

# Exercises on scientific diagrams and animal adaptations

Tolentino Tuition

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Grade 5 Science

16 March 2026

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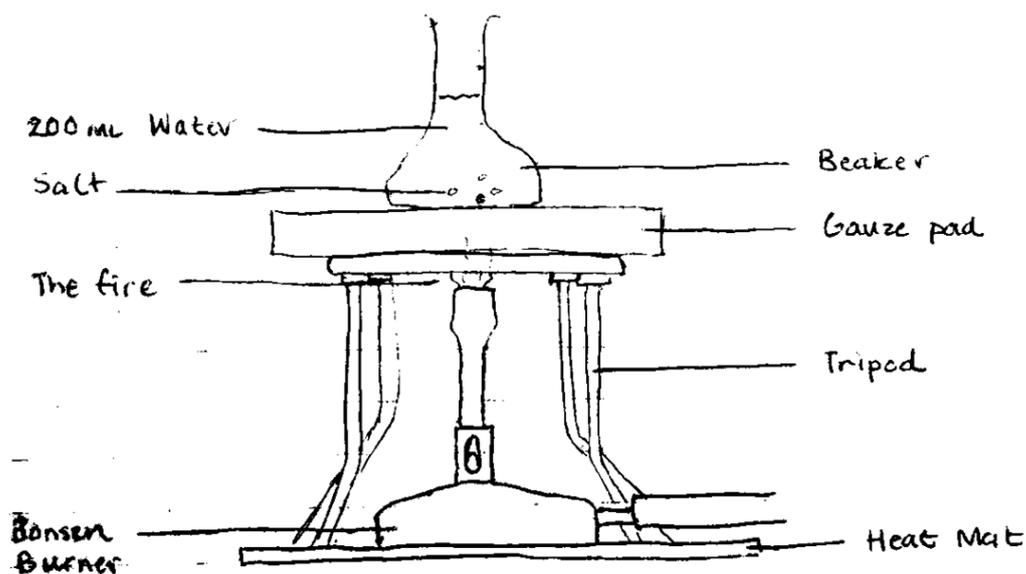
## Exercise 1

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Miguel is a student. He was asked to draw a safe and accurate scientific diagram of a setup for an experiment involving the use of a Bunsen burner to test the following hypothesis:

*If the amount of salt added to 250 millilitres of water is increased,  
the boiling point of the water in degrees Celsius will increase.*

A. Miguel drew the following diagram. Can you identify all 6 errors that he made?



|         |  |
|---------|--|
| Error 1 |  |
| Error 2 |  |
| Error 3 |  |
| Error 4 |  |
| Error 5 |  |
| Error 6 |  |

B. What are the independent and dependent variables of the experiment?

(The hypothesis is

*If the amount of salt added to 250 millilitres of water is increased,  
the boiling point of the water in degrees Celsius will increase.)*

|             |  |
|-------------|--|
| Independent |  |
| Dependent   |  |

C. Can you construct an appropriate scientific table of results for this experiment?

## Exercise 2

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Our five 'key words' concerning animal adaptation are

|                    |
|--------------------|
| <i>Adaptations</i> |
| <i>Environment</i> |
| <i>Habitat</i>     |
| <i>Predator</i>    |
| <i>Survive</i>     |

Using at least one of the above key words in your answer, please describe the *impact* of the following scenarios on the specified animal.

### Animal 1

Koalas are considered 'highly specialized marsupials', because they eat only a few species of eucalyptus leaves. Koalas are best suited to live in eucalyptus forests and try to avoid moving along the ground, as on the ground they are at risk of being caught and eaten by dogs.



### Scenario 1

Increased greenhouse gas emissions have decreased the amount of nutrition in the special eucalyptus leaves that the koalas eat. Animals that eat foods with less nutrition need to eat more food in order to meet their energy needs.

#### *Example Answer:*

Koalas only eat a few species of eucalyptus leaves. Increased greenhouse gas emissions have decreased the amount of nutrition in these few species of eucalyptus leaves.

Since animals that eat foods with less nutrition need to eat more food in order to meet their energy needs, the *impact* of the decreased amount of nutrition in the eucalyptus leaves on the koala is that the koala will need to find and eat more eucalyptus leaves in its *habitat* in order to *survive*. Alternatively, the koala may need to move to a new *environment* where the eucalyptus leaves have higher amounts of nutrition.

## *Your turn!*

### Scenario 2

Deforestation has led to a decrease in the area of eucalyptus forests. Decreasing the area of an animal's habitat can make the animal more vulnerable to threats by predators. The koala's predators are dogs, dingoes, eagles, and pythons.

## Animal 2

Sea turtles hatch out of eggs. The gender of sea turtles is not determined by genetics like it is for ants and bees. Instead, the gender of sea turtles is determined by the temperature of the sand that their egg is buried in. If the sand surrounding an egg has a temperature of 29.1°C or higher, the sea turtle born from the egg will almost certainly be female.

Also, it is crucial that sea turtle eggs do not get completely engulfed in water, as the turtle inside may drown.



### Scenario 1

Increased greenhouse gas emissions have caused the temperatures at beaches to rise to an average of 29.5°C. Sea turtles lay their eggs on the shores of beaches.

### Scenario 2

The increased greenhouse gas emissions have not only impacted beaches, but also arctic regions. Large masses of ice have been melting in the arctic, causing sea levels to rise. Rising sea levels cause the tides on beaches to move closer to the shore.