Grade Four

Skittle Probabilities

Lesson Summary

Students will each receive a bag of skittles, mixed colors. They will determine the probability of picking a particular color from the bag without looking. Students will then compare their own probabilities with that of a partner. Initial bags are of equal amounts. Students will then remove Skittles of a particular color, making the total number different and again compare probabilities exploring how outcomes have changed.

Major Topic and SOL

Math SOL (2009) 4.2.a, 4.19

Length of Unit 2 - 60 minute periods

Student Objectives

In Mathematics the student will be able to:

- Understand and apply the concepts of probability
- Predict the likelihood of an event occurring and relate it to its fractional representation
- Compare fractions with like and unlike denominators

In Language the students will be able to:

- Describe events as likely or unlikely
- Discuss the degree of likelihood using the terms certain, likely, unlikely, impossible

21st Century Skills

- Critical-Thinking and Problem Solving
- Communication
- Contextual Learning

Assessment Evidence

- The teacher will review the data collected by the students on the chart provided

Supplies/Materials/Technology

- Bags of skittles (already separated into groups of 12)
- Chart for recording data

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- Fraction circle sets for each pair of students
- Document camera/projector/interactive whiteboard to model steps

Lesson Plan

Motivation & Building Background:

- Students will be introduced to the concept that events can be described in terms of being likely or unlikely to occur.
- Examples from students' everyday experiences will be used to discuss likelihood and to introduce key vocabulary words: certain, likely, unlikely, and impossible.
- Benefits of determining probability will be explored. (Like when playing games)

Presentation

- DAY 1
    - Students will be introduced to the concept that events can be described in terms of being likely or unlikely to occur.
        - Examples from students' everyday experiences will be used to discuss likelihood and to introduce key vocabulary words: certain, likely, unlikely, and impossible. Benefits of determining probability will be explored. (Like when playing games)
    - Students are each given a bag of 12 Skittles and a sheet on which to record their data.
    - Students will group their Skittles by color, count them and record the amounts on their data sheet.
    - Students will determine the probability of picking a particular color from the bag without looking.
    - Students will predict the likelihood of an event occurring and relate it to its fractional representation.
    - Students will record these fractions on their data sheet.
    - Collect all materials for next day.
- DAY 2
    - All materials are returned to students.
    - Students will partner with another student and compare their fractions for each color probability.
        - They will use terms of greater than, less than or equal to compare their fractions.
            - For example "Since I have 5/12 red Skittles and John has 3/12 red Skittles, I have a greater probability of picking a red Skittle than John."
        - Students will use Fraction circles to verify their comparisons.

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- Students record results.
- Students are directed to remove all Skittles of a particular color from their bag. This should be strategically planned so that partners will now have a different total number of Skittles in each of their bags.
- Students will again compare their fractions, now with the new and unlike denominators. Fraction circles will be used to verify their comparisons. Student discussion and corroboration should be greatly encouraged at this point.
- Students record results.

Practice/Application

- Chart (attached)

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Name _____

DATA	
Skittle's Color	How many?

Probability:

If you were to close your eyes and reach into your bag, what is the probability of picking the following colored Skittle? (Describe probability as a fraction.)

Green _____ Yellow _____ Red _____

Orange _____ Purple _____ Blue _____

Which color are you most likely to pick? _____

Which color are you least likely to pick? _____

Which color is it impossible for you to pick? _____

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Comparing:

Work with a partner to answer the following questions.

1. Which one of you has a greater chance of picking a green Skittle? _____
2. Why? (explain) _____

_____

3. Which one of you has a lesser chance of picking a purple Skittle? _____
4. Why? (explain) _____

_____

5. Which one of you has a lesser chance of picking a red Skittle? _____
6. Why? (explain) _____

_____

7. Is there a color which you are as equally likely to pick? _____
8. Explain. _____

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