

Name _____

Date _____

Teacher Notes

Rationale

Mathematics investigations open students' minds to the possibility of multiple approaches, multiple outcomes and multiple solutions. When linked to the world in which they live, open-ended investigations can help students see the relevance of mathematics within their lives. They also provide wonderful opportunities for differentiation, enabling students to feel confident and successful as they engage with tasks at their own individual level.

Overview

This mathematics investigation requires students to apply their knowledge and understanding of data representation and interpretation to a real-world situation.

Objective

To conduct a survey to determine which class reward is the most popular.

Duration

Approximately two 60 minute lessons

Prior Learning

Before commencing the investigation, students should be familiar with the following concepts:

- collecting and displaying data using tables and graphs
- comparing methods of data representation.

Differentiation: Supporting Students

Less confident students could be supported in their learning by allowing them to work with a peer tutor when conducting the survey. In addition to this, the task could be simplified by reducing the number of reward options available (three instead of five).

Differentiation: Extending Students

More capable students could be encouraged to write paragraphs to explain the data contained within their graphs. In addition to this, they could be challenged to prepare a timetable or a budget for the class reward.

Monitoring Student Understanding

Due to the open-ended nature of this investigation, students' responses will vary significantly. For this reason, no answer sheet has been provided. Teachers must therefore check that each student has completed the investigation according to the task requirements.





The Scenario

Your class has been so well behaved this week that your teacher, Miss Generous, would like to give everyone a special reward! She has set aside 1 hour on Friday afternoon for your class to have the reward. Your class may use this time however you choose, but there are two conditions:

- 1) Miss Generous must approve of the chosen reward.
- 2) Five reward options must be voted on by the class, with the most popular activity being selected.

The Procedure

1. Brainstorm some possible ideas for the class reward using the Reward Brainstorm Worksheet. Share your ideas with the class.
2. Once the class and Miss Generous (your teacher!) have decided upon five options, list these in the table on the Collecting and Interpreting Data Worksheet. Predict which reward you think will be the most popular and why.
3. Conduct the survey. Ask at least 20 students in your class which reward option they would prefer. Record your data in the table provided using tally marks, then calculate the frequency of each reward option.
4. Represent the data from your survey as a picture graph and a column graph on the Constructing and Comparing Data Displays Worksheet.

The Task

As a class, brainstorm some possible ideas for the class reward.

Survey your classmates and determine which reward is the most popular.

The Materials

- Pencils
- Clip boards
- Worksheets



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Reward Brainstorm

In the space below, record some ideas for your class reward. You might like to think about:

- indoor activities
- outdoor activities
- class, small group and individual activities.

Remember, you only have 1 hour. Be sure that any activities you think of can be completed during this time!



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Collecting and Interpreting Data

1. Before completing your survey, predict which reward option will be the most popular.

I predict that the most popular reward will be _____ .

I think this because _____ .

2. Write the five possible rewards options in the first column of the table. Ask at least 20 students in your class which reward option they would prefer. Record your data.

Reward Options	Tally	Frequency
1.		
2.		
3.		
4.		
5.		

