

Middle School

Interpretation of Data and Graphs:

6th Grade:

Habits of Mind

S6CS1. Students will explore the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

- a. Understand the importance of—and keep—honest, clear, and accurate records in science.

S6CS3. Students will use computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Analyze scientific data by using, interpreting, and comparing numbers in several equivalent forms, such as integers and decimals.
- b. Use metric input units (such as seconds, meters, or grams per milliliter) of scientific calculations to determine the proper unit for expressing the answer.
- c. Address the relationship between accuracy and precision and the importance of each.
- d. Draw conclusions based on analyzed data.

S6CS4. Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities.

- a. Use appropriate technology to store and retrieve scientific information in topical, alphabetical, numerical, and keyword files, and create simple files.
- c. Read analog and digital meters on instruments used to make direct measurements of length, volume, weight, elapsed time, rates, and temperature, and choose appropriate units for reporting various quantities.

Seventh Grade:

S7CS3. Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Analyze scientific data by using, interpreting, and comparing numbers in several equivalent forms, such as integers, fractions, decimals, and percents.
- b. Use the mean, median, and mode to analyze a set of scientific data.
- c. Apply the metric system to a scientific investigation that includes metric to metric conversion. (i.e. centimeters to meters)
- d. Draw conclusions based on analyzed data.
- e. Decide what degree of precision is adequate, and round off appropriately.
- f. Address the relationship between accuracy and precision and the importance of each.

Eighth Grade:

S8CS3. Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.

- a. Analyze scientific data by using, interpreting, and comparing numbers in several equivalent forms, such as integers, fractions, decimals, and percents.
- b. Find the mean, median, and mode and use them to analyze a set of scientific data.
- c. Apply the metric system to scientific investigations that include metric to metric conversions (i.e., centimeters to meters).
- d. Decide what degree of precision is adequate, and round off appropriately.
- e. Address the relationship between accuracy and precision.
- f. Use ratios and proportions, including constant rates, in appropriate problems.

S8P4. Students will explore the wave nature of sound and electromagnetic radiation.

- d. Describe how the behavior of waves is affected by medium (such as air, water, solids).
- e. Relate the properties of sound to everyday experiences.
- f. Diagram the parts of the wave and explain how the parts are affected by changes in amplitude and pitch.