

## LESSON PLAN

Name of the teacher \_\_\_\_\_

Date \_\_\_\_\_

Name of the School \_\_\_\_\_

Duration of the period :2x40'

Subject: Chemistry

Topic of the lesson : Mixtures

Sub-topic : preparation and separation of mixtures

Grade 7 (seven )

Objectives : By the end of the lesson, the pupils will be able to:

- explain the concept mixture
- demonstrate the formation of solid-solid, liquid liquid and separate these mixtures
- classify these mixtures as homogeneous and heterogeneous mixtures
- define solid solid and liquid liquid mixtures

	teaching /learning activities	Teaching - learning materials	Core points	Evaluation / Exercise
	<p><b>PRK</b> Pupils know some substances are soluble while others are insoluble in water. They prepare some meals by mixing varied food substances</p> <p><b>INTRODUCTION</b> a) Pupils are asked to state the three states of matter. b) Some salt and a stone are placed in water which one will dissolve easily and why? c) State three different food items used for preparing fufu /soup /salad. d) Which materials are used to make mortar.? Discuss the concept 'mixture' with pupils</p> <p><b>Activity 1.</b> Pupils identify the physical states of the TLMs given. They form a solid-solid mixture from iron filings and chalk powder. They separate the mixture using a magnet.</p> <p><b>Activity 2</b> Pupils identify the physical states of the TLM. They form a liquid - liquid mixture from water and oil. They separate the water from the oil</p> <p><b>Activity 3</b> Discuss with pupils more examples of solid- solid and liquid-liquid mixtures in their homes.</p>	<p>Chalk powder, iron filings, magnets, water, oil, beaker, nails, cut out frytol bottle tops ,powdered salt, sand, alcohol, watching glass</p>	<p>a) Solid, liquid and gas. <b>Mixture:</b> mixtures are substances produced from the physical combination of two or more different substance. The components of mixtures can be separated using a physical method or processes. No new chemical substance is formed in mixtures. Type of mixture Solid-solid mixture Substance formed : iron filings + chalk powder Method of separation: magnetization Type of mixture Liquid-liquid mixture Substance formed: oil+ water Method of separation: decantation</p>	<p>Answer the following questions. 1. What is a mixture? 2. list two examples each of solid-solid and liquid-liquid mixtures. 3. mention them as homogeneous or heterogeneous mixture</p>

## Students' work sheet

iron filings, chalk powder, water, oil, stones or sand , rice , magnet, powdered salt, two beakers and trays.

NB: Identify to insure that the items written in the worksheet is what your group has been given

### QUESTION

1. Predict:

Will the appearance or nature of two of your solids change if they are put/ combined together in a container?.....

2. Predict :

Will the appearance or nature of two of your liquids change if they are combined together in a container?.....

### ACTIVITY 1

**Materials:** Use the iron filing , the chalk and magnet.

**Question:** what state of matter is the iron filings and the chalk powder?

Iron filings are.....and chalk powder is.....

### Procedure

(i) put the iron filings in the container,

(ii) add the chalk powder to the iron filings in the container

(iii) Stir the things in the container to form a uniform combination.

(iv) What name is given to the uniform substance produced?

.....

(v) Can you separate the iron filings from the chalk powder?.....

(vi) Put the magnet into the mixture and stir thoroughly.

(vii) (a) Remove the magnet. What substance is on the magnet?.....

(b) What substance is left back inside the container?.....

## ACTIVITY 2

**Materials:** use the water, the oil, the cut- out frytol container top (A), The cut -out frytol container bottom as a beaker and the nail.

### Question:

1. What is the state of matter of the oil and the water?
2. The oil is a ..... and the water is a .....
3. Will the oil and the water combine to form one complete uniform substance? Yes/ No

### Procedure

- (i) Put the container **A** into the container **B**
  - (ii) Pour the oil into the container **A**
  - (iii) Add some of the water into the oil in the container **A**
  - (iv) Stir the combination and allow it to settle as shown in the diagram
  - (v) Has the two substances combined completely to form a uniform substance? Yes/ no.
- Which substance settles at the top?.....
- Which substance settles at the bottom?.....
- Label the substance in the diagram as they have settled in your bottle.

### Diagram of the activity

- (vi) Can you separate the oil from the water? YES / NO.
  - (vii) **Pierce** the **nail** through the lid of the container **A** and allow only the bottom liquid to drain down into container **B**.
- The liquid left in the container **A** is called .....