DOINGWHATWORKS

VIDEO
5:47 min

Full Details and Transcript

Making and Using Fraction Strips

Eliza Hart Spalding School of Math and Technology, Idaho
January 2011

Topic	**DEVELOPING EFFECTIVE FRACTIONS INSTRUCTION FOR K-8**
Practice	**FRACTIONS AS NUMBERS**
Highlights	» Third-grade teacher Cara Crist uses fraction strips to emphasize equivalent fractions working with halves, fourths, and eighths.
	» Students follow directions to fold and cut colored paper strips to make fraction strips and then work with the fraction strips to find equivalents (e.g., one whole equals four one-fourth pieces).
	» Students play a game called Cover Up designed to practice finding equivalent fractions while the teacher poses questions (e.g., How much more is needed to make ___?) to different pairs.
	» The teacher describes how the game will be used with other fraction concepts.
About the Site	**Eliza Hart Spalding School of Math and Technology Boise, Idaho**

Demographics

» 85% White
» 8% Native American
» 6% Black

- » 5% Hispanic
- » 3% Asian
- » 2% Other
- » 18% Free or Reduced-Price Lunch
- » 1% English Language Learners
- » 6% Special Education

At Eliza Hart Spalding School of Math and Technology, a math and technology magnet, the focus is on developing students' mathematical thinking. Features of the program include the following:

- » A learning environment that supports using a variety of strategies in mathematical problem solving, reasoning and proof, and connections;
- » Use of models, manipulatives, and visual representations to support fractions instruction; and
- » Emphasis on mathematical discourse and communication to explain reasoning.

Full Transcript

🖵 **00:05** My name is Cara Crist. I am a third-grade teacher at Spalding Elementary, Meridian School District, Boise, Idaho. I chose fraction strips as an introduction today for our lesson. I would think that coming into third grade, students have a lot of experience with being able to tell what is half of a group, but looking at one as a unit and looking at that fraction strip as the unit and that fractions make up that unit and the different types of fractions that can make that unit or that one as a whole. I started with halves, fourths, and eighths today because I really wanted the students to see the relationship between those three fractions and how they relate back to each others.

Crist
(to students) 🖵 **00:47** Everyone look at your orange piece of paper. We are going to call this one. With your yellow, I want you to fold it so both sides are matching, and I want you to crease it, and I want you to cut that

crease. So two halves will equal one. I want you to fold your blue in half, and I want you to crease it. I want you to fold it again, making sure those edges meet. Okay, go ahead and unfold it, and cut on those creases. How many blues will it take to fill up that orange or that one? I want you to do it. So one whole equals four one-fourth pieces. Now I want you to take your green. You're going to fold in half. You're going to fold it again. Then you are going to fold it one more time, and you are going to cut exactly on the creases. Go ahead and clear off your one, or your whole, and I want you to fill that with your green pieces of paper. One is the same as eight one-eighth pieces.

📺 **02:46** We are going to use our orange as our game board. The goal for Cover Up is that you are going to cover up your game board completely. You can't have any pieces hanging over. You can't be short any pieces. You have to cover up that orange piece of paper from side to side. Cover up the entire thing, okay.

📺 **03:12** I am give you a dice and with the dice, it will have our fractions. It will have one-half. It will have one-fourth, or it will have one-eighth. And you are going to playing with partner. You each get your own game board. And then I roll the dice, and my partner rolls the dice, so we're going to talk turns.

Student   📺 **03:36** Where's the dice? Thank you. One-fourth.

Student   One-eighth.

Student   One-half. That is yellow. I won!

Crist   📺 **04:00** In this lesson the students had lots of different opportunities to talk about their strategies and talk about their different ways of

solving, and even some of their problems that they came across. I was able to go over and question and kind of spark the conversation between them.

Crist
(to students) 📺 **04:13** You have how much more than Seth?

Student I have one-fourth more than Seth.

Crist What are you guys looking for?

Student We're looking for one-eighth.

Crist How much is it off your game board?

Crist Who right now is ahead in Cover Up? What would Raylynn have to get in order to win Cover Up?

Crist 📺 **04:33** Some things that surprised me with the lesson, them being able to really see those unit fractions and their relationship between, so seeing that two one-eighth pieces equaled a fourth. Something else that was really exciting is having the students be able to see how much more did this one student need to be tied, and they could say, "Oh, I need one-fourth, or I can have two one-eighth pieces." And we'll come back to it in the future lessons and we will play Uncover, where they fill their board and by rolling the die, they'll uncover using whatever combination of pieces they would like. And then we will play Trade Up, which gets into the idea of equivalent fractions, so if they have two one-eighth pieces then they can trade upto a one-fourth, and if they have two one-fourths, so the idea of trying to get the least amount of pieces on their board as possible.

📺 **05:29** I had many students that are starting to explore the numerator and the denominator and what those mean. We just do so much with this game. It's a real staple for a really long time. There's just so much you can do within it.