1. Oxygen and Hydrogen combine to form water. In the space to the right, draw an illustration of a water molecule. Additionally, identify water as any of the following that apply: an atom, an element, a molecule, and/or a compound. Explain your answer. S8P1a

2. What is the smallest particle of the element iron (Fe) that can still be classified as iron? S8P1a

3. Paper, glass, and iron are all made up of ____________. S8P1a.

4. A molecule is to a compound as an atom is to a(n) ________. S8P1a.

5. The diagram shows three containers of gas. Use the diagram to answer the questions below. S8P1a-b
   a. Which container(s) has atoms?
   b. Which container(s) has an element?
   c. Which container(s) has a pure substance?
   d. Which container(s) has molecules?
   e. Which container(s) has a mixture?
   f. Which container(s) has compounds?

6. Which of the following do and do not represent a compound: O₂, N₂O, CO₂, H₂, NaCl Explain your answer. S8P1b

7. A solution of saltwater sits in the sun for 6 days. After 6 days, only salt remains in the cup. Explain why this is an example of a mixture. S8P1b

8. Mud Water is which of the following: element, compound, mixture. Explain your answer. S8P1b

9. Which of the following does not belong: Air, Salt, Water, or Oxygen Explain. S8P1b
10. What are the substances on the Periodic Table and why are they classified together in a table? S8P1b

11. On the periodic table, sodium is represented by Na. Na is a _____________________. S8P1f

12. Each element in the periodic table is assigned an atomic number. What does the atomic number tell us about the element? S8P1f

13. On the Periodic Table, what does the number above each of the elements represent? S8P1f

14. In the chemical formula for Magnesium chloride, MgCl₂, what does the subscript 2 represent? S8P1f

15. What are metalloids? Identify all the metalloids from the Periodic Table. S8P2f.

16. Read the statements below about the Periodic Table. Identify which statements are true/false. If the statement is false, explain why it is false. S8P1f

   a. Each horizontal row of the table is called group.

   b. Each family represents the number of energy levels present in an atom of the element.

   c. The properties of an element can be predicted from its location on the table.

   d. The elements are arranged from left to right, up to down by decreasing atomic number.
Use the Periodic Table to the right to answer the following questions.

17. In which region of the table would nonmetals be found? S8P1f

18. In which region would the most reactive elements be found? S8P1f

19. In which region would the least reactive elements be found? S8P1f

20. What is true about metals which is not true about nonmetals? S8P1f

21. Define Mass. S8P1g

22. Define the Law of Conservation of Matter. S8P1g

23. The diagram illustrates an experiment where baking soda was added to a container of vinegar. After five minutes, the balloon on the top of the bottle started expanding. Explain what happened and how this experiment demonstrates the Law of Conservation of Matter. S8P1g.

24. The diagram to the right illustrates ____________. Explain your answer. S8P1g

25. Which model demonstrates the Law of Conservation of Matter? Explain your answer. S8P1g

26. An iron bar had a beginning mass of 150 grams. As the bar rusted, its mass increased. Explain why the mass of the iron bar increased. S8P1g.