

Lesson 14: Area Situations

Standards Alignments

Addressing 5.NF.B, 5.NF.B.4

Teacher-facing Learning Goals

- Solve problems involving the multiplication of a whole number by a fraction, including fractions greater than 1.

Student-facing Learning Goals

- Let's apply what we've learned about fraction multiplication.

Lesson Purpose

The purpose of this lesson is for students to apply their understanding of multiplying a whole number by a fraction to solve mathematical and real-world problems.

In previous lessons, students used a range of skills to solve problems involving the multiplication of a whole number by a fraction. They represented situations with diagrams and expressions, and they solved problems using a variety of strategies.

In this lesson, students use their conceptual understanding to build procedural fluency with multiplication of whole numbers by fractions. Students also apply these skills to solve problems in an Info Gap activity. Students use what they know about interpreting multiplication as area to ask questions of their peers about the missing information in the problems and explain their reasoning for needing that information.

As in the previous lessons, students will encounter problems with fractions greater than 1. Students are encouraged to rewrite fractions greater than 1 as whole numbers when possible. They are not required to rewrite fractions greater than 1 as mixed numbers.

Access for:

Students with Disabilities

- Representation (Activity 2)

Instructional Routines

MLR4 Information Gap (Activity 1), Number Talk (Warm-up)

Materials to Copy

- Info Gap: Area (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

If you were to teach this lesson over again, what activity would you redo? How would your proposed changes support student learning?

Cool-down (to be completed at the end of the lesson)

 5 min

Evaluate Expressions

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Addressing 5.NF.B.4

Student-facing Task Statement

Evaluate the expressions. Show your thinking.

1. $\frac{5}{3} \times 15$
2. $1\frac{3}{4} \times 8$
3. $\frac{10}{25} \times 10$

Student Responses

1. $\frac{75}{3}$ or 25 or equivalent. Sample response: I multiplied 15 and 5 and have that many $\frac{1}{3}$ s.
2. 14. Sample response: $8 \times 1 = 8$ and $\frac{3}{4} \times 8 = 6$ and $8 + 6 = 14$
3. $\frac{100}{25}$ or 4 or equivalent. Sample response: I multiplied 10 and 10 and have that many $\frac{1}{25}$ s.