

Characteristics of Science Reference Sheet

List the 6 Steps of the Scientific Method below:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Variables in a controlled experiment

Independent-

Dependent-

Control-

Skills of a Scientist

Mean-

Median-

Mode-

Range-

Measurement

Mass

Basic Unit-

Tool-

Volume

Basic Unit-

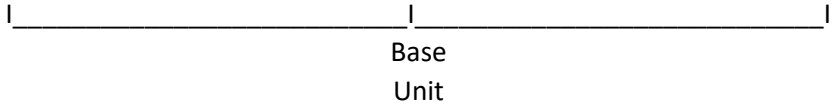
Tool-

Length

Basic Unit-

Tool-

Metric Ladder with abbreviations and numerical values



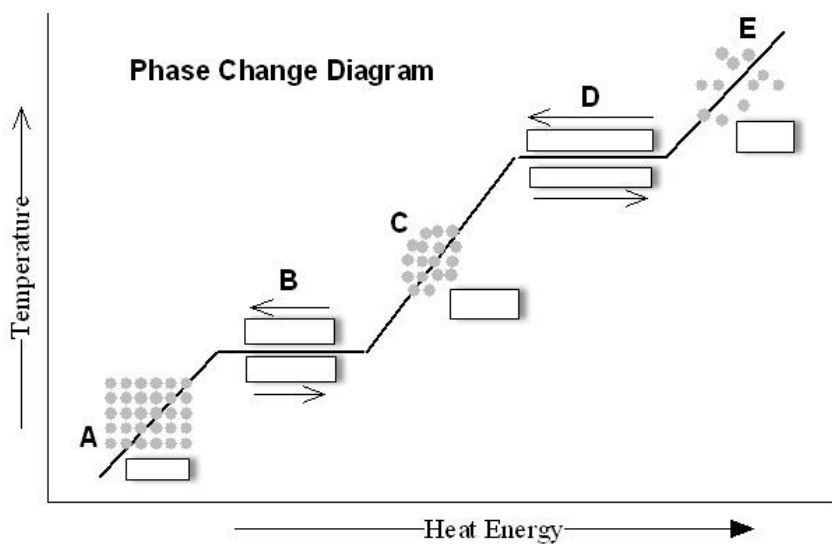
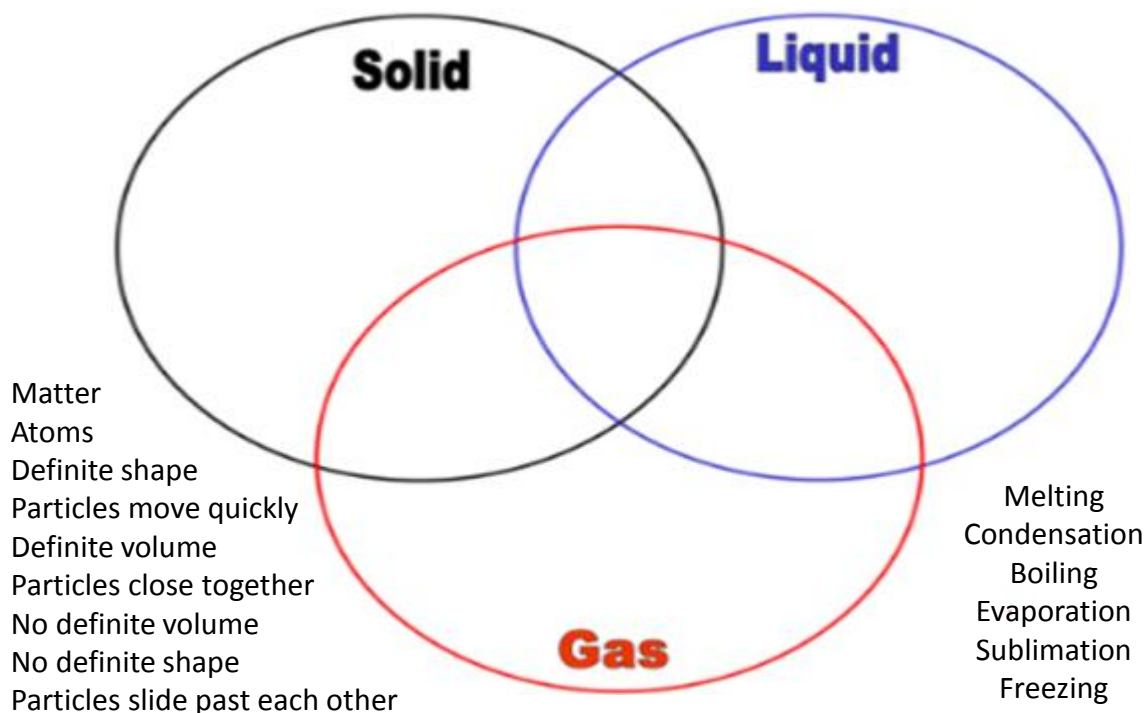
Types of Graphs

