

Date: 10/9/20.....

Introduction to labs

Success criteria: Can you...	Done	Revised
Follow the laboratory safety rules		
Know the names of common hazard symbols		
Name and draw common laboratory apparatus		
Measure and know the units for temperature, volumes and time		
Use a Bunsen burner		
Carry out a fair-test investigation safely		
Skill: Work safely and independently to set up a Bunsen burner and light it		
Skill: Draw and name common laboratories equipment		

Hazard symbols

Name: _____

Date: _____

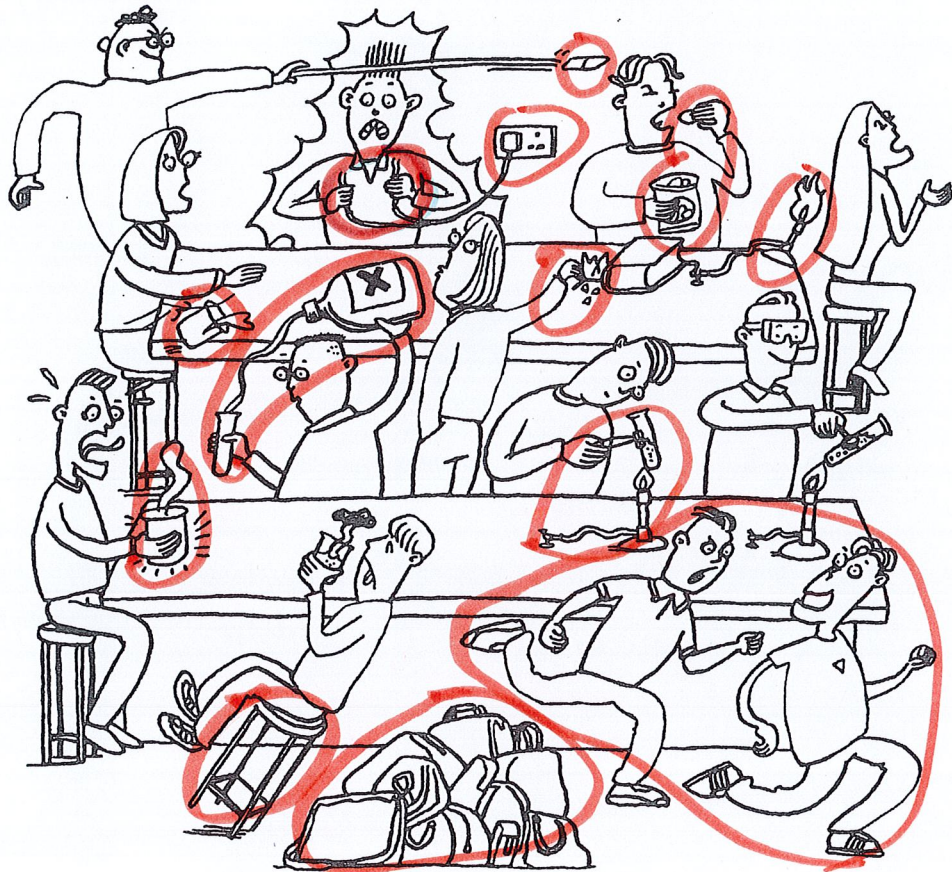
Match up the symbol and its name by colouring the squares in the same colour. Many of the things we use at home have safety symbols on them, see if you can find any of these symbols. Write down the name of a substance in the box next to the symbol that shows that symbol.

	Toxic	Copper sulphate
	Harmful or Irritant	concentrated hydrochloric acid
	Corrosive	chlorine
	Highly flammable	ethanol polish

Hazard symbols

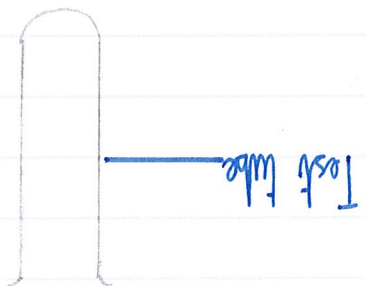
13/07/2016

Can you spot the hazards?

