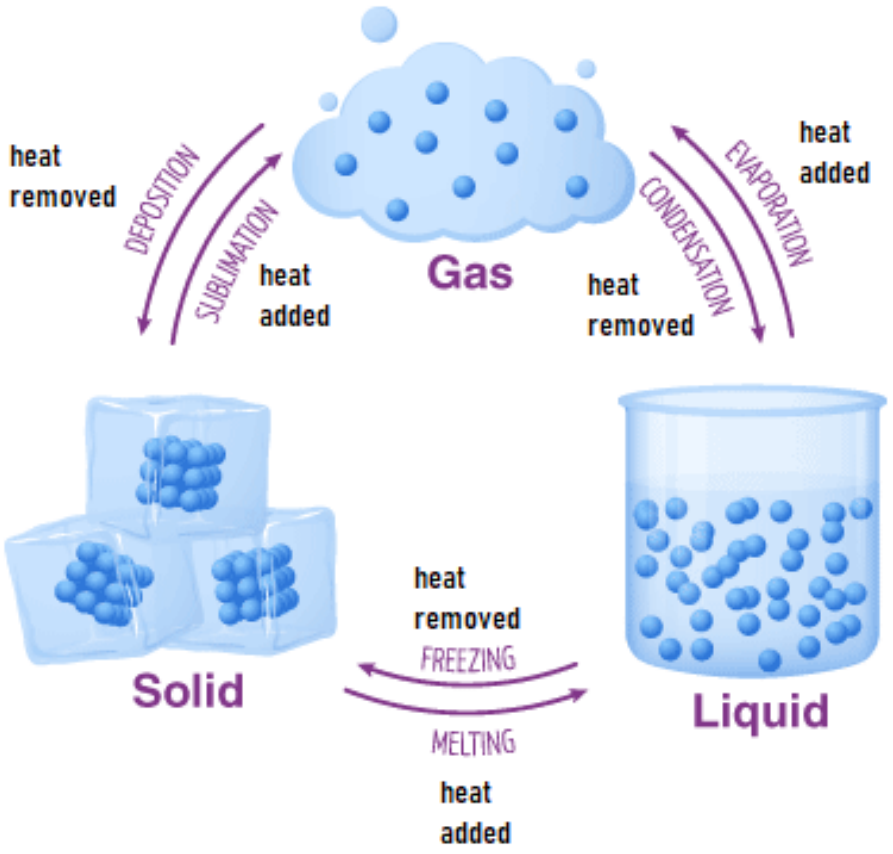
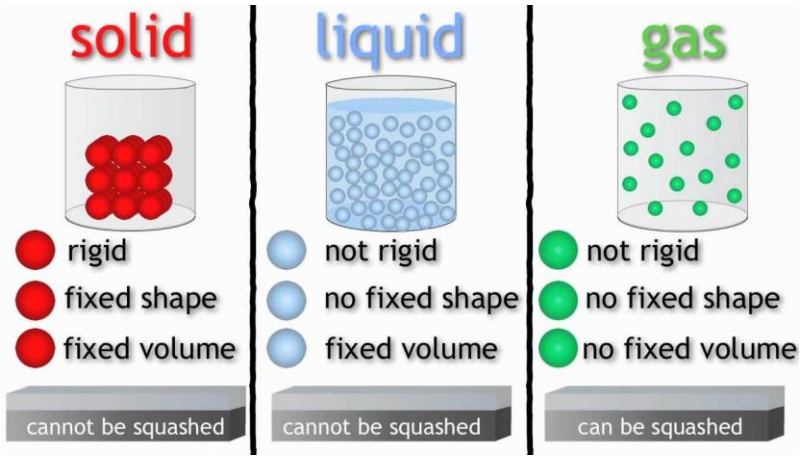
Science 8 Chemistry unit test review ANSWERS **Name: _____**

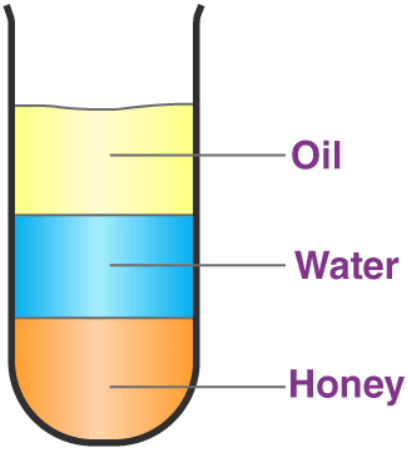


1. On the diagram here, where is heat added heat added or removed? Find one location where heat would be added, and one location where heat would be removed.

