Spin Me Along

Math Concepts

- whole numbers
- area
- fractions
- sample space
- decimals
- probability
- percents

Materials

- TI-15 Explorer™
- **Spin Me Along** recording sheets
- small paper clips
- pencils

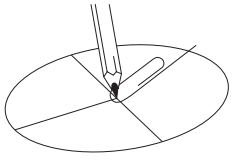
Overview

Students will explore probability and patterns in fractions, decimals, and percents by spinning three spinners and recording and analyzing the results.

Introduction

1. Have students discuss Spinner A on page 109. Ask questions such as: What do you think will happen when you spin this spinner? Why do you think that? If we all spin Spinner A once and display our results in a bar graph, what do you think it will look like? Have students make similar predictions for Spinners B and C.

2. Make a simple spinning device by bending out one end of a paper clip. Then place the tip of a pencil through the curve at the end of the paper clip and onto the center of one of the spinner circles provided on page 109.



3. Model the **Spin Me Along** activity for students on the overhead projector using Spinner A on page 109. Tally the results for the first ten spins.

4. Show students how to record the fractional part of the spins for 1 and 2.

   Example:
   Out of ten spins, 1 comes up four times (4/10), and 2 comes up six times (6/10). Show students how to use [F↔D] on the calculator to change each fraction to a decimal. Use [▸%] [Enter] to change the fraction or decimal to a percent.

Results	**Result of 1**	**Result of 2**
Tally of Results — *After 10 spins*	////	𝍸 /
Fractions	*4/10*	*6/10*
Decimals	*0.4*	*0.6*
Percents	*40%*	*60%*
Tally of Results — *After 20 spins*	𝍸 ////	𝍸 𝍸 /
Fractions	*9/20*	*11/20*
Decimals	*0.45*	*0.55*
Percents	*45%*	*55%*

Spin Me Along *(continued)*

Introduction (continued)

5. Have students spin Spinner A 40 times to collect data, recording the fractions and decimals after every 10 spins. Then have students spin and collect data in the same way for Spinners B and C.

6. As a whole class, compile the data into one class chart for each spinner. Then have students analyze the class data and write about what they notice.

Collecting and Organizing Data

While students are collecting data and recording the fractions and decimals, ask questions such as:

- Is each number equally likely to occur on each of the spinners? Why or why not?
- Which numbers do you think are more likely to occur than others? Why do you think that? Does the data you are collecting seem to support your ideas?
- How are you deciding which fraction to use to describe each outcome?
- What is the "whole" to which the fractions and decimals are referring?
- Do you see any patterns in the fractions and decimals you are recording?

How are you using the calculator to help you in this problem?

How can you use the F↔D key to compare fractions and decimals?

Would you want to use the Int÷ key to compare fractions and decimals? Why or why not?

How can you use the ÷ key to compare fractions and decimals?

How can you use the ▶% key to compare the fractions, decimals, and percents?

Analyzing Data and Drawing Conclusions

After students have collected their data and added their information to a class chart, have them discuss the results as a whole group. Ask questions such as:

- What information did you use to predict which number would come up most often on each of the spinners?
- Are each of the numbers equally likely to come up on all three spinners? Why or why not?

Did you use the F↔D key to compare fractions and decimals? Why or why not?

Spin Me Along *(continued)*

Analyzing Data and Drawing Conclusions (continued)

- How did your individual results compare with the class results for each spinner?
- How could you describe the patterns in the fractions and decimals?
- What if you changed the sizes of the sections on the spinners? How do you think it would change your results?

Did you use the ÷ key to compare fractions and decimals? Why or why not?

Did you use the Int÷ key to compare fractions and decimals? Why or why not?

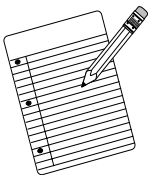
Continuing the Investigation

Have students:

- Change the sizes of the sections on the spinners, predict how the outcomes are likely to change, and collect data to compare with their predictions.
- Invent a spinner that they think will produce a given set of results and collect data to compare with their predictions.

