

PRACTICAL WORKSHEET GRADE 6

Subject: Natural Science and Technology

Strand: Matter & Materials

Duration: 1 hour

Topic: How Temperature affects the rate of dissolving

Specific Aims covered: (a) Doing Science and Technology
(b) Understanding of connecting ideas
(c) Science, Technology and Society

Process Skills covered: Hypothesising, Plan investigation, Do investigation, Observe, Record information, Communication.

Prior Knowledge: Soluble substances and Insoluble Substances in water.

TEACHING AND LEARNING ACTIVITIES

CONCEPTS TO BE LEARNT: Stirring, rate, dissolving, temperature, solute, solvent solution, size of particles

When you have completed your observations and measurements in this experiment, you must produce a written report in your notebook under these standard headings:

AIM: To investigate different factors affecting dissolving

APPARATUS: Beakers, Thermometer, stop watch, spirit burner, spatula (spoons), tripod stand, matches

RESOURCES USED

1. Viva NS/Tech Teachers guide
2. Viva NS/Tech Learners Book
3. Salt granules (Coarse and Fine)

METHOD: Enquiry method

PROCEDURE: The basic procedure is to put measured amount of solute into a measured amount of water and time how long it takes for all the solute to disappear into the solution.

RESULTS & CONCLUSION: A statement of what the results mean.

PRIOR KNOWLEDGE:

1. Give two reasons why sugar dissolves quite fast into your tea?
2. Why does sugar dissolve quite slowly in ice cold water?

EXPLANATION OF TERMINOLOGY: Firstly, we need to answer this question, what is rate of dissolving and how would we measure it? (Rate is the change in time e.g. speed or rate of dissolving simply means how fast a solute dissolves into a solvent).

Secondly, time intervals are best measured with a stopwatch (there is one on your cell phone)

PRACTICAL ACTIVITY

Here we have three containers to observe and in our minds we must have these questions:

- (a) How quickly will **COLD** water dissolve a solute?
- (b) How quickly will **WARM** water dissolve a solute?
- (c) How quickly will **HOT** water dissolve a solute?

Prediction: Which substance will dissolve faster in the following conditions

Each group must observe each container here to see results and record their time on the stopwatch when they see total dissolving without stirring.

Use the following table to record the measurements

Activity : Testing effect of temperature on fine salt (Temperature varies, salt constant)

SUBSTANCES	TEMP. BEFORE	Time 1	Time2	Time3	Total	TEMP. AFTER
Fine Salt	Cold water					
Fine Salt	Warm water					
Fine Salt	Hot water					

NB: As an expanded opportunity learners can use the same table to test:

- (a) different size of substances to investigate the rate of dissolving
- (b) When using a different method e. g. stirring or not stirring

INCLUSIVITY

- Learners with a barrier of slow learning are grouped together so as to pay more attention to them.
- Learners with a barrier of fast learning must also prepare to report their findings when they finish and explain to others clearly.

CONCLUSION:

Salt dissolves faster in hot water