

Science and Writing

Amazing Adaptations: How Plants and Animals Survive

About This Booklet

In this booklet, you will learn about **adaptations**.

You will discover how plants and animals survive in different environments, such as deserts, oceans, forests, wetlands and cold places.

You will also learn how to write about adaptations using three important science text types:

1. **Information reports**
2. **Explanations**
3. **Labelled diagrams**

You will also reflect on how learning about living things can remind Muslims of Allah's creation, wisdom and mercy.

Learning Goals

By the end of this booklet, you should be able to:

- explain what an adaptation is
 - describe different types of adaptations
 - identify plant and animal adaptations
 - explain how adaptations help living things survive
 - write an information report about a plant or animal
 - write an explanation about how an adaptation works
 - create a labelled diagram
 - reflect on Islamic teachings about caring for living things
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Important Science Words

Word	Meaning
Living thing	Something that grows, needs food or water, responds to its surroundings and can reproduce
Plant	A living thing that usually makes its own food using sunlight
Animal	A living thing that eats food, moves in some way and responds to its environment
Habitat	The place where a plant or animal naturally lives
Environment	Everything around a living thing, including air, water, soil, temperature, plants and animals
Adaptation	A feature or behaviour that helps a living thing survive
Survive	To stay alive
Predator	An animal that hunts another animal for food
Prey	An animal that is hunted by another animal
Camouflage	Colours, patterns or shapes that help a living thing blend into its surroundings
Ecosystem	A community of living and non-living things interacting together
Nocturnal	Active at night
Migrate	To move from one place to another, often because of weather, food or breeding needs
Hibernation	A deep resting state some animals enter to save energy during cold or difficult seasons

What Is an Adaptation?

An **adaptation** is a special feature, body part or behaviour that helps a plant or animal survive in its habitat.

A habitat can be hot, cold, wet, dry, dark, bright, crowded or dangerous. Living things need adaptations because every habitat has challenges.

For example:

- A desert is hot and dry.
- An ocean is wet and deep.
- A rainforest has lots of shade and rain.
- The Arctic is freezing cold.
- A grassland has open spaces and many predators.

Plants and animals survive better when they have features or behaviours that suit their environment.

Example

A camel lives in the desert.

The desert has:

- hot weather
- sand
- little water
- dry plants
- strong sunlight

Camels have adaptations that help them survive these challenges.

For example, camels have:

- wide feet to walk on sand
- long eyelashes to protect their eyes
- nostrils that can close to keep out sand
- humps that store fat for energy
- tough lips to eat prickly plants

Each feature has a job. That job helps the camel survive.

Why Are Adaptations Important?

Adaptations are important because they help living things:

- find food
- drink or save water
- protect themselves
- escape predators
- catch prey
- move around
- stay warm
- stay cool
- raise young
- live in difficult environments

Without suitable adaptations, a plant or animal may not survive well in its habitat.

Types of Adaptations

There are three main types of adaptations.

1. Structural Adaptations

A **structural adaptation** is a physical feature or body part that helps a living thing survive.

The word **structure** means the way something is built.

Structural adaptations are things you can usually see.

Examples of Structural Adaptations

Living Thing	Structural Adaptation	How It Helps
Camel	Wide feet	Helps it walk on sand without sinking
Cactus	Thick stem	Stores water
Bird	Beak shape	Helps it eat certain foods
Fish	Gills	Helps it breathe underwater
Polar bear	Thick fur	Helps it stay warm
Echidna	Spines	Helps protect it from predators
Duck	Webbed feet	Helps it swim
Kangaroo	Strong back legs	Helps it jump long distances

Easy Way to Remember

A structural adaptation is something a living thing **has**.

Examples:

- A camel **has** wide feet.
 - A cactus **has** spines.
 - A fish **has** gills.
-

2. Behavioural Adaptations

A **behavioural adaptation** is something an animal does to help it survive.

The word **behaviour** means an action.

Behavioural adaptations are not body parts. They are actions or habits.

Examples of Behavioural Adaptations

Animal	Behavioural Adaptation	How It Helps
Bird	Migrates to a warmer place	Helps it find food and suitable weather
Lizard	Hides under rocks during extreme heat	Helps it stay cool
Penguin	Huddles with other penguins	Helps it stay warm
Owl	Hunts at night	Helps it find food
Kangaroo	Rests in shade during hot parts of the day	Helps it avoid overheating
Meerkat	Takes turns watching for danger	Helps protect the group
Bear	Hibernates during winter	Helps save energy when food is limited

Easy Way to Remember

A behavioural adaptation is something a living thing **does**.

