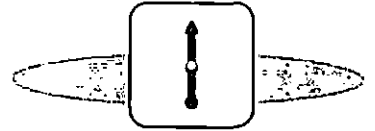


Objective:

Formulate the questions and categories for data collection, and actively collect first-hand information.



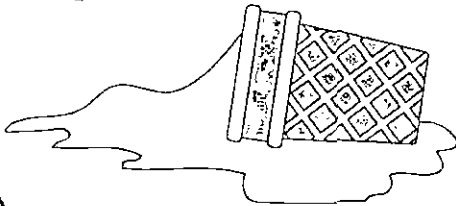
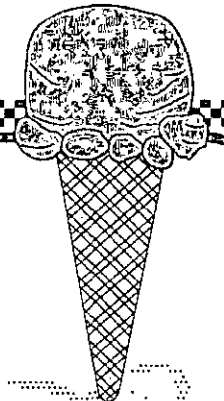
# Activity:

Materials: blank spinner mat, overhead spinner.

- Create a spinner with the following six categories: pets, movies, shoes, sports, hair, eye.
- Twirl the spinner.
- Create a question in the category spun. Examples:  
 How many people in your class have a cat as a pet?  
 Do more people like to watch a movie at home or in a theatre?  
 What is the most common shoe color of the students in the Grade 2 class?  
 What sport or game will the students in your class play at recess?  
 What is the most common eye or hair color of the students in your class?
- Conduct a survey to answer your question.
- Create a poster to display your question and the answer.



## In your class, what is the favorite flavor of ice cream?



**STRATEGY:** Construct a List  
**ANSWER:**

Answers vary.

# adaptations:



Start by giving the students a question and collect the information together.

Now, ask the students to generate a follow-up question and proceed to collect the data.

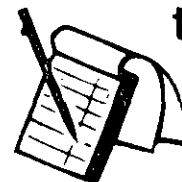


Have students brainstorm a list of possible questions which can be researched.

For each question brainstorm a list of possible ways to collect the data.

## Writing Corner:

### Describe how to conduct a poll.





Choose an appropriate recording method, such as tally marks, to collect data.

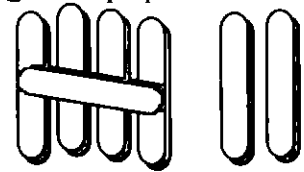


**Representation:**

*Materials:* popsicle sticks (or strips of colored paper), crayons, paper bag.

**Part A**

- Start by coloring several popsicle sticks, some red, some green, some blue and some yellow.
- Conduct a poll: go ask several friends which of these four colors is their favourite color. As they select their favourite color, have them place that popsicle stick in the bag.
- After you have finished your poll, empty out the bag and arrange the popsicle sticks in sets of up to 5 of the same color as shown:
- What color was most popular? least popular?

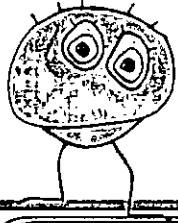


**Part B**

- Conduct another survey, this time recording individual responses on a blank popsicle stick before putting it in the bag. Group the sticks to build a tally graph.



Darren conducted a survey of the eye color of everyone in his class. Darren has 24 classmates. How many more people must he ask to complete his chart?



<b>Blue</b>	+++
<b>Brown</b>	+++ +++
<b>Hazel</b>	
<b>Green</b>	

**STRATEGY:** Use an Equation  
**ANSWER:**

He must ask 2 more people.

**DOWN**

**UP**



**adaptations:**

In Part A above, start by grouping the like-colored sticks together. Count the number of each color.

Now make a list of each and its frequency.

Now arrange the sticks into a tally graph. Show how the tally graph makes it easy to count the number in each set.

Work with a friend. One of you should conduct a poll as in Part A above. The other should ask the same people the same question, but record the answers with a paper and pencil.

Build a popsicle stick tally chart and a paper and pencil tally chart.

How are they different? the same?

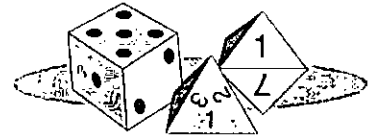
**Writing Corner:**

**In a tally chart what does each tally mark represent?**



*Objective:*


Organize data using graphic organizers such as diagrams, charts and lists.





*Representation:*


*Materials:* 4-, 6- and 8-sided dice, paper, pencil.

• Conduct an experiment:

Is it easier to roll a  with a 4-, 6- or 8-sided die?

• Roll all three dice at the same time. Keep track of which dice show a  on each roll. After 20 rolls, which die produced the most s?

• Repeat the experiment two more times.

• Create a chart to show how many s were rolled with each die for each time you tried the experiment.



How many people in your school have a birthday in December?



**STRATEGY:** *Make a List*  
**ANSWER:**

Answers vary.

*adaptations:*

[A] Adapt the activity above to have students look for a single number on a single die, e.g., roll a 6-sided die only and count the numbers of threes. Keep track of the number of rolls and the number of threes rolled.

[B] Adapt the activity to count the number of *each* value rolled with a single die.



For each question below, conduct an experiment to determine the answer:

With which of the three dice is it easiest to roll

- an even number?
- a 6?
- a number greater than 3?



*Writing Corner:*

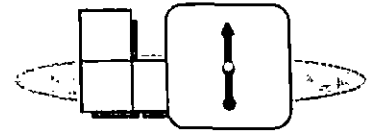
What are some of the things people put on lists?

Make a list of lists!