Line- _____

Bar- _____

Circle- _____

S8P1 Reference Sheet



- Which state of matter has highest density?
- Which state of matter has greatest energy?
- Which state has the particles the farthest apart?
- In which 2 changes of states do the particle move towards each other?
- In which 2 changes of state do they mover farther apart?

Fill in with electron, proton, and neutron:

Subatomic particle	Charge	Mass	location

Define Element:

Define Compound:

Define Mixture:

Physical & Chemical Change

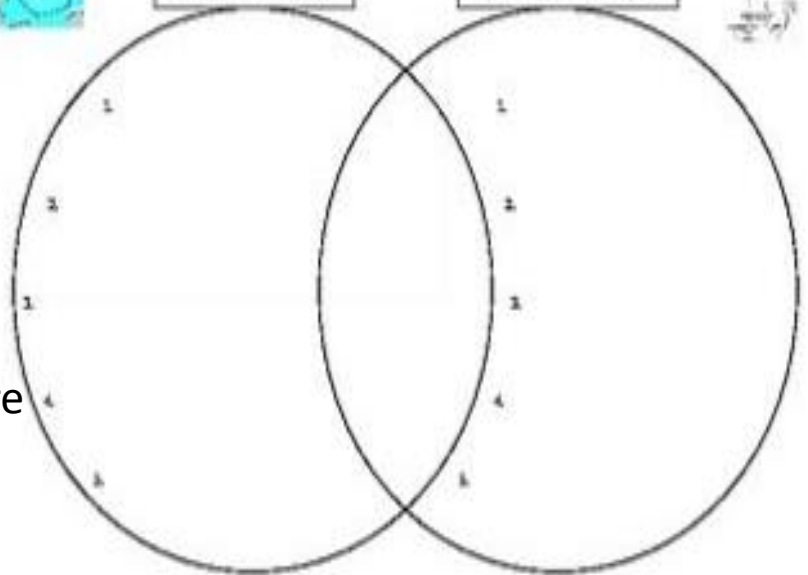
Place in Venn diagram

- Easily reversed
- New product formed
- State change
- Gas produced
- Reaction
- Dissolving
- Increasing temperature
- No new substance
- What it looks like
- Combustibility

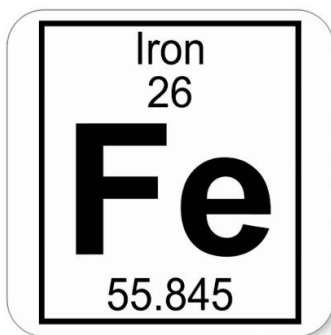
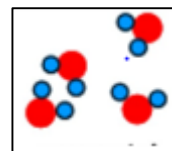
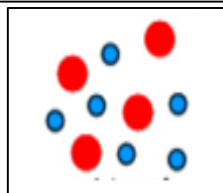
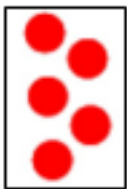


