Biased Samples task

GOAL: Students will explore the concept of random sampling and understand how random sampling can be used to draw inferences about a population.

DEVELOP: Task #1

What's Your Favorite Candy Bar?

Anticipation:

- What makes a representative or random sample? Why is that important?
- What are the benefits of limiting choices when asking such a general question?
- How does the size of the sample affect its effectiveness?
- What happens to the survey if people are able to vote more than once?

PRACTICE: Task #2

Creating a Sample and Making Inferences

Place students in groups of four and have each group work to write one survey question using what they have learned about sampling. Let them know that their question will be included on a survey taken in class.

After students have submitted their questions administer the survey and have students compile results. Each group will then create 2 representations, other than a table, to share the results from their question with the class.

Post these representations and have students pick 5 that they did not help write. One they need to analyze and list both strengths and weaknesses for that question. For the other 4 they need to write at least one sentence explaining what they could infer about the class population from the results and a possible use for this data.

Anticipation:

- Is the survey question too vague or does it offer too many choices?
- Is the survey question relevant to the population?
- What is the possible benefit of the information gained from the survey?

What's Your Favorite Candy Bar?

The Student Council at Lava Ridge wants to know which candy bar Geckos and Geckettes prefer. Below are some of the ideas they came up with for finding this information and their results. Examine each sample and decide if they represent the Lava Ridge population. Be prepared to explain why you believe they do or do not.

Student A asked all the girls on her community soccer team.

Candy Bar	**#**

Kit Kat	5
Twix	3
Snickers	2
Skittles	3
Hershey's Milk Chocolate	3

Student B asked students as they came into the lunchroom.

Candy Bar	#
Kit Kat	2
Twix	1
Snickers	1
Hershey's Milk Chocolate	1
Butterfingers	1
3 Musketeers	1

Student C asked all the students in each of her classes throughout the day.

Candy Bar	#
Kit Kat	31
Twix	30
Snickers	29
Hershey's Milk Chocolate	12
Butterfingers	8
3 Musketeers	23
Milky Way	7
Heath	2
Reese's Peanut Butter Cups	9
Skittles	30
Starbursts	15
M & M	18
Payday	5
Whatchamacallit	7
Idaho Spud	1
Mr. Goodbar	2