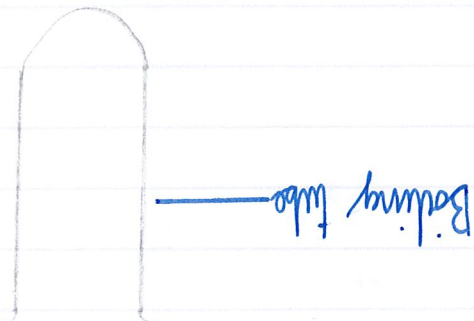


Friday 18th September 2020

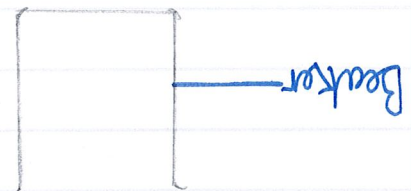
Drawing equipment



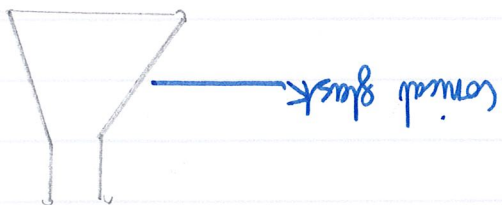
Test tube



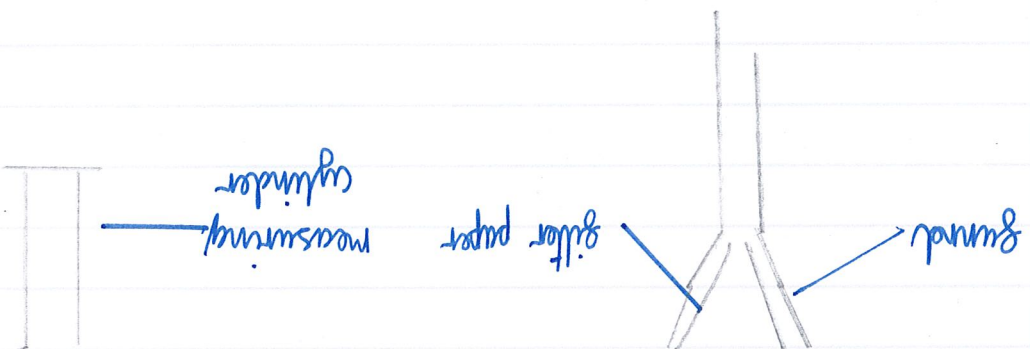
Boiling tube



Beaker



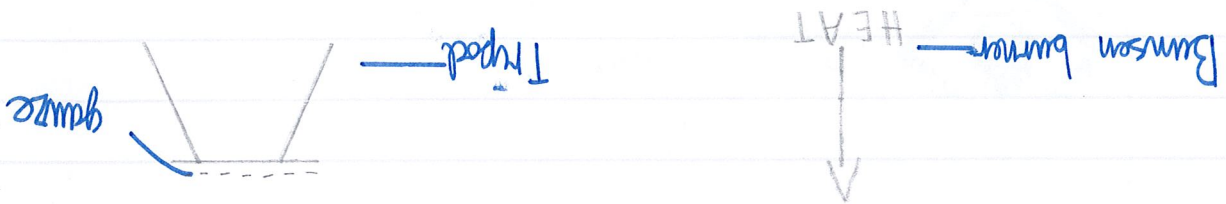
Conical flask



measuring cylinder

filter paper

funnel



Bunsen burner

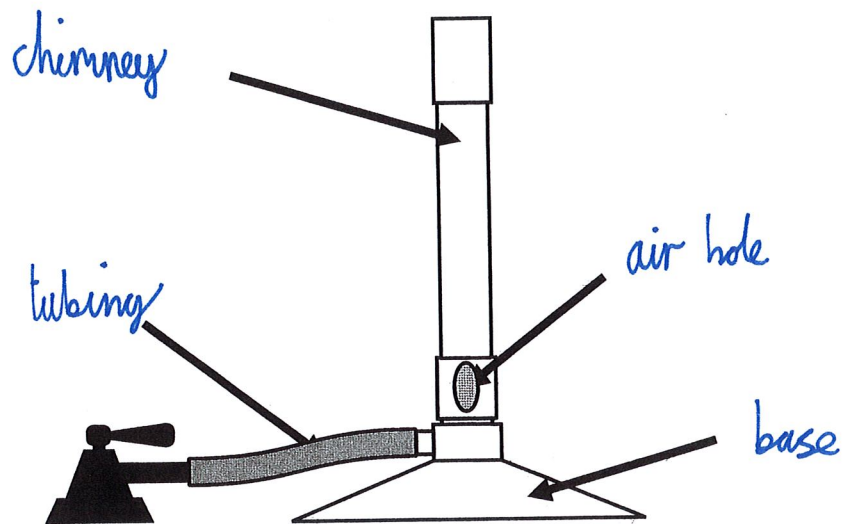
HEAT

Tripod

gauze

Friday 2nd October 2020

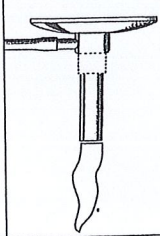
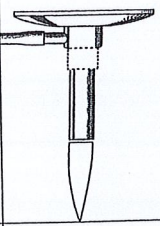
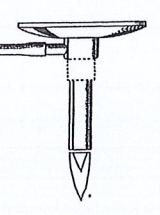
The Bunsen burner



