

## 6<sup>th</sup> Grade Study Guide

### The Work of Scientists Test

**Test date: Wednesday, November 16, 2016**

The test will consist of a mixture of questions including

- Multiple choice
- Fill in the blanks
- True/False – IF A STATEMENT IS FALSE Students will need to replace an underlined word with the word or words that would make the statement true.
- Short answer questions – STUDENTS NEED TO PRACTICE WRITING SKILLS BY USING COMPLETE SENTENCES AND USING THE QUESTION IN THEIR ANSWER (EXAMPLE: if the question ask “What is the name of the diagram shown above?” the student would want to answer like so “The name of the diagram shown above is...”)
- Be able to fill in a concept math on averages (mean, median and mode)
- Graph creation
- Short Essay questions to practice science writing skills and show application of critical thinking skills.

Students should prepare for the test by studying the following vocabulary terms, ideas, and concepts that we studied throughout the past three and a half weeks. Students should study from notes taken, homework completed, text book readings from Chapter 2, Section 1, 2 and 3, and mini graphing test.

Use the following guide to assist you in your studies.

**Measurement – A Common Language – Please study from the homework you have completed on question from section, along with your graphing mini test and any other work completed when practicing conversions. Study Chapter 1, Section one in text on pages 44-55**

- Know why scientists use a standard measurement system?
- Know what the SI units of measurement are for length, mass, volume, density, time, and temperature.
- Know how conversion factors are useful and how you can use them in converting units of measurement. See Page 45 for common SI Prefixes to help
- Know these key terms from the section
  - Metric system
  - SI → know that this is the standard unit of measurement
  - Mass
  - Weight
  - Volume – know how to calculate (volume = length x width x height)
  - Meniscus

- Density – know how to calculate (mass/volume)
- Know the common SI Prefix table on page 45
- Practice calculating density from page 52 and the practice problems.
- Use page 54-55 to help review how to convert between units.

**Mathematics and Science- Study Chapter 2, Section 2 in text pages 60-67 and the section assessment questions you completed for homework. Study our mini test as it has a lot on graphing and calculating mean, median, and mode.**

- Know what math skills scientists use in collecting data and making measurements (estimation, accuracy and precision, and significant figures)
- Know what math skills help scientists analyze their data (percent error, mean, median, and mode)
- Know these key terms
  - Estimate
  - Accuracy
  - Precision
  - Significant figures
  - Percent error
    - Percent error =  $\frac{\text{difference between experimental value and true value}}{\text{true value}} \times 100\%$
  - Mean
    - Mean =  $\frac{\text{sum of values}}{\text{total number of values}}$
  - Median
  - Mode
- **Be able to fill in the concept map on page 83 at the top of the page**

**Graphs in Science – Study Chapter 2, Section 3 in text pages 68-75. Study Graphing packet and all other graphing resources we have used and study in class.**

- Know what types of data line graphs can display.
- Know how you determine a line of best fit or the slope of a graph
- Know why line graphs are powerful tools in science.
- Know these key terms
  - Graph
  - Horizontal axis – x- axis – independent variable is graphed here
  - Vertical axis – y axis – dependent variable is graphed here
  - Origin
  - Coordinate
  - Data point
  - Line of best fit
  - Linear graph

- Slope → page 73 → slope =  $\frac{\text{rise}}{\text{run}} = \frac{Y_2 - Y_1}{X_2 - X_1}$
- Nonlinear graph

**\*\*\* Use Study Guide on page 82 as well as Review and Assessment on pages 83 -84 for additional studying resources**