S.M.a.R.T. Books!

SMaRT Books Lesson Plan

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Grade Level

Math Strand

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Literature Connection:

If You Hopped Like a Frog by David M. Schwartz

Mathematical Strand:

Algebra

Topic:

Students will search for and generalize an algebraic pattern. Students will make and analyze a coordinate graph.

Grade level:

4th - 6th grade

Lesson Created by:

Joy Heinrichs Theodore Roosevelt Elementary, Manhattan, KS

Related Links

Book Abstract

Participant Profile

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Lesson Description

Materials

- Book If You Hopped Like a Frog By: David M. Schwartz, chart sized grid paper, ½ in. dot stickers- one for each student, meter tapes or sticks, masking tape, pencils, 1 small grid paper for each student (optional)

1. Launching the lesson

   a. Read the book
   b. Brainstorm -What are some other proportions you think the author could have written about? He could have said, "If you could swim like a fish . . ." or "If you were as slow as a turtle . . ."

2. Exploring the lesson

   a. Do you hop like a frog? Today we are going to see how far you can hop. Can you hop as far as you are tall? We want to compare your height to how far you can hop.
   b. Using meter tapes, have the kids measure their height in centimeters.
   c. Mark a masking tape line on the floor as the place to start their hop measurement. Measure the distance of their hops.
   d. Whole group- label your coordinate graph with proper x-axis,

y-axis, and title. Decide what number to begin your labeling (What is the range of heights and hops so we include the lowest and highest measurements?)

e. Have each student write his or her initials and coordinates (x,y)[x=horizontal, y=vertical] on the sticky dot and place in the right place on the graph. If you want, have each child duplicate the large class graph on his or her own small coordinate grid.

3. Summarize/Discussion/Elaboration

a. Analyze the finished coordinate grid. In your math journal (or think, pair, share) write down any observations you have about the data in our coordinate graph.
b. Do you see a relationship between someone's height and hop? What is the ratio? Where are most of our coordinates grouped on the graph?
c. How far would a 6-foot person, 8-foot, or a 25-foot person hop?