



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE  
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

**Adult Basic Education and Training (ABET)  
Site-Based Assessment  
Portfolio of Evidence**

**Natural Science:** NQF Level 1  
**Total:** 40 marks  
**Duration:** 1 Day  
**Task 1:** Practical Investigation

**Learner Information**

**Name** : \_\_\_\_\_  
**Surname** : \_\_\_\_\_  
**Identity/  
Passport Number** : \_\_\_\_\_  
**Employee Number** : \_\_\_\_\_  
**Company** : \_\_\_\_\_  
**Centre** : \_\_\_\_\_  
**Date** : \_\_\_\_\_

**Declaration**

*I declare that this portfolio of evidence is my own work:* \_\_\_\_\_

**Signature**



**INSTRUCTIONS**

1. This task consists of **TWO SECTIONS**.
2. This practical investigation is based on the theme: **MATTER and MATERIALS**.
3. The title of the practical investigation: **THE RATE OF DISSOLUTION OF A TABLET WITH VARYING SURFACE AREA**.
4. The task should be completed in **ONE DAY**.
5. The task is divided into **EIGHT PARTS (A to H)**.
  - 5.1 **Parts A – F (SECTION 1)** must be done in groups of **THREE**. You can select a group or be allocated a group.
  - 5.2 **Parts G and H (SECTION 2)** must be completed by learners individually.
6. Write neatly and legibly.



**SECTION 1: GROUP WORK**

Read the case study below for the purpose of this task.

**Surface Area**

The rate at which a solute dissolves depends on the size of the solute particles. A given quantity of solute dissolves faster when it is ground into small particles, rather than in the form of large pieces because more surface area is exposed.

Source: <https://chem.libretexts.org/>

**PART A – HYPOTHESIS**

As a group, formulate the hypothesis for your investigation based on the above case study.

Write or note your hypothesis in your notepad(s).

**PART B – AIM**

Write the aim of the investigation and note it on your notepad(s) also.

**PART C – GATHERING OF APPARATUS OR MATERIALS**

- 3 x Disprin tablets
- 3 x same small clear and plain drinking glasses
- Metal teaspoon
- A saucer
- A jug of tap water
- Measuring cup
- A stopwatch
- Three equal pieces of white paper



## PART D – PROCEDURE AND OBSERVATION

**INSTRUCTION:** The Facilitator will provide guidance in conducting the investigation. Learners should write down each step followed when conducting the investigation.

1. Using a marker, write **FULL TABLET**, **QUARTERED TABLET** and **CRUSHED TABLET** on each piece of white paper.
2. Arrange the three glasses in line, then place pieces in front of the glasses following the sequence in Number 1.
3. On the first glass identified as **FULL TABLET**, pour 100ml of tap water.
4. Set the timer in the stopwatch. Drop the full tablet and start timing the reaction.
5. Observe what happens and record the time it took for the Full Tablet to completely dissolve.
6. Take a second tablet and try to break it into 4 quarters. Try not to lose any of it.
7. Repeat Steps 3 to 5 but using the glass identified as **QUARTERED TABLET**.
8. Now use the teaspoon and a saucer to crush the third tablet into powder.
9. Repeat Steps 3 to 5 but now pouring the crushed tablet into the glass identified as **CRUSHED TABLET**.

## PART E – RECORD THE RESULTS IN A TABLE AND ANALYZE THEM

- After completing all THREE tests, tabulate the rate of dissolution on all three glasses.
- Analyze the recorded results against your hypothesis.

## PART F - DRAW THE CONCLUSION

Draw your conclusion of whether you CONFIRM or REJECT the hypothesis. Provide the reasons to support your conclusion.



**SECTION 2: REPORT AND QUESTIONS – INDIVIDUAL WORK****PART G - REPORT WRITING**

Based on the activities IN SECTION 1, complete the report below.

1. Write the hypothesis for the investigation. (2)

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2. State the aim of the investigation. (2)

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3. List the apparatus or materials used to conduct the investigation. (7)

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4. Provide the steps followed when conducting the investigation. (8)

**Note: The procedure must be written in the third person.**

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**PART H - QUESTIONS**

1. Define the term 'Dissolution'. (2)

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2. Identify the following variables.

- 2.1 Independent variable (1)

- 2.2 Dependent variable (1)

- 2.3 Control variable (1)

**Total Marks for Part H [5]**

**GRAND TOTAL FOR TASK 1 [40]**



**Total for Task 1: 40 Marks**

<b>Task</b>	<b>Activity</b>	<b>Maximum Mark</b>	<b>Learner's Mark</b>	<b>Moderated Mark</b>
<b>Task 1</b>	<b>Part G</b>	<b>35</b>		
	<b>Part H</b>	<b>05</b>		
	<b>Total: Task 1</b>	<b>40</b>		

