



# THE KENYA NATIONAL EXAMINATIONS COUNCIL

## SCHOOL BASED ASSESSMENT

### INTEGRATED SCIENCE

Grade 8 – 2026

LEARNER'S NAME: \_\_\_\_\_

ASSESSMENT NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_

SCHOOL NAME: \_\_\_\_\_

#### INSTRUCTIONS TO LEARNERS

1. *This paper consists of 8 questions.*
2. *Answer **ALL** the questions in the spaces provided.*

The grid below to be filled by the teacher after marking the learners' work. During uploading, the teacher to upload the scores per task.

| Tasks            | Matter, Elements and Compounds | Living Things | Force and Energy |
|------------------|--------------------------------|---------------|------------------|
| Question Numbers | 1-3                            | 4-6           | 7 -8             |
| Max. Score       | 12                             | 11            | 7                |
| Learner's Score  |                                |               |                  |

*This paper has 6 printed pages*

**TURN OVER**

1. A science teacher places three substances on a table:

- **Substance X** is made of iron atoms only.
- **Substance Y** is made of oxygen atoms only.
- **Substance Z** is formed when iron reacts with oxygen.

a) A learner mixes iron filings and oxygen gas in a container and claims that the product is the same as **substance Z**. Explain whether you agree with the learner. (1 mark)

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b) **Substance Z** contains both iron and oxygen. Explain why **substance Z** is classified as a compound rather than an element. (1 mark)

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c) **Substance Z** is broken down chemically.

(i) Identify the substances that would be obtained. (1 mark)

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(ii) State what your answer in (i) reveals about the nature of substance **Z**? (1 mark)

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2. A learner observes the following changes:

- Ice melts into water.
- A piece of paper burns.
- Iron develops rust.
- Sugar dissolves in water.

a) The learner places equal amounts of ice and paper under the same conditions. The ice changes into water, while the paper burns to form ash and smoke. Explain why these two changes are classified differently. (2 marks)

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b) Two learners disagree about rusting. Learner A says, "*Rusting is only a change in appearance because the iron is still present.*" Learner B says, "*Rusting is a chemical change.*" Explain which learner is correct. (1 mark)

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c) A learner says, “*Sugar has disappeared when it dissolves in water, so a chemical change must have occurred.*” Describe how you could demonstrate it is a physical change. (1 mark)

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3. Figure 1 shows an attempt to extinguish a fire involving cooking oil in a beaker on a hot plate by pouring water onto it.



Figure 1

(a) Explain the main risk that would occur if water were used to put out this type of fire.

(1 mark)

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(b) Suggest **ONE** suitable method for putting out a small cooking-oil fire in the laboratory.

(1 mark)

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(c) (i) State the importance of identifying the class of fire before selecting an extinguisher.

(1 mark)

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(ii) Give **one** reason for your answer in (i).

(1 mark)

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4. Figure 2 shows two cells observed by learner **A** and learner **B** using a microscope.

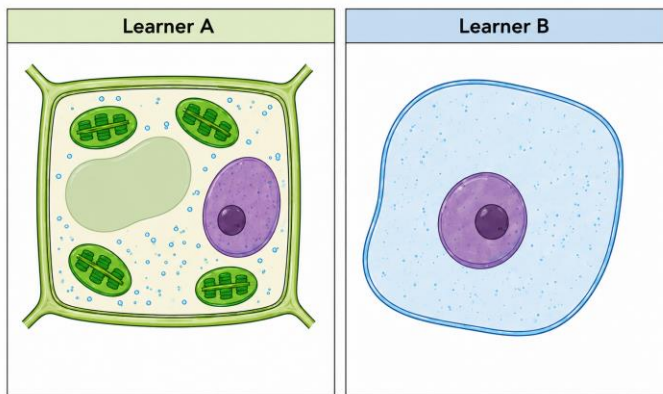


Figure 2

a) (i) Identify the learner observing a plant cell? (1 mark)

(i) Give **two** reasons for your answer in (a). (2 marks)

c) State **one** structure that the two cells have in common. (1 mark)

