


8th Grade Science Final Exam Study Guide

Directions: Fill in charts and blanks where appropriate. Draw when asked. Otherwise, use complete sentences with proper grammar.

Chemistry:

Define each of the following words or phrases and give an example:

| WORD | DEFINITION | EXAMPLE |
|-------------------------------------|---|---|
| Mass | <i>a measure of the amount of matter in an object</i> |  |
| Weight | | |
| Volume | | |
| Density | | |
| Physical change | | |
| Chemical change | | |
| Chemical Bond | | |
| Valence Electron | | |
| Law of Conservation of Mass | | |
| Law of Conservation of Energy | | |

Name: _____ Class: _____ Date: _____

1. What two properties of matter are needed to calculate density?
 - a. _____ and _____
 - b. What is the density of water? _____

2. If a substance has a mass of 35g and a volume of 350 ml, will it float in water?

| | |
|------------------------|----------------------------|
| <i>Show your work:</i> | <i>Circle: Yes (or) No</i> |
| | Why? |
| | _____ |
| | _____ |

3. Calculate the volume for 45 g of a metal that has a density of 9g/ml.

| |
|------------------------|
| <i>Show your work:</i> |
|------------------------|

4. How are mass and weight different? Name two things for each.

Mass: _____

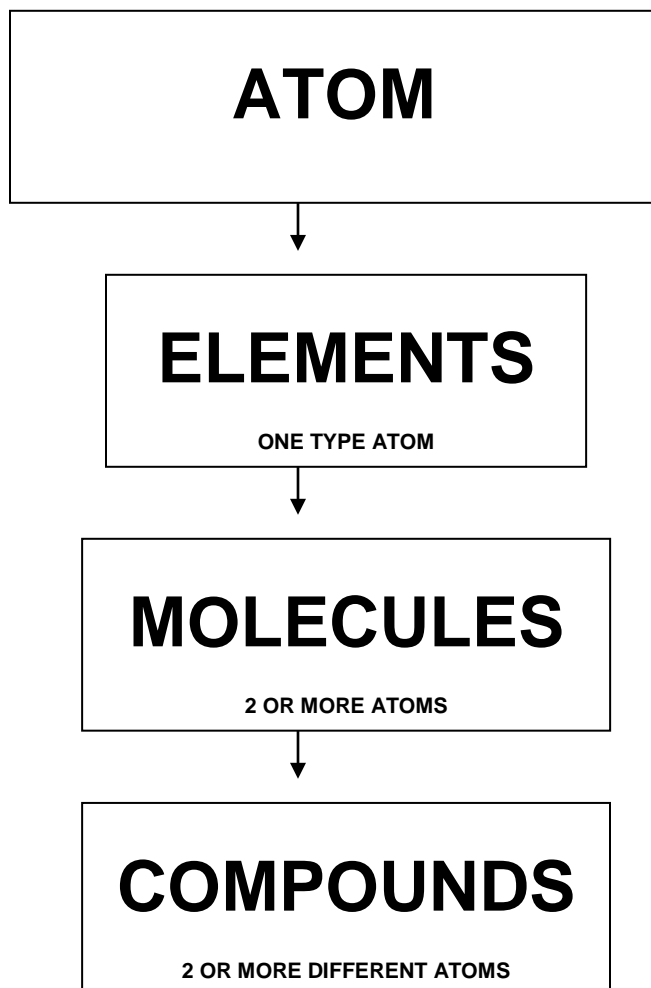
Weight: _____

Classify each of the following words or phrases as a physical or chemical change:

| Action | Physical or chemical change |
|--|------------------------------------|
| Melting | |
| Burning | |
| Conducting electricity | |
| Oxidation | |
| Bubbles when combining vinegar and baking soda | |

Name: _____ Class: _____ Date: _____

Graphic Organizer: nothing to add but this may help you organize these in your mind



| WORD | DEFINITION | EXAMPLES |
|----------|------------|----------|
| Atom | | |
| Element | | |
| Molecule | | |
| Compound | | |

Astronomy:

Define each of the following words or phrases and give an example:

| WORD | DEFINITION | EXAMPLE |
|--------------|------------|-------------------|
| Star | | |
| Universe | | ONLY ONE UNIVERSE |
| Galaxy | | |
| Solar system | | |
| Planet | | |
| Moon | | |
| Spring tide | | |
| Neap tide | | |
| Eclipse | | |

