MPS Learning Target: Statistics and Probability

- Conduct data investigations, interpret and summarize (e.g., mean, median, mode, range) data sets and displays (e.g., line plots, Venn diagrams), and make context-based conclusions and predictions.
- Describe the difference between theoretical and experimental probabilities, determine the likelihood and fairness of events, and explain why probabilities are represented as fractions and percents from 0 to 1.

1.) In a bag of marbles, 6 are red, 4 are blue, 2 are green and 2 are yellow. If a marble is taken from the bag, which color is it most likely to be?
   o Red
   o Blue
   o Green
   o Yellow

2.) The pie chart above shows the portion of time Pat spent on homework in each subject last week. If Pat spent 2 hours on mathematics, how many hours did Pat spend on homework altogether?
   o 4
   o 8
   o 12
   o 16
3.) Big Top Ice Cream Shop graphed the number of cones they sold in one day. Use the graph to answer the questions below.

A.) How many chocolate ice cream cones did they sell?

B.) What is the most popular flavor?

C.) How many more vanilla cones were sold than blue moon?

D.) The manager is using this graph to help place his next order. What decisions do you think he might make based on the data?

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4.) The nine chips shown above are placed in a sack and then mixed up. Madeline draws one chip from this sack. What is the probability that Madeline draws a chip with an even number?

- 1/9
- 2/9
- 4/9
- 4/5

5.) Your mom says you can get 3 fish to keep in an aquarium. You want to buy 3 different species so that they don’t eat each other. You can choose from these four species: goldfish, neon tetra, guppy, and minnow. How many possible combinations of fish are there?

Show how you solved this problem.

Answer __________________________
6a.) What is the probability of pulling a white marble from the jar?

Write your answer as a percent: ______________
Write your answer as a fraction: ______________

6b.) How could you change this game so that it would be equally likely to pull a white marble from the jar as it would be to pull a black marble from the jar? You may use words or pictures to explain your answer.

6c.) How could you design a game using the marbles in the jar so that you always win? You may use words or pictures to explain your answer.
7.) Using the figure above, which percent represents the income that Patrick put in his savings?

- 20%
- 40%
- 4%
- 65%

8a.) A survey was conducted to find out long fifth graders could hold their breath. Here is the data (in seconds). Use this data, create a line plot.

<table>
<thead>
<tr>
<th>Fifth Graders</th>
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<td>80 70 77 65 77 55 35 35 40 75 35</td>
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Show your line plot or bar graph.

8b.) Use your line plot, name the following:

- Mode  
- Median  
- Range  
9a.) Write a question that you can use to survey your classmates.

Question:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

9b.) Now conduct your survey. Remember to keep track of the results of your survey and organize your data. Then display your data in an easy to understand format to share with the class.