Physical Change

Chemical Change



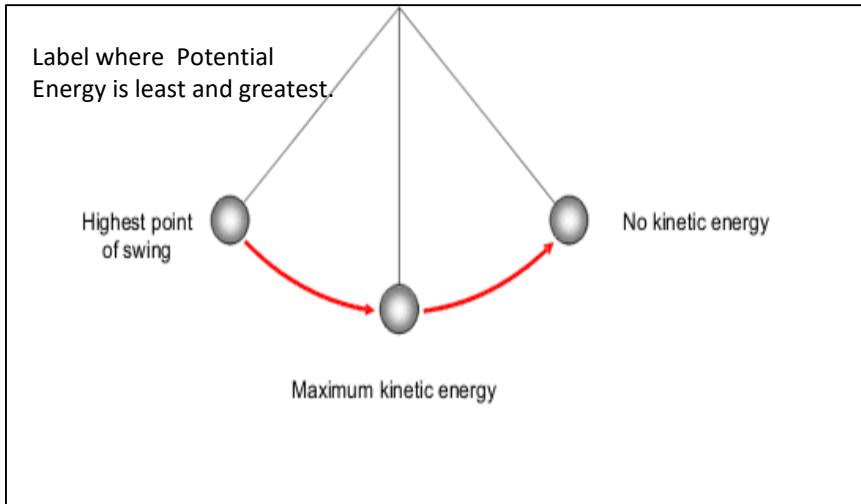
Is it a compound, element or mixture?



- What is the atomic number of this element?
- What does the atomic number represent?
- What is the atomic mass of this element?
- What does the atomic mass represent?
- How do you know the number of electrons in a neutrally charged atom?
- How do you calculate the number of neutrons?

S8P2 Reference Sheet

Label what type of energy is present with each example:



Sunlight-

Bonds in compounds-

Energy in protons and neutrons

Energy in electrons

Spinning turbine-

Fossil fuels-

Define:

Energy –

Work –

Conductor – (give example)

Insulator – (give example)

Temperature

Potential energy is _____
 PE increases as _____ and _____
 increase
 Kinetic energy is _____
 KE increases as _____ and _____
 increase

Heat Transfers from _____ to _____

Please label the drawing as to what type of heat transfer they represent

Figure 2--Conduction, Convection, and Radiation

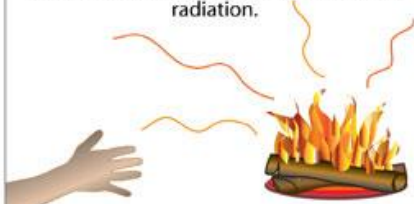
Energy is transferred by direct contact.



Energy is transferred by the mass motion of molecules.



Energy is transferred by electromagnetic radiation.



Write the Law of Conservation of Energy and the Law of the Conservations of Matter

Reference Sheet: Force & Motion

Define force –

• Balanced =

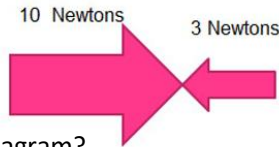
• Unbalanced =

SI Unit for force is _____

Define Speed –

Define Velocity -

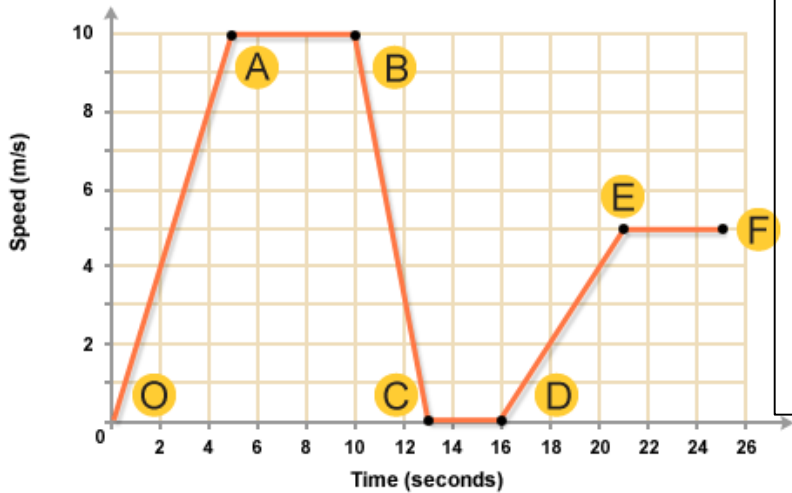
Define Acceleration-



What is the net force for each diagram?

