WHMIS Stands for:

GHS stands for:

1. Pictograms (see handout)
   Graphic images that show the user of a hazardous product and what ________________ is present. Most are surrounded by a ________________.

2. Labels
   Suppliers are responsible for placing this on the container. Must have:
   Product identifier   Hazard statement(s)
   Initial Supplier Identifier    Precautionary statement(s)
   Pictogram(s)    Supplemental label information.
   Signal word

3. SDS (formerly MSDS) stands for:
   Provides ________________ about the chemicals being used such as:
   melting point, boiling point, ________________, possible reactions, risk phrases, safe-handling procedures, etc.

3. Symbols – See Handout

**Importance of Chemistry**
There are several reasons that chemistry has been studied over the years. Here are just a few.

1. Helps ________________ the world around you.
   (why are ________________ and why do they change colour? How does ________________ work?)
2. Helps to read and understand ________________ . Keeps you ________________ !
3. Helps you to make ________________ .
4. Chemistry is heavily involved in things such as ________________ .
5. Helps you to stay ________________ …
6. There are several ________________ in chemistry.

**Physical and Chemical Changes**

*Chemical Change* – change that results in formation of a new ________________ .

Temperature, colour, odour, precipitate, bubbling

• ________________
• ________________
• ________________

*Physical Change* – ________________ molecules but doesn’t change the ________________ .

Texture, Colour, Temperature, Shape, Change of State.

• ________________
• ________________
• ________________
**Physical or Chemical Change?**

a. Freezing liquid mercury  
b. Adding blue and yellow to make green  
c. Dropping an orange into hydrochloric acid  
d. Filling a balloon with air  
e. Shattering glass with a baseball  
f. Fireworks exploding  
g. Cooking eggs  
h. Scratching a car with a key  
i. MacBook falling out of a car window  
j. Making a sand castle  
k. Cutting diamonds

Chemical and Physical changes can be difficult to distinguish.  
Some reactions are _______________________________ (ie. Pencil breaking) whereas others are  
_______________________ (ie. Electrolysis of water)

Sugar and water – __________________________change as sugar stays bonded.  
Salt and water – __________________________ as salt dissociates in water (breaks into ions), but will  
________________________ once water evaporates.

**Reactants and Products**  
Reactants – this is the substance(s) that are present ________________ the chemical reaction takes  
place. (typically to the ______________________________)  
Products – this is the substance(s) that are present at the _________________ of the chemical  
reaction. (typically to the ______________________________)

**Endothermic and Exothermic**  
Exothermic – ___________________________ in the forms of heat, light, or sound.  
example:  
Endothermic – need to _________________ in order to proceed. A temperature _________  
is seen.  
example:  
The majority of reactions are _______________________________.

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**Activation Energy Curves**

Exothermic

- **reaction progress**
- **Activation Energy**
- **Reactants**
- **Products**
- **Energy Level**

Endothermic

- **reaction progress**
- **Activation Energy**
- **Reactants**
- **Products**
- **Energy Level**

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