

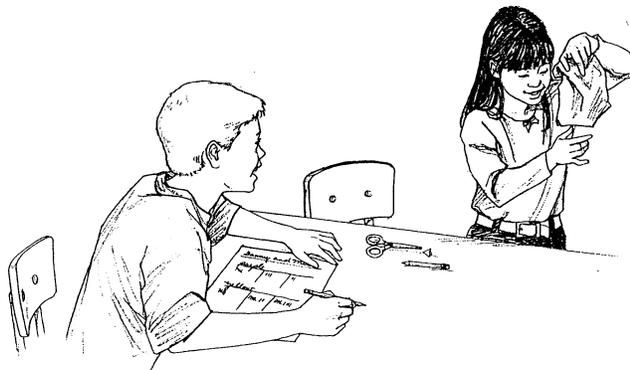
## **CAN YOU PREDICT THE NUMBER?**

*There are 10 Rainbow Cubes in your bag. Shake the bag 10 times and tally which color cube appears in the peek hole. Can you predict the contents of the bag? Make a recording explaining how you made your prediction and how it compared to the actual contents of the bag.*

### **MATERIALS**

**For each pair of students**

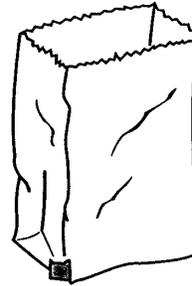
- ◆ Rainbow Cubes in two colors
- ◆ brown paper bag
- ◆ scissors
- ◆ paper, pencils, and crayons for recording



**A.35**

[Source: 20 Thinking Questions For Rainbow Cubes - Grades 3-6, Creative Publications]

1. Show the students a bag you have prepared containing 3 blue and 7 orange Rainbow Cubes. **Here is a bag containing 10 Rainbow Cubes. The bag has a peek hole that lets you explore the contents of the bag without opening it.** Gently shake the bag 10 times and have a volunteer record the color that appears in the peek hole each time. **Can you predict how many cubes of each color are in the bag?**



2. Have students prepare a peek-hole bag by cutting a tiny triangle (about  $\frac{1}{4}$  inch) off one of the bottom corners of a paper bag. Have them fill each bag with 10 cubes in 2 colors. Let each pair decide how many cubes of each color will go in their bag.
3. **Trade your bag with another pair. After you've traded bags, gently shake your bag 10 times and tally the results of each shake. Can you predict the contents of the bag? Explain how you made your prediction.** Have students repeat the process at least two more times. After each repetition, they should revise their predictions. When they are through, students should empty their bags and compare their final prediction with the actual contents.

## QUESTIONS FOR DISCUSSION

- ◆ What was your prediction? What did you find out after checking the contents of the bag?
- ◆ Is the amount of data you collect important in making a more accurate prediction? Why?
- ◆ How did your predictions change as the amount of data grew?
- ◆ How do you think your prediction might change if you were able to collect more data? How do you know?
- ◆ Can you be confident that you made an accurate prediction based on your data? How do you know?
- ◆ Was it easy or difficult to predict what was in the bag? Why?

## JOURNAL REFLECTION

How important is collecting data in order to make a prediction? How do you know?

How can you become more confident about making a prediction?

[Source: 20 Thinking Questions For Rainbow Cubes - Grades 3-6, Creative Publications]

## **RAINBOW PROBLEM**

Name: \_\_\_\_\_

1. Complete 10 trials and record data.

<b>Trial #A</b>	<b>Color</b>
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

2. Make a prediction. What do you think is in the bag? (How many of each color)

\_\_\_\_\_

3. Open the bag and check your prediction. What was in the bag?

\_\_\_\_\_

4. Write a few sentences explaining how you made your prediction. Discuss how accurate your prediction was.

**A.36a**