# Mathematics Grade 6 Unit 10 – Rubric 1

**Grade/Subject/(Course)**
Grade 6 / Mathematics

**Course Version**

**Performance Assessment(s)**

## Mathematics Grade 6 Unit 10 PA 01

Analyze the problem situation(s) described below. Organize and record your work for each of the following tasks. Using precise mathematical language, justify and explain each solution process.

1. The track team at Cedar Brook Middle School runs after school five days per week. The track coach recorded the total miles ran per day by the track team for a month. The table below summarizes the miles that the coach recorded.

| | | | | |
|---|---|---|---|---|
| $4\frac{3}{4}$ | $5\frac{1}{2}$ | 6 | $5\frac{1}{4}$ | $3\frac{3}{4}$ |
| $7\frac{1}{2}$ | 5 | $6\frac{1}{4}$ | 7 | $5\frac{3}{4}$ |
| $6\frac{1}{4}$ | $7\frac{3}{4}$ | $5\frac{1}{2}$ | $8\frac{1}{2}$ | 3 |
| 4 | $8\frac{1}{2}$ | $6\frac{1}{4}$ | 3 | $7\frac{3}{4}$ |

   a. Represent the numeric data with a dot plot, histogram, and box plot.

   b. Summarize the data by identifying the:
      - Mean
      - Median
      - Mode
      - Range
      - Interquartile range (IQR)

   c. Use your graphical representations and numerical summaries of the data to describe the center, spread, and shape of the data distribution.

   d. How many days did the track team run for less than 4.5 miles?

   e. Describe whether this situation yields data with or without variability.

2. The track coach also recorded the number of miles that he ran per day over the same month. The stem-and-leaf plot below summarizes this data.

**Number of Miles Ran Each Day**

| STEM | LEAVES |
|---|---|
| 3 | 00 25 |
| 4 | 25 |
| 5 | 00 25 50 75 75 |
| 6 | 25 |
| 7 | 25 50 50 75 75 75 |
| 8 | 75 75 75 75 |
| 9 | 50 |

Key: 5 | 75 means 5.75

a. Summarize the numeric data by identifying the mean, median, mode, and range of the data distribution, if possible.

b. Explain why each of the summaries may not be possible to determine if data is represented in a dot plot, histogram, or box plot.

c. How many more days did the track coach run for 8.75 miles than he ran for 7.5 miles?

d. Describe whether this situation yields data with or without variability.

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Standard(s): **6.1A** , **6.1B** , **6.1C** , **6.1D** , **6.1E** , **6.1F** , **6.1G** , **6.12A** , **6.12B** , **6.12C** , **6.13A** , **6.13B**
ELPS **ELPS.c.1A** , **ELPS.c.1B** , **ELPS.c.1E** , **ELPS.c.2D** , **ELPS.c.4G** , **ELPS.c.4K** , **ELPS.c.5B** , **ELPS.c.5C** , **ELPS.c.5G**