_____ Newtons

_____ Newtons



Explain what is happening in each line segment.

- OA
- AB
- BC
- CD
- DE
- EF

Tell the speed at each point in the graph above.

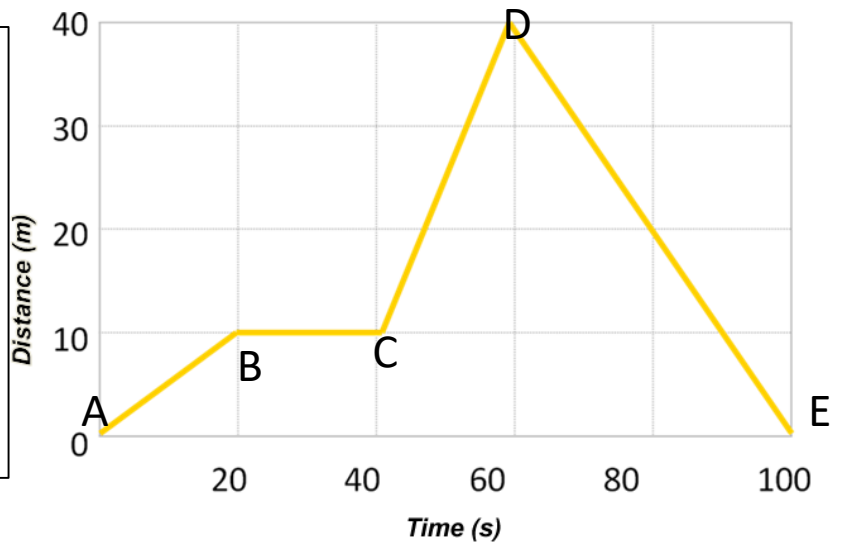
- 0-
- A-
- B-
- C-
- D-
- E-
- F-

Tell the speed at each point in the graph below.

- A-
- B-
- C-
- D-
- E-

Explain what is happening in each line segment.

- AB
- BC
- CD
- DE
- EF



List Newton's Three Law – Tell what each law states and give 2 examples demonstrating each law.

- 1.
- 2.
- 3.