Example:
A spinner on which 1 will come up half as often as 2 or a spinner on which 2 will come up four times as often as 1.

Name:



Spin Me Along
Recording Sheet

Collecting and Organizing Data

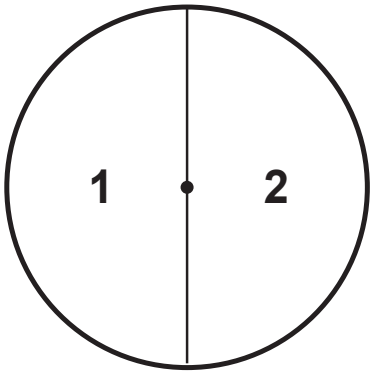
Results	Result of 1	Result of 2
Tally of Results — *After 10 spins*		
Fractions		
Decimals		
Percents		
Tally of Results — *After 20 spins*		
Fractions		
Decimals		
Percents		
Tally of Results — *After 30 spins*		
Fractions		
Decimals		
Percents		
Tally of Results — *After 40 spins*		
Fractions		
Decimals		
Percents		

Analyzing Data and Drawing Conclusions

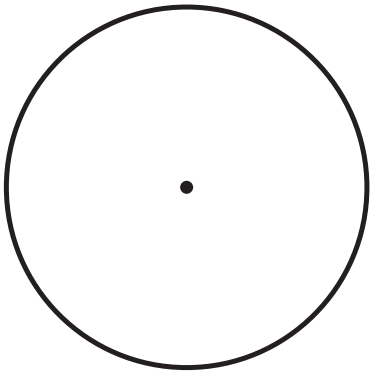
On the back of this page, write about the information that you gathered.

Spin Me Along

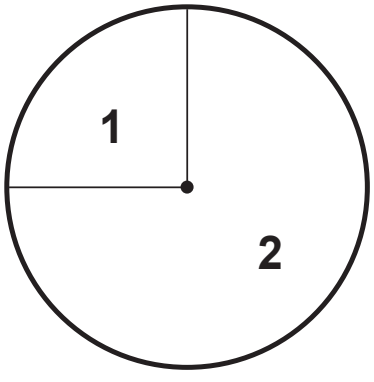
Spinners



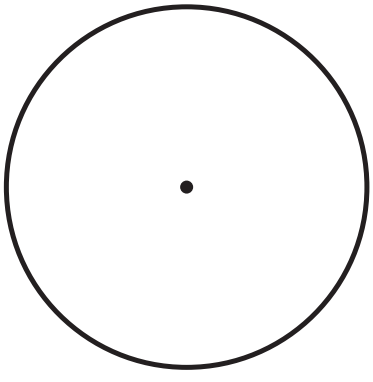
Spinner A



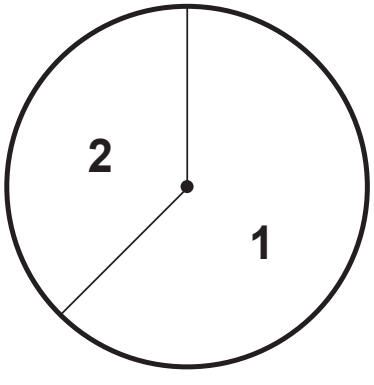
Spinner _____



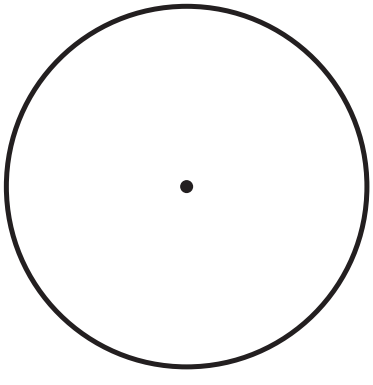
Spinner B



Spinner _____



Spinner C



Spinner _____