

NAME: \_\_\_\_\_

CLASS: \_\_\_\_\_

DUE DATE: \_\_\_\_\_

## 8<sup>th</sup> GRADE SCIENCE FIRST SEMESTER EXAM STUDY GUIDE 2018-19

Questions are based on state standards covered during first semester.  
Textbook references are listed.

### Nature of Science Handbook in back of book (NH2 to NH11)

- SC.8.N.1.1: What are the elements that should be included in scientific investigation (inquiry)?  
What is a prediction?  
Explain independent variable, dependent variable, and constants.  
How many variables are changed in a controlled experiment?
- SC.8.N.1.2: Why should you perform repeated trials of your experiment?  
Why should other scientists replicate your experiment?
- SC.8.N.1.3: When you test your hypothesis, what does it mean when the “results support” your claim?  
What does it mean when the “results fail to support” your claim?
- SC.8.N.1.4: What should you do if your experiment results do not support your hypothesis?
- SC.8.N.1.5: How are the methods used in the different branches of science similar and different?
- SC.8.N.1.6: Explain the key elements of scientific investigations/inquiry including the following:  
Empirical evidence.  
Logical reasoning (objective vs subjective)  
Observations (qualitative vs quantitative)  
Inferencing  
Predicting  
Uses of scientific models
- SC.8.N.3.2: Explain when a scientific theory may be changed?

### Math Skill Handbook in back of book (MH2 to MH19)

- SC.8.N.1.1: What are the common SI Units used for measurement?  
What are the uses for line graphs, bar graphs, and circle graphs?

### CHAPTER 5.2

- SC.8.P.8.4: What is matter?  
What are physical properties of matter? How can they be used to classify/ compare substances?  
Which properties depend on the size of matter and which properties do not?

SC.8.P.8.2: What is the difference between mass and weight? How are mass and weight related?

SC.8.P.8.3: What is density?

How do we find the density of a material?

What is volume?

How do you measure the volume of regular and irregular shaped objects?

### **CHAPTER 5.1**

SC.8.P.8.1: What are the differences in particle motion, attraction forces, and energy in the three states of matter? (solids, liquids, and gases)

### **CHAPTER 6.2**

SC.8.P.8.7: What has caused the model of the atom and the Atomic Theory to change over time?

What are the two parts of an atom?

What are the three main subatomic particles?

Where are the particles located, and what are their properties?

### **CHAPTER 6.1**

SC.8.P.8.5: What is the difference between an element and a compound?

How do atoms combine to produce compounds?

### **CHAPTER 7.1**

SC.8.P.8.6: How are elements in the periodic table of elements arranged?

How is the periodic table helpful to chemists?

### **CHAPTER 9.3**

SC.8.P.8.8: What are some examples of compounds including acids, bases, and salts?

How do we compare and classify acids and bases?

### **CHAPTERS 9.1 & 9.2**

SC.8.P.8.9: What is the difference between a mixture and a pure substance?

What are some properties of different kinds of mixtures such as solutions?

### **CHAPTERS 5.3 & 5.4**

SC.8.P.9.1: What is the Law of Conservation of Mass/Matter?

How does this law apply to physical and chemical changes?

SC.8.P.9.2: What is the difference between a physical and chemical change?

What are some indicators (signs) of a chemical change?

SC.8.P.9.3: How does an increase or decrease in temperature (adding or removing energy) affect chemical changes/reactions?