S8P4 – Reference

Sheet

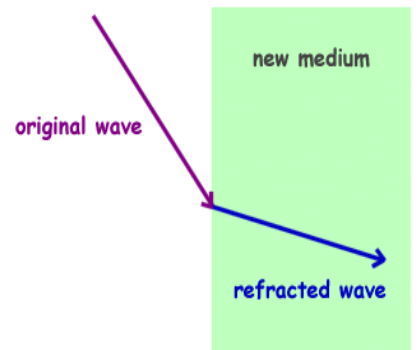
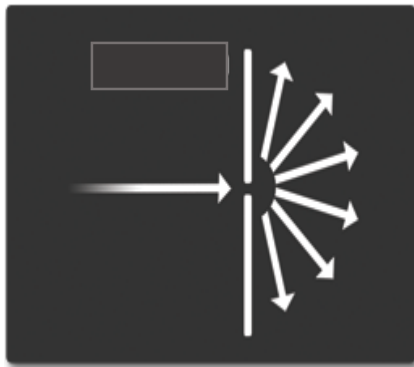
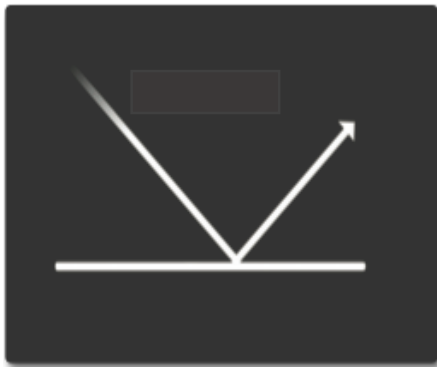
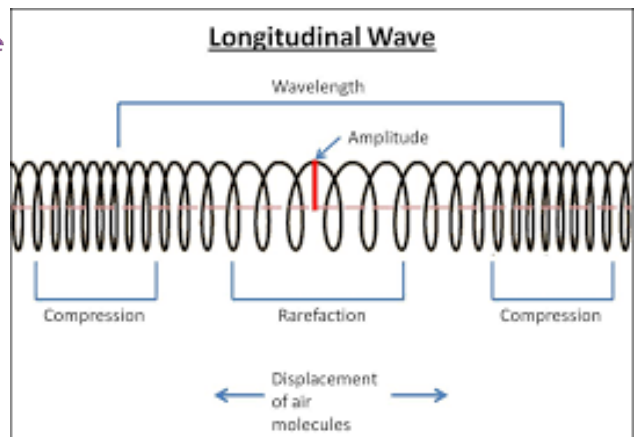
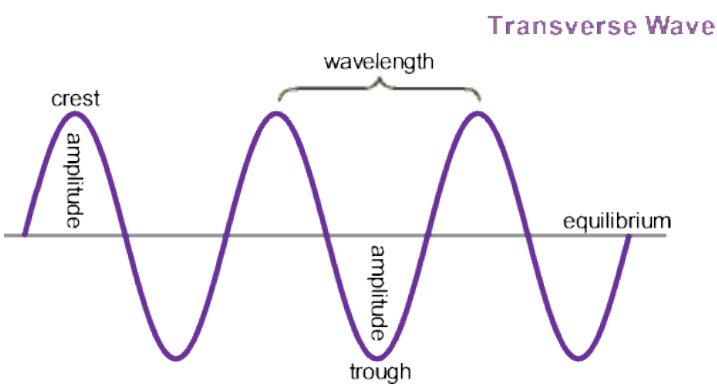
Waves transmit _____

_____ Waves
Requires a medium

_____ Waves
Do not require a medium

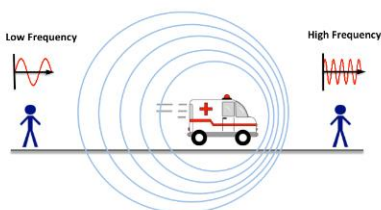
Sound waves

Water waves



Label and explain each picture

Doppler Effect



Which type of wave can travel in outer space? _____

List EM waves from Longest to shortest
Wavelength

List EM waves from lowest to highest
Frequency

Sound – travels as what kind of wave? _____

Sound travels faster through _____

Pitch is controlled by _____

Volume is controlled by _____

Light travels faster through _____

We see light because it is _____

Explain why we see the following colors

- Orange
- White
- Black

Label and explain transparent, opaque, and translucent.



S8P5 Reference Sheet

Electricity & Magnetism

Draw the magnetic field lines around the magnet.



What happens when a magnet breaks in half?

What is a magnet?

What cause magnetism?

Like poles will _____

Unlike (Opposite) poles will _____

Name three ferromagnetic materials

- 1.
- 2.
- 3.

What is electricity?

What are the three ways charges can move from one object to another?

- 1.
- 2.
- 3.

How does something become positively charged?

How does something become negatively charged?

Draw and label an electromagnet.

How can you make it stronger?

- 1.
- 2.
- 3.

What device uses an electromagnet to convert electrical energy into mechanical energy?

Mechanical energy into electrical?

Define and give three examples:

Conductor-

Insulator-

Compare and contrast electricity, magnetism and gravity.
Use the back if you need more room.

Similarities-

Differences-