CONFIDENTIAL GUIDE FOR TEACHERS

THE KENYA NATIONAL EXAMINATION AND ASSESSMENT PREDICTION SERIES

Teacher's Name		**TSC NO.**	
School Name		**School Code**	
Teacher's Signature		**Date**	

KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT

705/2
PAPER 2 (*project*)
TERM 2 ENDTERM 2025

INTEGRATED SCIENCE (PRACTICAL)

Experiment: Factors Affecting Rate of Dissolution

Overall Guidance for Teachers:

a) This experiment introduces basic scientific inquiry, observation, measurement, and data recording.
b) Ensure all materials are readily available and prepared beforehand.
c) Emphasize careful measurement and accurate timing.
d) Safety with water and glassware should be highlighted.

Preparation of Materials (Prior to Exam):

a) **Sugar Crystals (Solid A):** Regular granulated sugar.
b) **Powdered Sugar (Solid B):** Finely ground sugar (can be made by crushing sugar crystals). Ensure a noticeable difference in particle size from Solid A.
c) **Warm Water (Liquid C):** Prepared and kept warm (not boiling, just significantly warmer than cold water). Approximately 40-50°C is ideal.
d) **Cold Water (Liquid D):** Tap water or water kept at room temperature (if room is cold) or slightly chilled.
e) **Beakers:** Four clearly labeled beakers (1, 2, 3, 4) per group.
f) **Stirring Rods:** One per beaker, or enough for rotation.
g) **Stop clock/watch:** One per group or easily accessible.
h) **Teaspoons:** For measuring sugar (consistency is key, even if exact mass isn't controlled).

Question One (20 marks)

Procedure Monitoring:

a) **Steps 1-4 (Setting up Beakers):** Ensure learners correctly add the specified water to each beaker. Monitor approximate volumes.
b) **Steps 5-8 (Adding Sugar, Stirring, Timing):** This is the core.
   - **Teacher's Role:** Observe groups to ensure continuous stirring. Stress starting the stopwatch immediately upon adding sugar and stopping it precisely when *all* sugar dissolves.
   - **Common Challenges:** Inconsistent stirring, inaccurate timing, difficulty determining when *all* sugar has dissolved (especially with crystals). Guide them on visual cues.
- **Expected Results:**
  - Warm water (Beakers 2 & 4) should dissolve sugar faster than cold water (Beakers 1 & 3).
  - Powdered sugar (Beakers 3 & 4) should dissolve faster than sugar crystals (Beakers 1 & 2).

-INTEGRATED SCIENCE-