Examples:

- A bird **migrates**.
- A lizard **hides**.
- A penguin **huddles**.

3. Physiological Adaptations

A **physiological adaptation** is something inside a living thing's body that helps it survive.

These adaptations are usually harder to see because they happen inside the body.

Examples of Physiological Adaptations

Living Thing	Physiological Adaptation	How It Helps
Camel	Can conserve water	Helps it survive in dry places
Snake	Produces venom	Helps it catch prey or protect itself
Some desert plants	Store water inside their tissues	Helps them survive without frequent rain
Human body	Sweats to cool down	Helps control body temperature
Some fish	Control salt levels in their bodies	Helps them live in salty water
Some animals	Produce poison or toxins	Helps protect them from predators

Easy Way to Remember

A physiological adaptation is something a living thing's body **does inside**.

Examples:

- A camel's body saves water.
- A snake's body makes venom.
- A human body sweats to cool down.

Adaptations Summary

Type of Adaptation	Meaning	Example
Structural	A body part or physical feature	A cactus has spines
Behavioural	Something an animal does	A bird migrates
Physiological	Something that happens inside the body	A camel conserves water

Islamic Connection

Signs in Allah's Creation

In Islam, learning about the natural world can help us reflect on Allah's creation.

Allah created plants, animals, people, water, land, skies and all living things with wisdom.

When we study adaptations, we notice how carefully living things are suited to their environments.

Allah says:

“And Allah has created from water every living creature.”

Surah An-Nur 24:45

This ayah reminds us that water is important for life. Every living thing depends on Allah's creation in different ways.

Allah also says:

“With it He produces for you crops, olives, palm trees, grapevines, and every type of fruit.”

Surah An-Nahl 16:11

This ayah reminds us that plants are a blessing from Allah. They provide food, shade, oxygen, beauty and benefit for people and animals.

Reflection Question

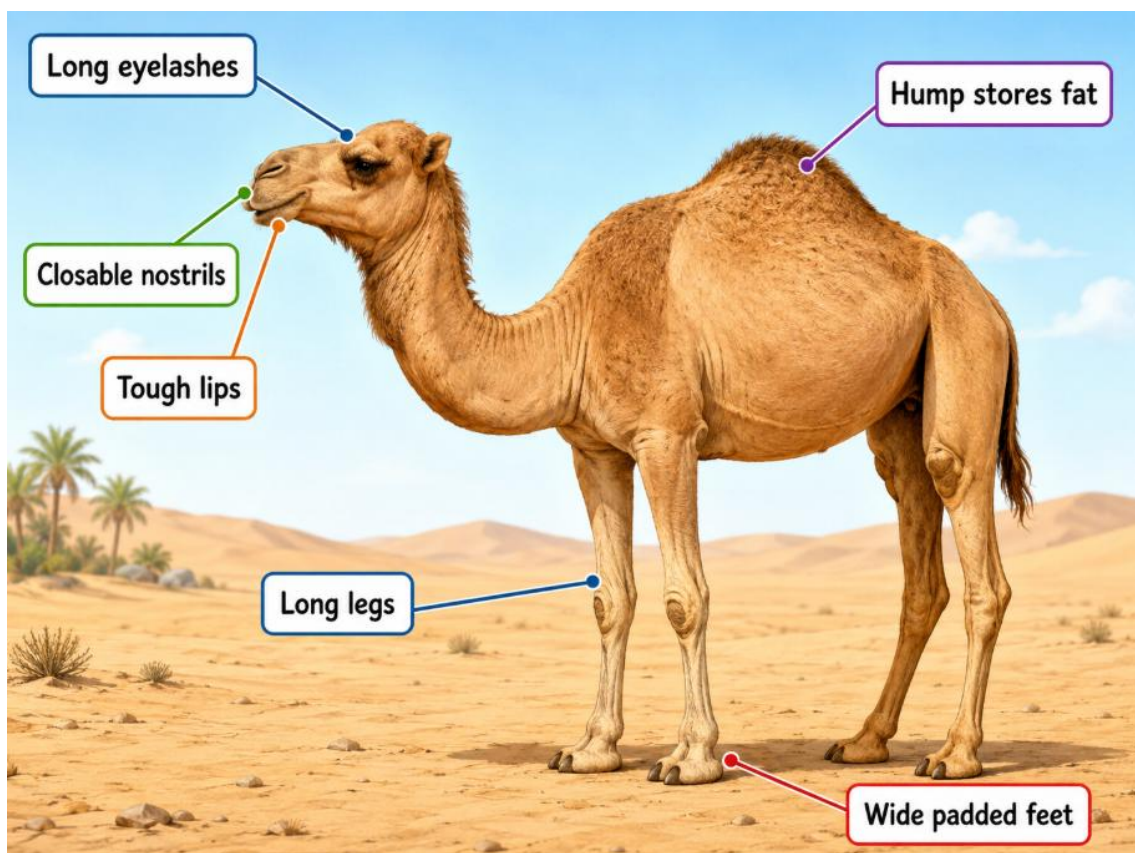
Why do you think learning about plants and animals can help Muslims become more grateful to Allah?