Looking at the Bunsen burner

Name: _____

Date: _____

Flame	Picture	Air hole	Colour/Sound	What would you use this type of flame for?
Safety		closed	the flame is yellow and makes a gentle hiss	When you aren't using the Bunsen burner
Medium		half open	The flame is pale blue and quiet	heating things with gentle heat
Roaring		fully open	The flame is dark blue and makes a loud roar	heating things at high temperatures

Colour the flames on the Bunsen burners to show their correct colour

Draw these air holes onto the right Bunsen burner



fully open



closed

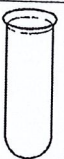
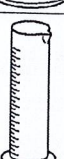
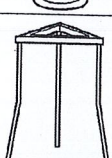
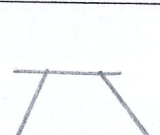
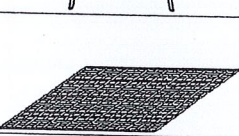
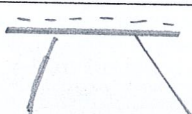
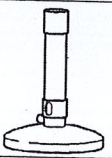
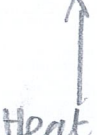
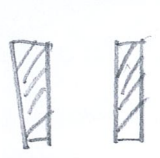


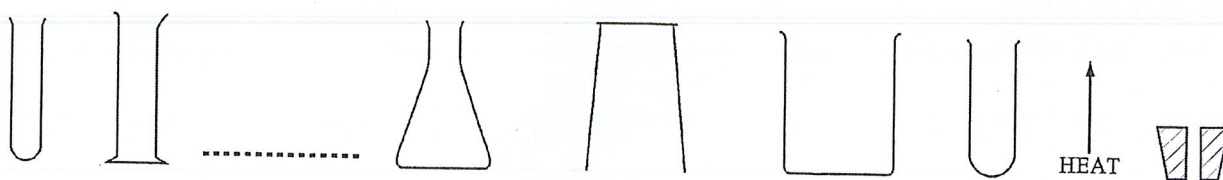
half open

Drawing apparatus

Usually in science we draw **diagrams** of apparatus rather than pictures. Diagrams are easier to draw, and make it easier to see how the apparatus is joined together.

Imagine that you could cut the apparatus in half. You draw what you would see when you look at the edge – this is called a **cross-section** diagram.

Apparatus	Name	Diagram	What it is used for
	Test tube		Storing or mixing solids and liquids
	Boiling tube		Heating solids and liquids
	Beaker		Holding liquids or solids
	Conical flask (i.e. cone-shaped)		Holding and mixing liquids
	Measuring cylinder		Measuring volumes of liquid
	Tripod		Heating a beaker, flask or crucible over a Bunsen burner
	Gauze		Supporting a beaker or flask and spreading the heat from the flame
	Bunsen burner		Heating things
	Rubber bung with a hole		The hole is so that a tube or thermometer can be put into the liquid without any gases escaping



8/10/20

Measuring equipment

Stopwatch - Time

Units - Sec min

Measuring cylinder - volume

units - cm^3



- Meniscus - bottom
- eye level

Scientific key words



Date: _____

Name: _____

Match up the word with its definition by colouring the squares in the same colour.

Precision	How close a measurement is to its true value	✓
Accuracy	The variable that you measure, its plotted on the y-axis of a graph	✓
Reliability	An investigation where only one independent variable is changed, the rest are kept the same	✓
Independent variable	Results that are obtained from a fair test and can be repeated by someone else	✓
Dependent variable	How small a measurement is	✓
Fair test	The variable you change, its plotted on the x-axis of a graph	✓
Validity	Repeating your measurements and getting similar results	✓

9/10/20

Investigating ice pack

Aim: To find the amount of potassium nitrate that makes the coldest ice pack.

Method:

1. Put 10cm^3 of water in a boiling tube.
2. Put a spatulagul of potassium nitrate into the water
3. Stir
4. Measure the temperature
5. Repeat with 2 then 3 spatulaguls

~~Indepent~~ Independent Variable

Amount of potassium Nitrate

Dependent variable

~~The same amount of water~~ Temperature

Controls

The same amount of water

Same temperature of water

Results

Amount	1	2	3				
	1 scoop	2 scoops	3 scoops				
Temperature	18°C	15°C	14°C				

Ice packs results

15/10/20

Potassium nitrate / spatula	1	2	3
Temperature / °C	18	17	17

These results have the same temperature for 2 and 3 spatulas. The reasons for this might be:

- The solid may not have been mixed fully.
- Not enough water - so fully dissolve
- Not read the thermometer
- Spatulas are not accurate at measuring solids
- Different Difference in the temperature of water - didn't measure before adding the solid.

We have carried out an **evaluation** of the Method to find **improvements**. Results that don't fit a pattern or trend are called **anomalous** - they are odd.

16/10/20

Improved method

An improvement would ~~by~~ be to weigh the solid using a balance.

New results

Potassium nitrate / g	Temperature / °C
1	18
2	17
3	16
4	15
5	14

Graph

