

**The Primary Stage of Grades (4-5)  
School Year 2022 - 2023**

Name: \_\_\_ **Key** \_\_\_

**Unit (6): Physical and  
Chemical Changes  
Worksheet (4): Dissolving- Lab Report  
Grade 5 CP (All sections)**

Date: / /

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**Objective:**

- Investigate the factors that affect the rate of dissolving in the lab.

**Part 1:**

Investigating the effect of **the grain size of the solute** on the rate of dissolving:

**Materials required:**

Digital balance, three equal sized beakers, water, stirring rod, timer.

Different kinds of sugar: Powdered sugar, granulated sugar, sugar cubes.

**Procedure:**

1. Measure the mass of a sugar cube.
2. Add the sugar cube to the first beaker and stir it until all the sugar dissolves, record the time taken to dissolve in table 1.
3. Repeat with the same mass of each type of sugar.
4. Record the results in table 1.

**Results:**

Table 1:

Kind of sugar	Time to dissolve in sec
Sugar cube	100
Granulated sugar	49
Powdered sugar	19

1. Identify the **independent variable** in this investigation. (the factor we changed)

... **The grain size of sugar** .....

2. Identify the **dependent variable** in this investigation. (the factor being measured)

..... **Time to dissolve**.....

3. Name three **controlled variables** in this investigation. (the factors we must keep the same)

a. **The volume and temperature of water.** .....

b. **The mass of sugar.** .....

c. **The stirring speed.** .....

4. Write a proper **conclusion** for this investigation.

**The smaller the grain size of the solute is, the faster it dissolves**.....

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## Part 2:

Investigating the effect of **the temperature of the solvent** on the rate of dissolving:

### Materials required:

Digital balance, two equal sized beakers, water at different temperatures, stirring rod, timer, granulated sugar.

### Procedure:

1. Measure the temperature of water in both beakers, record the readings in table 2.
2. Measure 4 grams of sugar.
3. Add the same mass of sugar to each beaker and stir it until all the sugar dissolves, record the time taken to dissolve in table 2.

### Results:

Table 2:

Beaker	Temperature of water in °C	Time to dissolve in sec
Beaker A	40	29
Beaker B	20	49

1. Identify the **independent variable** in this investigation.

**Temperature of water.**

2. Identify the **dependent variable** in this investigation.

**Time to dissolve**

3. Name three **controlled variables** in this investigation.

- a. **The volume of water.....**
- b. **The mass and grain size of sugar.**
- c. **The stirring speed.**

4. Write a proper **conclusion** for this investigation.

**The higher the temperature of the solvent is, the faster the solute dissolves.**

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The **factors** that affect the rate of dissolving are:

**1 ..... Temperature of the solvent .....**

**2 ... Grain size of the solute .....**

**3 ... Stirring speed .....**