Student Response

Modelled Response

Learning about plants and animals can help Muslims become more grateful to Allah because it shows us the wisdom in His creation. Every living thing has special features that help it survive. For example, camels have wide feet for walking on sand and cacti have thick stems to store water. These details remind us that Allah created living things with care and purpose.

The Camel



Information Report

Camels: Desert Survivors

An **information report** gives facts about a topic.

It does not tell a made-up story.

It teaches the reader true information.

What Are Camels?

Camels are large mammals that are well adapted to desert environments.

A **mammal** is an animal that usually has hair or fur, gives birth to live young and feeds its babies milk.

Camels are sometimes called “ships of the desert” because they can travel long distances across sand.

Habitat

A **habitat** is the place where a living thing naturally lives.

Camels live in dry environments such as deserts. Deserts can be very hot during the day and cold at night. They also have little water and not many soft green plants.

Camel Habitat: Desert

Camels are perfectly adapted to survive in hot, dry desert environments.



HOT SUN

Intense sunlight and high temperatures dominate the day.



SAND DUNES

Rolling sand dunes are shaped by wind across the desert landscape.



VERY LITTLE WATER

Water is scarce and found only in rare, small pools or after rainfall.



OPEN DESERT SPACE

Vast, open areas provide plenty of room to travel and roam.



DRY PLANTS

Tough, dry plants are adapted to survive with very little moisture.



ROCKS

Rocks and stones are scattered across the desert floor.

Appearance

Camels have:

- long legs
- wide padded feet
- long eyelashes
- closable nostrils
- tough lips
- one or two humps
- thick fur in some parts of the body

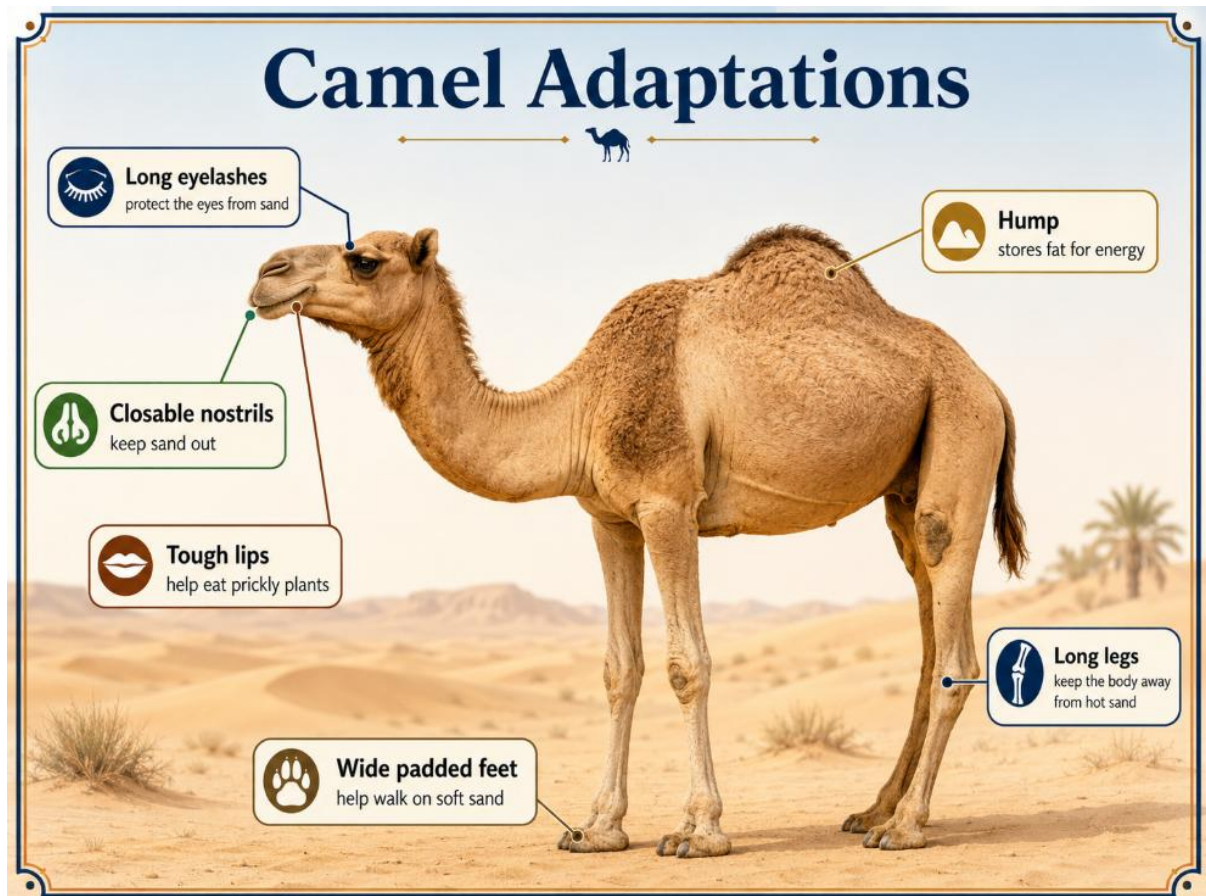
Each of these features helps the camel survive.

