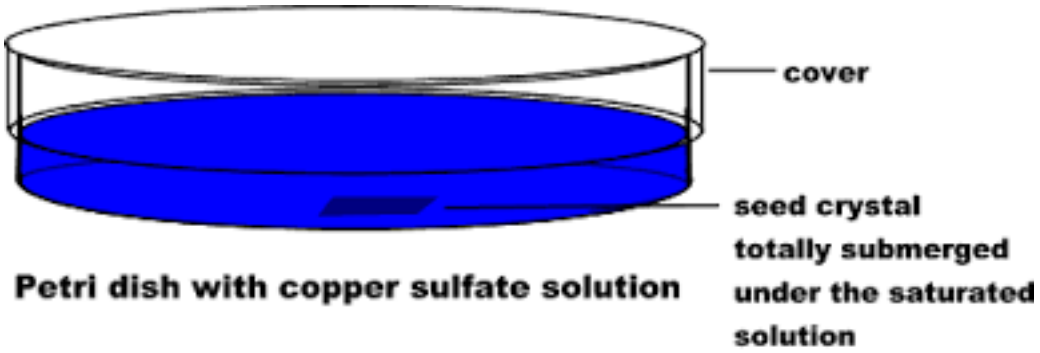
Working Scientifically 2: Growing Crystals

The aim is to see that different minerals form different shaped crystals. The data you collect in this investigation will be written up and handed in as a report.

Materials:
Petri dishes, dropping pipette, labels, seed crystals, supersaturated solution of copper sulfate, sodium chloride, alum (aluminium sulfate), microscope, hand lens.

Due date: _____ (Allow 2 weeks for the crystals to grow)



Procedure:

1 ½ fill a petri dish with one of the supersaturated solutions provided. Label it with the name of the solution and your initials. Repeat this with the other solutions.

2 Place a seed crystal on graph paper and take a photo. Save this photo as you will need this to compare your final crystal.

3 Leave the petri dish in a safe, protected warm place where it can cool slowly. You will need to look at the shapes of the crystals forming for each of the solutions and compare them with each other.

4 Take photos each lesson of the crystal with a ruler or graph paper under the dish to able to measure it's growth. Save each photo with the date and name of the solution recorded in the photo. Keep a record of all your photos taken so they can be printed off and submitted with the report on completion of this project.

QUESTIONS:

i What were the *SOLUTE* used in your experiment ?
ii What *SOLVENT* was used in your experiment ?
iii List two ways you could have made your crystals bigger?
iv Explain what variables need to be well controlled to have success when growing crystals?
v In the boxes on the next page, draw a diagram for each of the crystals you have formed showing clearly their shape and calculate the scale of your diagram
i.e. 1 mm on your crystal is how many mm in the diagram?
vi After you have done some research, write a detailed procedure where the aim is to grow a large crystal about 2cm in length.

Submit a report, which contains an aim, annotated magnified photos of your final crystals, scaled diagrams of each crystal and answers to each of the questions above. You will be assessed on Conducting and Evaluating.

Scale 1 : _____ **Mineral: _____**

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