensure they understand the directions and are prepared to participate in their groups. After a couple of minutes, I will call on volunteers to share their thoughts on how they could find the missing side. [The key skill for this step is for students to consider how the known sides could help them find the unknown side.]
4. Students will then be prompted to look at page 64 of their math workbooks where they will once again look at the same irregular figure. As a whole class, we will work on following a series of steps to find the area of the figure. As I am modeling the steps on the board, students are expected to follow along in their workbooks. [The key skill is to practice the necessary steps to finding the area of an irregular shape.]
5. Next, students will continue to look at page 64 of their math workbook to solve the remaining practice problem. Students will once again be

shown an irregular shape that has two missing sides. Each student will have the option to work with a partner or to work independently to try and find the missing sides and then the area of the irregular shape. At this time, I will let the class know where in the room I'll be sitting if anyone would like help with their math work and wants to join me. [The key skill is to try to find the missing side lengths of an irregular shape and then find the area of the figure.]

### Lesson Conclusion

The first part of the conclusion will be within Lesson 14 presentation on the slide Cool Down: Mystery Side Area. This slide will ask students to find the area of an irregular shape and to explain or show their reasoning. Students will be provided with a few minutes to discuss in their table groups how they would approach solving this problem and attempt to find the area themselves. Next, students will be asked to raise their hands and volunteer how to solve the equation. Multiple students will be called on to help solve the equation so that the class as a whole will solve the area of the irregular shape.

The second closing activity of this lesson will connect back to the introduction of the lesson. Student groups will be asked to find the area of the whole table groups. Each table group will be provided with rulers and yardsticks to measure the length and width of their irregularly shaped table group. They will then be asked to work together to find the area of the entire group. Afterward, each table group will share the area of their table group. We will then discuss why some answers may be different from other table groups (different number of desks in a group, some desks may be more spread out than others, desk shapes may be slightly different, etc.).

### UDL Strategies

- Discuss math concepts with a partner before calling on volunteers (Engagement).
- Allowing students the option to work with a partner or independently (Engagement).
- Highlighted numbers inside of student workbooks (Engagement).
- Measuring table groups inside of the classroom (Engagement).
- Area of irregular shapes anchor chart posted in the classroom (Representation).
- Area of irregular shapes reference page for student binders (Representation).
- Step-by-step modeling of how to solve the area of irregular shapes (Representation).

### Learning Environment

- Reminders on how to show positive body language (removing distractions, facing

### Resources and Materials

- Lesson 14 PowerPoint lesson
- Student workbooks
- Anchor chart

<p>the speaker, not having side conversations)</p> <ul style="list-style-type: none"> <li>• Reminders on how to politely work with others (give each person a chance to speak, listen to the speaker, and use kind language- even when disagreeing)</li> <li>• Reminders on using an appropriate volume level for class work time</li> </ul>	<ul style="list-style-type: none"> <li>• Printed step-by-step directions to solve the area</li> <li>• Highlighters</li> <li>• Multiplication chart</li> <li>• Rulers</li> <li>• Yardsticks</li> </ul>
<p><b>Barriers</b></p>	<p><b>Access Points/Supports</b></p>
<ul style="list-style-type: none"> <li>• Multiplication understanding</li> <li>• Multiplication fact fluency</li> <li>• Understanding the concept of area</li> <li>• Language barriers</li> <li>• Eyesight</li> <li>• Shape recognition</li> </ul>	<ul style="list-style-type: none"> <li>• Multiplication chart</li> <li>• Anchor chart to refer back to for steps in solving the area</li> <li>• Handout for students to keep in their binder for steps on solving the area</li> <li>• Enlarged math pages</li> <li>• Scribe</li> <li>• Hand-over-hand support</li> <li>• Examples</li> <li>• Modeling</li> <li>• Shapes are broken down ahead of time</li> <li>• Highlighted numbers to help find the area of each shape</li> </ul>
<p><b>Lesson Reflection</b></p>	
<p>The lesson plan was submitted before instruction.</p>	