Pre-Reading

Jack and Ray, the giant, encounter several problems when they try to interact in each other's worlds. Can you predict what some of these problems might be?

*Oh no! First, the two boys try to play hoopball but find that Ray's hoop is too high for Jack. Then, when Jack invites Ray to his house, the two boys find that the beanstalk is too weak to support Ray's weight. They have to build a ladder. But, how long will it be?

Have students discuss several pictures in the book. What do you see? What is the problem? How could you solve the problem to make things fair?

Next….What do you know about the fairytale "Jack and the Beanstalk"? What are some character traits for the Jack of the traditional story? For the giant? List these and refer to them after the story. Which were accurate for the characters in *Beanstalk: The Measure of a Giant*? Which were not?

Math Connections

Math Vocabulary: size, relative size, comparison, measurement, ratio, proportion

Here are some of the problems that Jack and Ray experienced as they tried to be friends. Discuss the pictures that correspond with each problem. Introduce critical vocabulary.

1. Playing hoopball (p. 11) Vocabulary: hoop, tall, short, high, low

2. Making a giant-sized checkerboard (p. 18) Vocabulary: measure, inches, parallel, perpendicular, diameter
3. Measuring the height of the beanstalk (p. 28) Vocabulary: height, feet, ratio, proportion

Problems 1 and 2

Summarize the issue in these first two problems: The boys need to measure the small size of things in Jack's world and compare them to the large-sized things of Ray's world.

What do they do to solve the problems?

(They *compare* the two items and build a fair replica using proportion.)

Before getting into the math elements, it might be valuable to make estimates about relative sizes. For instance, the teacher could bring in a dollhouse chair.

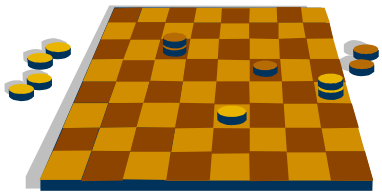
How much larger is a regular chair?

Make a chart: How high is the doll's chair? How high is your chair? Have students write their guesses under each heading. Then, use a ruler to measure the height of the doll chair, say 3 inches, and the measure of the real chair, say 33 inches. Establish relative sizes before discussing ratio and proportion.

Writing a ratio…

In the book, the issue of comparing sizes is first explored with the problem of the hoopball baskets. When you compare Ray's height to Jack's, Ray is 20 feet tall and Jack is four feet tall. The height of the hoopball loop is 60 feet. The question is: How high should Jack's basket be to make the game fair? This leads to the ratios 20: 60 and 4:?. The number in the second ratio can be found by writing a proportion.

20 x3	60 feet
4 x3	12 feet



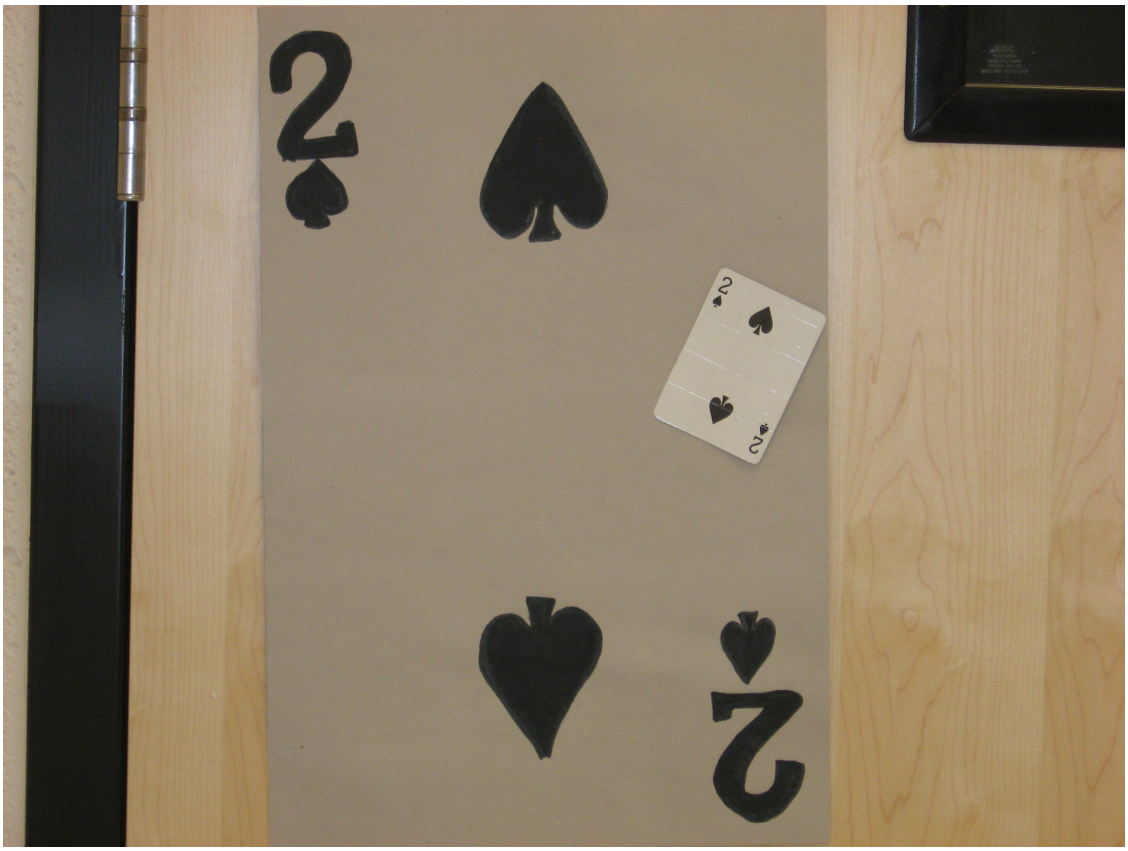
The Checkerboard→

The second problem dealing with relative size involves making the checkerboard. Again, students will compare the height of each boy. Jack looks at the relationship between his height and Ray's. Since he is 5 times smaller than Ray, (4 feet x 5 = 20 feet), the checkerboard must also be 5 times as big. Again, set up a proportion. If a checker is one inch across for Jack, it must be 5 inches across for Ray.

Extension Activities

Build a Ray-sized:

*Deck of cards, *Notebook, *Gameboard (monopoly, snakes and ladders, etc.) *Sandwich, *Cookie, *Meal, *Pencil (made from paper mache over an empty wrapping paper tube).



Write About it:

- What problems would size present if you were to go and live in Ray's world?
- Write about a day spent in Ray's world/Write about a day Ray spends in Jack's world. Which situation is better?
- Jack's mom serves up some delicious bean dishes. Write a menu for a restaurant specializing in Jack's beanstalk beans.