PRACTICE TASK: "THE MAGIC NUMBER!"

APPROXIMATE TIME: 1 Day

STANDARDS FOR MATHEMATICAL CONTENT

MCC.3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

MCC.3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

MCC.3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
6. Attend to precision.
8. Look for and express regularity in repeated reasoning.

ESSENTIAL QUESTIONS

- How can graphs be used to compare related data?
- How can data displayed in tables and graphs be used to inform?
- How can data displays be used to describe events?

MATERIALS

- Two Number Cubes
- Recording Sheet (below)
- Chart paper

GROUPING

3-4 players

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

PART I

1. Each player needs to pick a sum between 2 and 12 and write it at the top of their recording sheet. (below) This is your "magic" number. No two students in the group should choose the same number.
2. Players will take turns rolling the pair of number cubes. A total of 20 rolls will happen.
3. After each roll, each player will record the sum of the two dice on the recording sheet.
4. Each time a player's "magic number" is rolled, he or she gets a point. At the end of 20 turns, the player with the most points wins the game!
5. After the game, each group should complete the "After the Game" activities.

PART II

After the Game (Individual activity)…

1. On a piece of chart paper, create a bar graph for the results of the game as a group. ***Consider the sum only.***
2. On a piece of chart paper, create make a pictograph for the results of the game as a group. ***Consider the sum only.***
3. Write 3 questions that can be answered from your graph.
4. Ask your questions of other groups and discuss!

FORMATIVE ASSESSMENT QUESTIONS

1. What strategies are you using to help you add quickly and accurately?
2. What plan will you use to create your bar graph?
3. What should you consider when creating your pictograph?
4. What types of questions should you create for your classmates?
5. Is there a way you could use your data to create a line plot graph?

DIFFERENTIATION

Extension

- Have students repeat the activity and change the Magic Number. Explain why.
- Have students try to figure out a way to turn their graph into a line plot. Allow the students who were able to create line plots share their graph and strategies with their classmates.

Intervention

- Allow students to use dot dice instead of number cubes.
- Allow students to use number lines and manipulatives to help them add the numbers.
- Allow students to make graphs in small groups of with a partner.

The Magic Number!

My "Magic Number" is: _____

Roll	Digit on First Die	Digit on Second Die	Sum	Points
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				