1. Define gravity and inertia and describe how they are involved in the formation of the planets.

Name: _____ Class: _____ Date: _____

2. On what does the gravity between 2 objects depend?

a. _____ and _____

3. How does gravity affect weight?

4. What is the difference between rotation and revolution?

Rotation: _____

Revolution: _____

5. Review phases of the moon. Draw **earth-moon-sun** diagrams of the following:

| | |
|--------------|------------------|
| a. New Moon | b. First Quarter |
| c. Full Moon | d. Third Quarter |

6. Draw **earth-moon-sun** diagrams of the following:

| | |
|----------------|--------------|
| a. Spring Tide | b. Neap Tide |
|----------------|--------------|

Earth Science:

Define each of the following words or phrases and give an example:

| WORD | DEFINITION | EXAMPLES |
|---------------|------------|----------|
| Weathering | | |
| Erosion | | |
| Deposition | | |
| Abrasion | | |
| Oxidation | | |
| Fossil | | |
| Index Fossils | | |

1. Describe how wind, water, ice, gravity, chemicals and climate can affect weathering, erosion and deposition.

Name: _____ Class: _____ Date: _____

2. What might speed up or slow down weathering, erosion and deposition.

3. What is differential weathering?

4. How is chemical weathering different from mechanical weathering? Give examples of each.

5. What are glaciers and how do they affect weathering, erosion and deposition?

6. Name and describe the two types of glaciers.

Name: _____ Class: _____ Date: _____

7. How does gravity affect the movement of glaciers?

8. How does the movement of glaciers affect landforms on the surface of the earth?

9. What evidence (glaciers, rock layers, landforms) show that the earth's surface has changed over time?

10. What are index fossils? How do index fossils help scientists determine the age of rocks?

11. Why do we use topographic maps? Explain the markings, symbols, contour lines, and index contours.

Name: _____ Class: _____ Date: _____

Genetics and Heredity:

Define each of the following words or phrases and give an example:

| WORD | DEFINITION | EXAMPLES |
|---------------|------------|----------|
| Heredity | | |
| Genes | | |
| Alleles | | |
| Chromosomes | | |
| Adaptation | | |
| Extinct(-ion) | | |
| Evolution | | |

1. What advantages do organisms that reproduce sexually have over organisms that reproduce asexually?

Name: _____ Class: _____ Date: _____

2. Why do sex cells have only $\frac{1}{2}$ the chromosomes of other cells?

3. Describe the process of natural selection.

4. What evidence supports evolution?

5. How are whale, bat, human and cat arms similar? What does that tell us about their ancestors?

6. Create a Punnett Square for a green pea plant (GG) is crossed with a green pea plant (Gg) yellow is the recessive color. What is the probability (%) the plant will be green? _____ Yellow? _____

| | |
|--|--|
| | |
| | |

Name: _____ Class: _____ Date: _____

Genetics and Heredity:

Complete the chart:

| | How are they similar? | How are they different? | How do they affect heredity? |
|----------------------------------|------------------------------|--------------------------------|-------------------------------------|
| Dominate trait & Recessive trait | | | |
| Heterozygote & Homozygote | | | |
| Genes & Chromosomes | | | |
| Sexual & Asexual reproduction | | | |

Name: _____ Class: _____ Date: _____

Physics: Define each of the following words about motion.

1. Mass _____

2. Push or Pull _____

3. Force _____

4. Inertia _____

5. Friction _____

6. Action and Reaction _____

| TERM | DEFINITION & FORMULA <i>(if applicable)</i> | EXAMPLE |
|-----------------|---|---------|
| Velocity | | |
| Speed | | |
| Acceleration | | |
| Motion | | |
| Reference point | | |

Name: _____ Class: _____ Date: _____

7. Which of the following best represents acceleration as presented on a graph?

- a. motion change vs. time
- b. distance change vs. time
- c. speed change vs. time
- d. velocity change vs. time

8. State Newton's 3 Laws of motion.

- a. _____

- b. _____

- c. _____

9. Which of the following would be a good reference point to describe the motion of a dog?

- a. the ground
- b. another dog
- c. a tree
- d. all of the above

10. An arrow is shot from a bow and travels 1800m meters in 4 seconds. What was its average speed?

Show your work.

11. A car is driving down the highway at an average speed of 55 miles per hour (mph). How far has it traveled after 1 ½ hours?

Show your work.