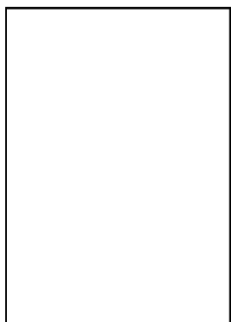


1. On the diagram here, where is heat added or removed? Find one location where heat would be added, and one location where heat would be removed.

Label the diagram with the words for changes of state.

2. Draw how the particles are spaced and moving in a solid, liquid and a gas.



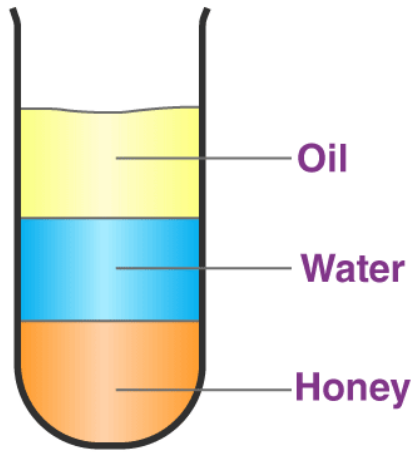
Solid



Liquid



Gas



3. If the water has a density of 1.0 g/mL would the honey have a density of 1.3 g/mL or 0.8 g/mL?

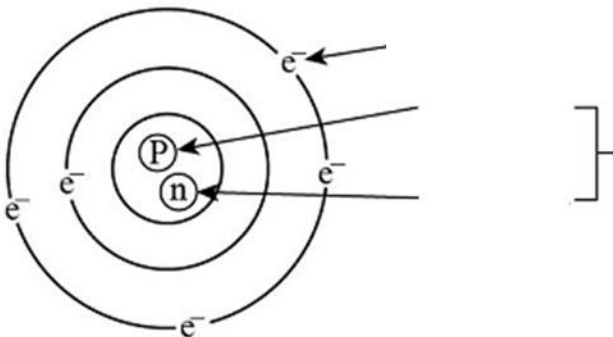
Calculate the density of an object that weighs 124g and has a volume of 54 mL. Write down your density calculations here. Don't forget units!

4. The number above each element is called the _____. It represents the number of _____ and also _____ in a neutral atom.

The number of neutrons and protons together is called _____.

Thinking question: Is it possible to have add a new element between carbon and nitrogen? Explain your answer.

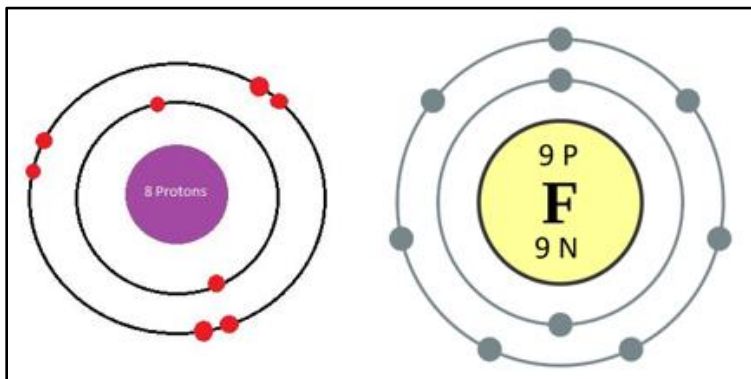
5. Label the atom picture below. Include any charges on the subatomic particles.



6. As scientists learned more about the atom, one particle was placed outside the nucleus. What particle is that?

7. Here are two Bohr diagrams retrieved from various online sources. The first is of oxygen and the second is of fluorine. Both have mistakes in them... maybe more than one mistake.

Redraw both Bohr diagrams correctly here:



8. Draw the Bohr diagram for an ion of Magnesium. Include the overall charge on the ion.

What is the definition of an ion?

9. What is the difference between a physical and chemical change? List 2 examples of both.

What is evidence that a chemical change has occurred? List four!

10. An experiment is asking to weight some metal pieces and then note their colour and texture. Which part of this experiment would collect qualitative data and which part would collect quantitative data?