3. Which reward option was the most popular? How do you know this?

4. Which reward option was the least popular? How do you know this?

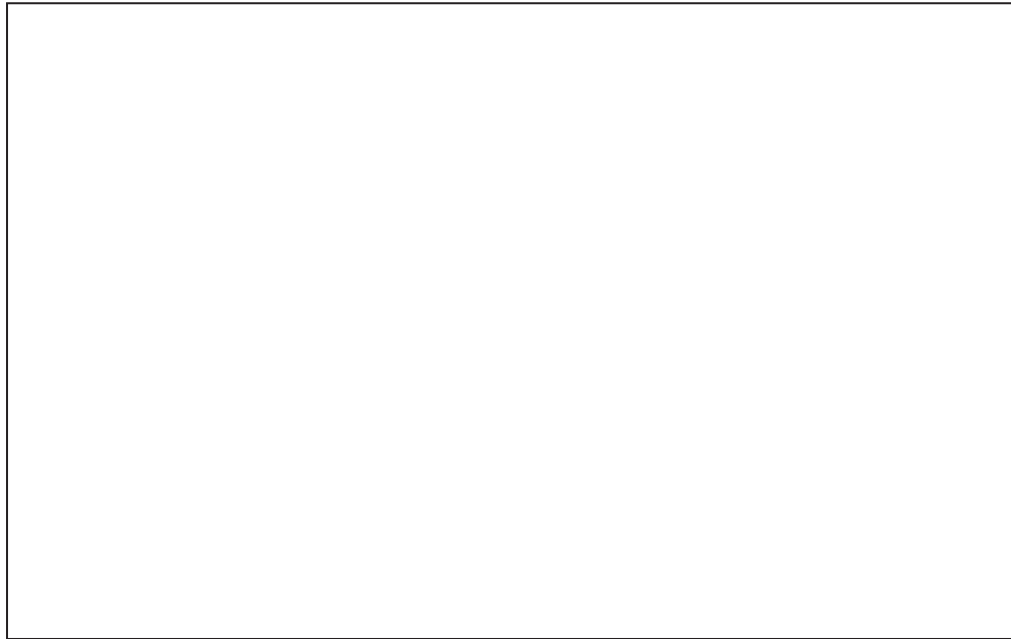
5. Did the result of the survey match your prediction? How do you know this?



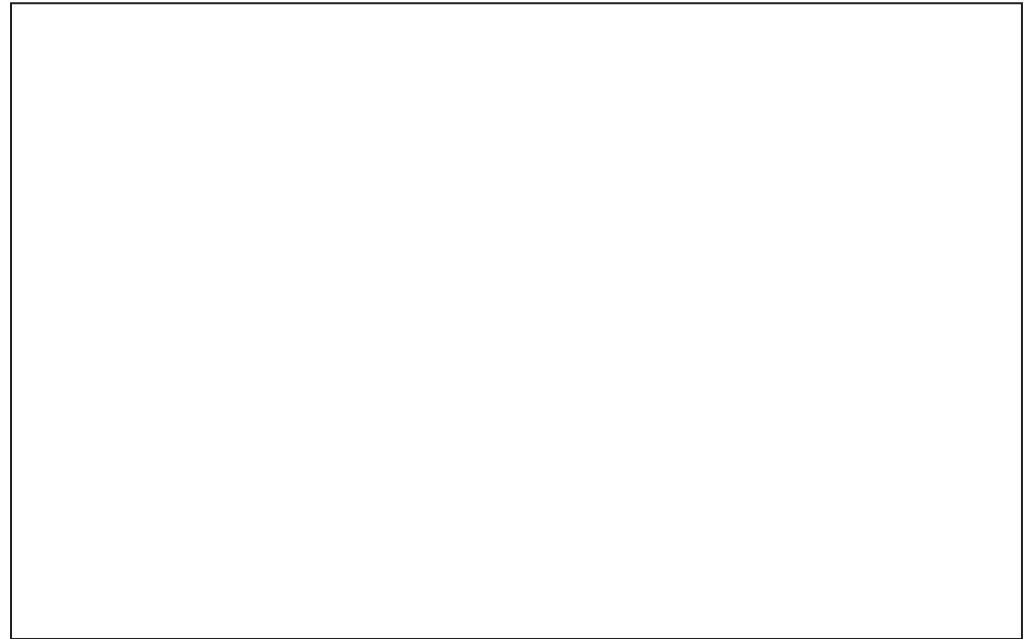
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Constructing and Comparing Data Displays

In the box below, draw a picture graph to represent the data from your survey. Don't forget a title and a key.



In the box below, draw a column graph to represent the data from your survey. Don't forget a title and labels.



Which graph do you find easier to understand? Give reasons for your answer.



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Reflection

1. Did you enjoy working on this investigation? Give reasons to explain your answer.

2. Were the results of the survey what you expected? Give reasons to explain your answer.

3. Are you happy with the most popular reward from the survey? Give reasons to explain your answer.

4. What new knowledge and skills did you learn by completing this investigation?

5. Circle the statement that best suits how you feel about conducting surveys.

a) I feel very confident conducting surveys.

b) My understanding of conducting surveys is improving.

c) I still need some help when conducting surveys.

