ELEMENTS, COMPOUNDS and MIXTURES WEBQUEST

Part 1: ELEMENTS, COMPOUNDS and MIXTURES

http://www.chem.purdue.edu/gchelp/atoms/elements.html

What are the visual differences between elements, compounds and mixtures? Fill in the chart below using bullet points.

ELEMENTS	COMPOUNDS	MIXTURES

Part 2: MIXTURES vs COMPOUNDS

http://chemed.chem.purdue.edu/genchem/topicreview/bp/ch2/mixframe.html

(Hint: Scroll down the page)

1. What are some differences between mixtures and compounds?
2. How can cereal relate to mixtures and compounds?

PART 3: ELEMENT, COMPOUND OR MIXTURE?

http://www.funtrivia.com/playquiz/quiz148865110c980.html

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

PART 4: SOLUTIONS and MIXTURES

http://www.chem4kids.com/files/matter_solution.html

Is a heterogeneous mixture a solution? How do you know?
Define solute.
Define solvent.
What are the steps to making a solution?
Can anything change solutions? Be specific!
What is solubility?

Part 5: Element Overview

A. Now go to this link: http://chemistry.about.com/od/chemistryfaqs/f/element.htm

1. What is the definition of an element given on this page?
   _____
   _____

B. Now go to this link: http://education.jlab.org/qa/element.html and answer the questions below:

1. What is the definition of an element given on this page?_____
   _____

C. Now Click on the link for "What is the difference between atoms and elements? Or find the link: http://education.jlab.org/qa/atoms_and_elements.html Answer the questions below.

1. Define element _____
2. Define atom _____
3. Define molecule _____
4. Define compound _____

D. Find the link: http://www.chem4kids.com/files/elem_intro.html Read the page and answer the questions below.

1. How many atoms are in our bodies? _____
2. How many different elements are in our bodies? _____
3. Name the 6 elements that make up 95% of our bodies. _____.

E. **Read the questions below and then go to this YouTube video link: https://www.youtube.com/watch?v=I_hF9zq4QXU. As you watch the video, answer the questions below.**
(*Note: this video is a 10-minute excerpt from Carl Sagan's hour-long video Life of the Stars, Episode 9)*

1. What element is the red blob of atoms on the screen? _____
2. How many natural elements are there? _____

3. An element is an arrangement of atoms in a particular way True False
4. The simplest element is _____.
5. The most complex element is _____
6. What number element is uranium? _____
7. Name 3 elements that make up the Earth _____, _____, and _____
8. Name 3 elements that are essential for life _____, _____, _____
9. The most familiar elements are typically the most _____ elements.
10. When was the neutron discovered? _____
11. Three units put together in different patterns essentially make _____.
12. A neutron is electrically _____.
13. A proton has a _____ charge that is _____ to the negative electrical charge of an electron.
14. Atoms are electrically neutral because there are an equal number of _____ in the nucleus and _____ in the cloud around the nucleus.
15. The chemical nature of an atom depends only on the number of _____.
16. The number of electrons equals the number of protons which equals the _____ number.
17. If you are an atom with just one proton, you are _____.
18. How many protons does Helium have? _____ Lithium? _____ Uranium? _____
19. What force holds the atomic nucleus together and prevents the protons from flying away from each other? _____
20. A lump of 2 protons and 2 neutrons forms the nucleus for which very stable element? _____
21. How many helium nuclei lumped together make carbon? _____
22. The universe is 99.9% made up of which 2 elements? _____ and _____

This video cuts off before Carl Sagan is able to say that the temperatures hot enough for nuclear forces to take place are found in the stars.

Part 6 – Molecules and Compounds

A. Find the link: http://education.jlab.org/qa/compound.html **and answer the questions below.**

1. What is formed when two or more atoms join together chemically? _____
2. What is formed when two or more ***different*** kinds of atoms or elements join together chemically? _____
3. A _____ is always a molecule, but a _____ is not always a compound.
4. Provide the chemical symbol for three molecules that are not compounds: _____, _____, and _____.
5. Name 3 common compounds, using both their chemical symbol and their name: _____, _____, and _____
6. One molecule of water contains _____ hydrogen atoms and _____ oxygen atom.
7. One molecule of carbon dioxide contains _____ carbon atom and _____ oxygen atoms.