5. Figure 3 shows a set up used to investigate the movement of substances in and out of the cell.

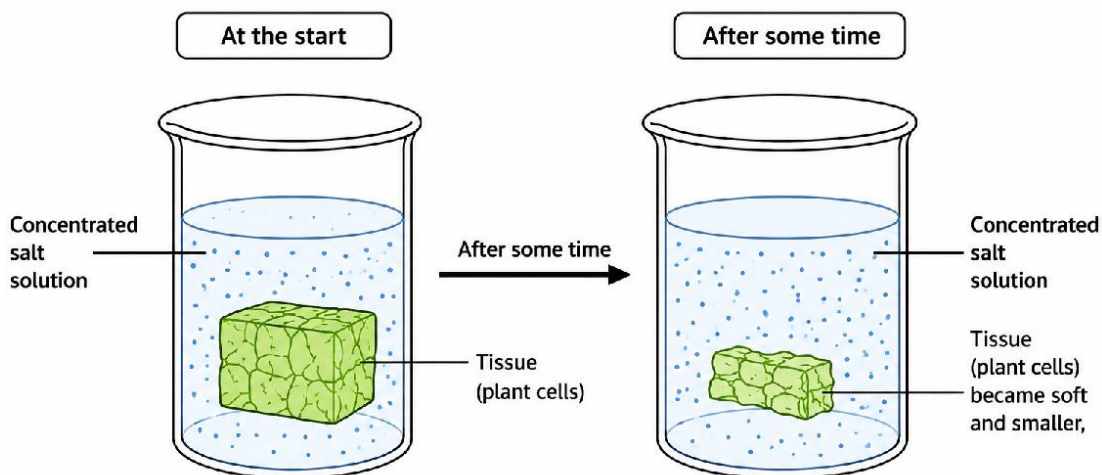


Figure 3

a) Explain why the tissue became smaller after being placed in the concentrated salt solution for some time. (2 marks)

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- b) State what would happen if the same tissue were placed in pure water for some time. (1 mark)
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6. (a) During a school health campaign, learners are shown a case of a 14-year-old girl who experiences regular menstruation. A learner argues that menstruation means the body is “losing eggs every month” and therefore a girl will eventually run out of eggs very quickly.

- i) Explain why the learner's claim is scientifically wrong. (1 mark)
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ii) Explain what would happen to the menstrual cycle if the organ responsible for releasing ova were no longer functioning. (1 mark)

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b) Two learners argue as follows:

- **Learner 1:** “Fertilisation can occur whenever male and female reproductive cells are present in the reproductive system.”
- **Learner 2:** “The reproductive cells must meet under suitable conditions for fertilisation to occur.”

- (i) Identify the learner who has the correct understanding of fertilisation? (1 mark)

- (ii) Give a reason for your answer in (i) (1 mark)
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7. Figure 4 shows a battery torch.

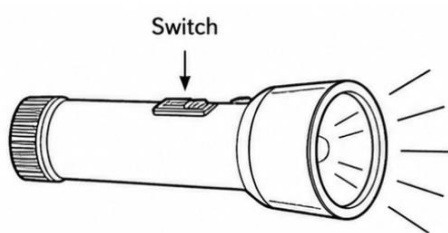


Figure 4

a) A learner removes the dry cells from the torch but leaves the switch in the ON position. Explain what will be observed. (1 mark)

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b) The torch and a solar-powered lamp both produce light. Explain why the two devices do not use the same form of energy as their initial energy source. (1 mark)

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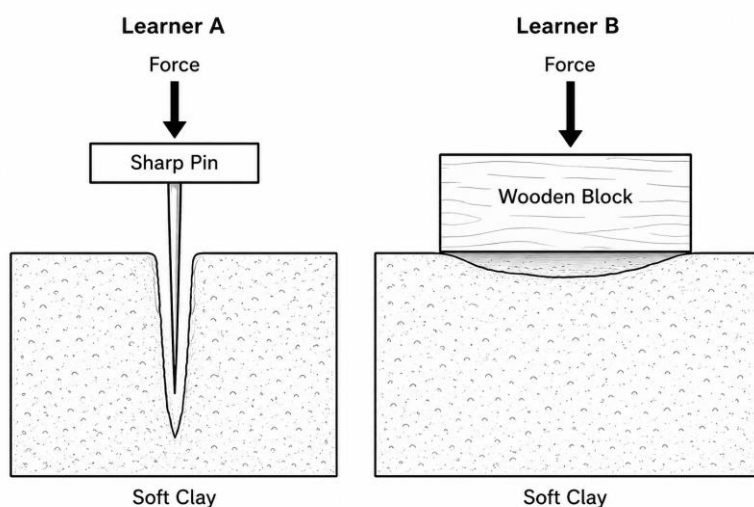
c) After several minutes of use, the torch becomes warm. State the energy transformation that makes the torch warm. (1 mark)

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d) A learner proposes replacing the ordinary torch with a solar-powered lamp to reduce the amount of energy obtained from stored chemical energy. Explain whether the learner's proposal is a good idea. (1 mark)

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8. Figure 5 shows the effects of identical forces applied by two learners on a sharp pin and a wooden block placed on soft clay.



a) Explain why the pin sinks deeper into the clay than the wooden block. (1 mark)

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b) State what would happen if Learner **B** doubled the force applied to the wooden block while keeping the contact surface the same. (1 mark)

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c) Suggest **one** way Learner **B** could make the wooden block sink deeper into the clay without increasing the force applied. (1 mark)

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