

Margaret Coburn

“Popcorn Cards”

Probability, Mean, Median and Mode

MA06SP02, MS06SP04, MA06SP06, MS06SP07, MS06SP08, MS06SP09

Middle School, 6<sup>th</sup> grade

Probability or Mean Median and Mode

[Margaret.Coburn@albany.k12.or.us](mailto:Margaret.Coburn@albany.k12.or.us)

Task:

A popcorn company has included a collectable card, representing a mathematician in its box of popcorn. There are 6 different cards.

Goal: you want to have a complete set of cards!

- An equal number of the six different cards have been shipped to all stores.

Question: How many boxes of popcorn would you need to buy to have a complete set?

What do you predict (estimate) your answer to be? \_\_\_\_\_ Why? \_\_\_\_\_

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To solve we will use colored tiles and not boxes of popcorn! Each color represents a different card.

You have 6 different colored tiles and one sack for each group of 4.

Conduct an experiment using the tiles to determine the probability of collecting all six cards.

Record your results in your group. Repeat the task a second time. Record your results.

As a class we will now tally all the results on the board.

Find the mean, median and mode of the results.

Taking it further: Give each group 10 tiles of each color. Will this change the number of boxes you need to buy to complete the set of 6 cards? \_\_\_\_\_ Explain

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Repeat the task of drawing out tiles until you have a “complete set” of cards, using the additional tiles.

Record your results in your group. Repeat the task a second time. Record your results.

As a class we will now tally all the new results on the board next to our first results.

Find the mean, median, and mode of the new results.

Now compare. What can you determine from looking at the different trials? Show any similarities you may have found.