Mathematics Grade 6
Classroom Assessments Based on Standards  (MMP 8/06)

MPS Learning Targets: Statistics and Probability
- Interpret and summarize data sets and displays using measures of central tendency and variation (e.g., range), and evaluate hypotheses and multiple representations for a given data set.
- Gather and display data from experiments and analyze outcomes based on theoretical and experimental probabilities to determine likelihood and fairness of events and to solve problems.

1.) The prices of gasoline in a certain region are $1.41, $1.36, $1.57 and $1.45 per gallon. What is the median price per gallon for gasoline in this region?
   - $1.41
   - $1.43
   - $1.44
   - $1.45
   - $1.47

2.) The graph above shows how many of the 32 children in Mr. Selena’s class are 8, 9, 10, and 11 years old. Which of the following is true?
   - Most are younger than 9.
   - Most are younger than 10.
   - Most are 9 or older.
   - None of the above is true.

Developed by the Milwaukee Mathematics Partnership (MMP) with support by the National Science Foundation under Grant No. 0314898.
3.) The table above shows the scores of a group of 11 students on a history test. What is the average (mean) score of the group to the nearest whole number?

Answer ____________________________________

What is the median? _________________________

What is the mode? _________________________

What is the range? _________________________

4.) Which of the following numbers could not be a probability? Circle the number and then explain your answer.

\[
\begin{array}{ccccc}
\frac{1}{3} & 0 & \frac{8}{9} & 1 & \frac{5}{4} \\
\end{array}
\]

Explanation:

______________________________

______________________________

______________________________
5.) A lunch combo at Ted’s café consists of one sandwich, one vegetable and one cookie.

5a. What is the probability that a customer will order a combo that includes a chocolate chip cookie? Answer and Explain: ____________________________________________
_______________________________________________________________________

6.) Ron hates to decide what to wear. He made a spinner to help him pick his pants each day. Divide the spinner into the correct portions to make the following situation true.

- Ron is twice as likely to wear his blue pants as his tan pants.
- He will wear his black pants about ¼ of the time.
- About 50% of the time he will wear his blue pants.
7.) Tamara’s class made this line plot of the first letters in the first names of all the students in her class.

x x x x x x x x x x x x x x x x x x x x x x x x x x

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Letter

a.) If you randomly select a student from Tamara’s class, what is the probability you will choose someone whose first name begins with J?

Answer and Explain: ____________

b.) If you randomly select a student from Tamara’s class, what is the probability you will choose someone whose first name begins with a letter that occurs after F in the alphabet, but before T?

Answer and Explain: ____________

c.) If you randomly select a student from Tamara’s class, what is the probability that you will choose Tamara?

Answer and Explain: ____________

d.) Suppose two more people joined the class, Melvin and Theo. Now if you randomly select a student from the class, what is the probability you will choose someone whose first name begins with J?

Answer and Explain: ____________
8.)

300 people are walking through a maze. At each intersection the group separates equally to continue down the next path. They may not retrace their steps. Depending on which path they follow, they will end up in one room or another.

a.) About how many people would you expect to end up in Room A? __________

b.) About how many people would you expect to end up in Room B? __________

c.) What is the probability of someone ending up in Room A? ________________
9.) Create a bag containing 12 objects—such as blocks or marbles—of the same size and shape. Use three or four different colors.

a.) Describe the contents of your bag. __________________________________________

b.) Determine the theoretical probability of drawing each color in the bag.

   Color ___________________ probability of drawing it _____________________
   Color ___________________ probability of drawing it _____________________
   Color ___________________ probability of drawing it _____________________
   (4th optional) Color ______________ probability of drawing it _______________

c.) Conduct an experiment to determine the experimental probability of drawing each color. Carefully describe how you did your experiment and record your results.

   Description of experiment:
   __________________________________________
   __________________________________________
   __________________________________________

   Record of results:
   Color __________________ probability of drawing it _____________________
   Color __________________ probability of drawing it _____________________
   Color __________________ probability of drawing it _____________________
   (4th optional) Color ______________ probability of drawing it ________________

d.) How do the two types of probabilities that you found compare to each other?

   __________________________________________
   __________________________________________