   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.





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?
   It would have a density of 1.3 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!

   Density = mass / volume

   Density = 124g / 54mL

   = 2.2962963…. but that is too long. So round to one or two decimal places
   = 2.30g/mL

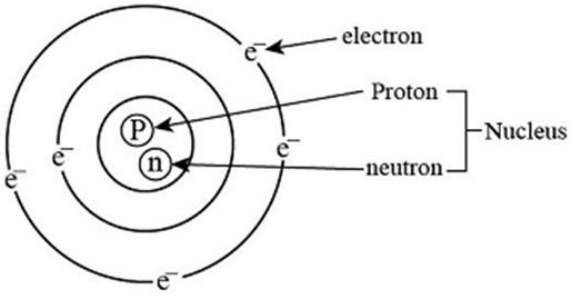
4. The number above each element is called the atomic number. It represents the number of protons and also electrons in a neutral atom.

   The number of neutrons and protons together is called atomic mass.

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

   No it is not. Because protons only come in whole numbers, it is not possible to add another whole number of protons between element 6 (carbon) and element 7 (nitrogen).

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

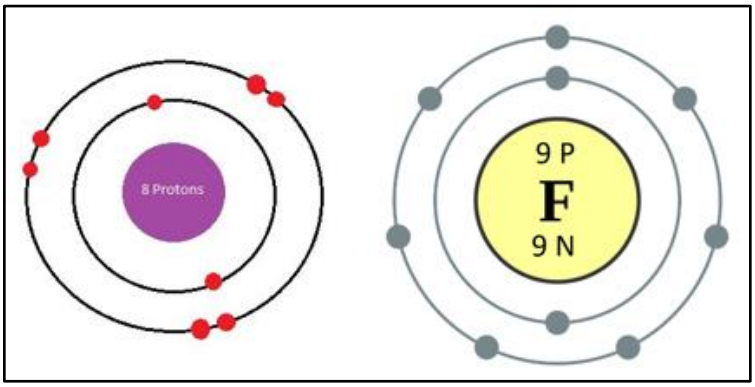


Protons are positive (+1)
Electrons are negative (-1)
Neutrons are neutral (0)

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

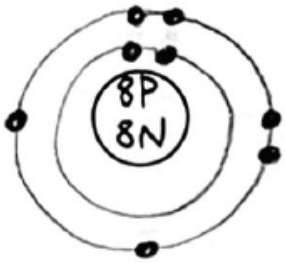
The electron was placed outside the nucleus.

7. Here are two Bohr diagrams retried 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.

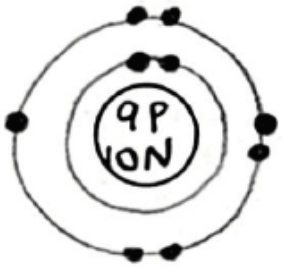


Redraw both Bohr diagrams correctly here:

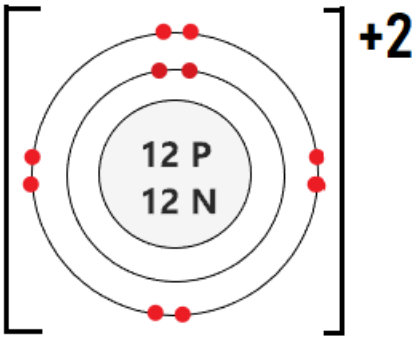
Oxygen:



Fluorine:



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



What is the definition of an ion?

An ion is an atom that has either gained or lost electrons. It has a positive or negative charge overall.

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

In a physical change, no new material are created. In a chemical change, new materials are created.

Here are some examples of both:
Physical change
- Ripping paper
- Melting ice into water
- Chopping wood
- Plus many others

Chemical change
- Fireworks
- Cooking

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

Temperature change
Light created
Sound
Explosion
Fire
Bubbles created
Colour change
… and others

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?

Quantitative: the mass of the metal pieces (in grams or kg)

Qualitative: recording the colour and texture of the metal pieces.