*Objective:*

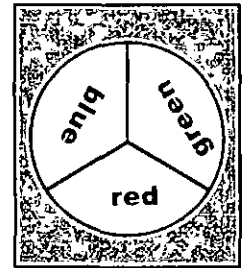
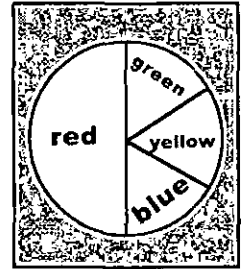
Construct and label concrete/object graphs, pictographs and bar graphs.



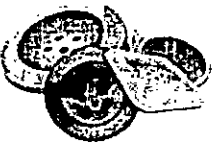
*Representation:*

*Materials:* color tiles, blank spinner mat, overhead spinner, pencil.

- Work with a partner. Start by making the two spinner mats as shown.
- Have each partner twirl a spinner at the same time. If both spinners point to the same color, take one tile of that color and set it aside to build a concrete graph later. Repeat until you have set aside ten tiles.
- Use the ten tiles to create a concrete graph.
- Construct a bar graph and pictograph to show your results.



**PROBLEM SOLVING**



Kara drew the incomplete pictograph shown. Using the clues below, finish the graph:

- the number of red and green buttons was the same as the number of blue and yellow.
- there are more than 10 buttons in all.
- there is at least one button of each of the 4 colors.
- there are more red than yellow buttons.

red	●● ●●
green	●● ●● ●● ●●

**STRATEGY:** Construct a Model  
**ANSWER:**

There are 5 blue buttons and 1 yellow button.

*adaptations:*



Use either one of the spinner mats as shown above to create a set of tiles. Use the same set of tiles to make a concrete graph, then arrange the tiles and trace around them to make a bar graph, then a pictograph.



Create a set of spinner mats which when used like those above would likely give you a pictograph showing only red and blue tiles, more red than blue.

*Writing Corner:*

Write the instructions for drawing a bar graph showing your height and the height of two friends.





Discuss data and draw and communicate appropriate conclusions.



**Representation:**

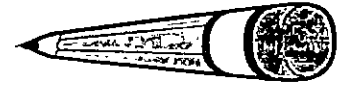
*Materials:* paper bag, color tiles, paper, pencil.

- Work with a partner for this activity.
- While your partner is not looking, place zero, one or two tiles of each color in the bag. Try to make sure you have at least 3 tiles in the bag.
- Now draw one tile from the bag (no peeking!) and show it to your partner.
- Return the tile to the bag. Do this three times and then let your partner guess how many of each color tile you put in the bag.
- Your partner will want to keep track of what is drawn by making a list.
- If his/her guess is correct, switch roles. If incorrect, draw and replace three more tiles and let him/her guess again. Keep going until the partner guesses correctly.
- Who can figure out what is in the bag first?



Jackie twirled her spinner 15 times and made a list of the results. Create a spinner similar to Jackie's.

- |       |       |       |       |
|-------|-------|-------|-------|
| Red   | Green | Red   | Green |
| Green | Blue  | Green | Blue  |
| Green | Blue  | Green | Red   |
| Blue  | Blue  | Blue  |       |

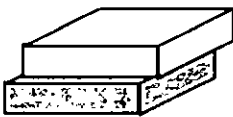


**STRATEGY:** *Guess & Check*  
**ANSWER:**

Answers vary.

**adaptations:**

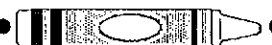
Place only 1 or 2 blocks of either red or blue tiles in the bag. Help the students set up a tally chart to keep track of the results as tiles are drawn.



Ask students to create a bar graph or pictograph showing how many of each color of tile were drawn before the correct combination of tiles was guessed.

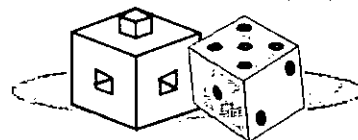
Ask students to write a paragraph explaining how this information helped (or could help) them predict the correct combination.

**Writing Corner:**  
 Is it true that it is easier to roll a 5 than a 3 with a 6-sided die? Conduct an experiment to explain your answer.





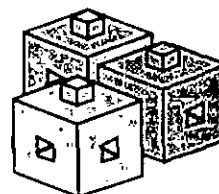
Generate new questions from displayed data.



**Representation:**

*Materials:* 6-sided die, linking metric cubes, paper, pencil.

- Roll a die 5 times.
- On each roll take a collection of cubes (the same number as the value rolled).
- Sort the cubes into groups by colour. Link the cubes together to make trains of cubes made from the same colour
- Create a tally chart to display the number of each color.
- Create a bar graph to display the number of each color selected. How is the bar graph like the trains of cubes you created above?
- Write three questions you could ask about your tally chart.
- Write three questions you could ask about your bar graph.



**PROBLEM SOLVING**

Justin kept his marble collection in a bag. He pulled the marbles out of the bag one at a time and made a tally chart to show how many he had of each color. Which of the following questions can be answered using the information in the tally chart?

red	### ##
green	###
blue	
yellow	###

- Were there more red or green marbles in the bag?
- How many different colors of marbles were in the bag?
- How many marbles were in the bag?
- Which color of marble did Justin draw first?



**STRATEGY:** Logical Reasoning  
**ANSWER:**

The last question cannot be answered with the clues given.

**adaptations:**



Construct a concrete graph with the linking metric cubes on a blank sheet of paper. Trace around the cubes once linked to create the bar graph.

Now write a sentence explaining how the number of cubes is represented in the bar graph.



Have students collect charts and graphs from newspapers and magazines. Construct one or more questions that can be answered using the information in those charts and graphs. Create a bulletin board display.

**Writing Corner:**  
Cut a graph or chart from a newspaper or magazine. Write a sentence to describe what the chart is about. Write one question which could be answered by looking at the graph.

