Lesson 13: Divide Whole Numbers by Unit Fractions

Standards Alignments

Addressing	5.NF.B.7.b
Building Towards	5.NF.B.7.b

Teacher-facing Learning Goals

- Divide a whole number by a unit fraction in context, in a way that makes sense to them.

Student-facing Learning Goals

- Let's divide a whole number by a unit fraction.

Lesson Purpose

The purpose of this lesson is for students to solve division problems in a way that makes sense to them.

In this lesson students investigate dividing a whole number by a unit fraction using the context of strips of paper. In the warm-up, they describe what they notice and wonder about a picture of a quilt. During Activity 1, they consider cutting paper strips and using the strips to make a paper quilt. In Activity 2, as they did for division of a unit fraction by a whole number, students use a tape diagram which has the additional advantage of resembling the strips of paper. They observe how the quotient depends on the size of the dividend and represent the quotient with an equation. It may be helpful for students to actually make paper quilts. If possible, cut 2 foot length pieces of construction paper in various colors before the lesson and ask students to follow the directions in the problem prompts to make smaller pieces of each color. After the lesson, students can use the pieces to create a paper quilt.

Access for:

Students with Disabilities

- Representation (Activity 2)

Instructional Routines

MLR2 Collect and Display (Activity 1), Notice and Wonder (Warm-up)

Required Preparation

If students will be making My Way quilts, create 2 foot long pieces of construction paper in red, yellow, and green.

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

How did students think about division as they came into the lesson? In what ways did their understanding of division change upon completing the lesson?

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

5 min

A Different Strip of Paper

Standards Alignments

Addressing 5.NF.B.7.b

Student-facing Task Statement

Han has a strip of paper that is 3 feet long. He cuts it into pieces that are $\frac{1}{4}$ foot long. How many pieces are there? Explain or show your reasoning.

Student Responses

12 pieces. Each foot will have 4 pieces, so that is 12 pieces all together.