Camel Adaptations

Camel Feature	Type of Adaptation	How It Helps
Long eyelashes	Structural	Protect the eyes from sand
Closable nostrils	Structural	Keep sand out during windstorms
Wide padded feet	Structural	Help the camel walk on soft sand
Hump	Structural	Stores fat, which can be used for energy
Tough lips	Structural	Help the camel eat prickly desert plants
Resting during extreme heat	Behavioural	Helps the camel save energy
Conserving water	Physiological	Helps the camel survive with little water

Conclusion

Camels are suited to desert life because their bodies and behaviours help them survive heat, sand and limited food and water.



Explanation

How Camels Survive in the Desert

An **explanation** tells how or why something happens.

This explanation answers the question:

How do camels survive in the desert?

Camels survive in the desert because they have special adaptations that help them live in hot, dry and sandy environments.

Firstly, camels have long eyelashes. These eyelashes help protect their eyes from blowing sand. Their nostrils can also close, which helps stop sand from entering their nose during windstorms.

Secondly, camels have wide, padded feet. These feet spread the camel's weight across the sand. This helps the camel walk without sinking too deeply.

Thirdly, camels have humps that store fat. The fat can be used for energy when food is difficult to find.

Finally, camels have tough lips. These lips help them eat dry, rough and prickly desert plants.

These adaptations work together to help camels survive in one of the harshest environments on Earth.

HOW DO CAMELS SURVIVE IN THE DESERT?

Camels survive in the desert because they have special adaptations that help them live in hot, dry and sandy environments.

1

Firstly



Camels have long eyelashes. These eyelashes help protect their eyes from blowing sand. Their nostrils can also close, which helps stop sand from entering their nose during windstorms.



LONG EYELASHES



CLOSABLE NOSTRILS

2

Secondly



Camels have wide, padded feet. These feet spread the camel's weight across the sand. This helps the camel walk without sinking too deeply.



HUMP



WIDE PADDED FEET

3

Thirdly



Camels have humps that store fat. The fat can be used for energy when food is difficult to find.



TOUGH LIPS

4

Finally



Camels have tough lips. These lips help them eat dry, rough and prickly desert plants.



These adaptations work together to help camels survive in one of the harshest environments on Earth.



DID YOU KNOW?

Camels can go for many days without water. They can drink large amounts in one go.



Plant Example

Cactus Plants: Desert Survivors

Cacti are plants that can survive in dry environments.

Many cacti live in deserts with little rainfall, strong sunlight and dry soil.



What Is a Cactus?

A **cactus** is a type of plant that is adapted to dry places.

Instead of having large soft leaves, many cacti have spines. They also have thick stems that can store water.

Cactus Adaptations

Cactus Feature	Type of Adaptation	How It Helps
Thick stem	Structural	Stores water
Waxy coating	Structural	Reduces water loss
Spines	Structural	Protect the plant and reduce water loss
Wide shallow roots	Structural	Collect water quickly after rain
Green stem	Structural	Helps the plant make food
Slow growth	Physiological	Helps the plant use less energy and water

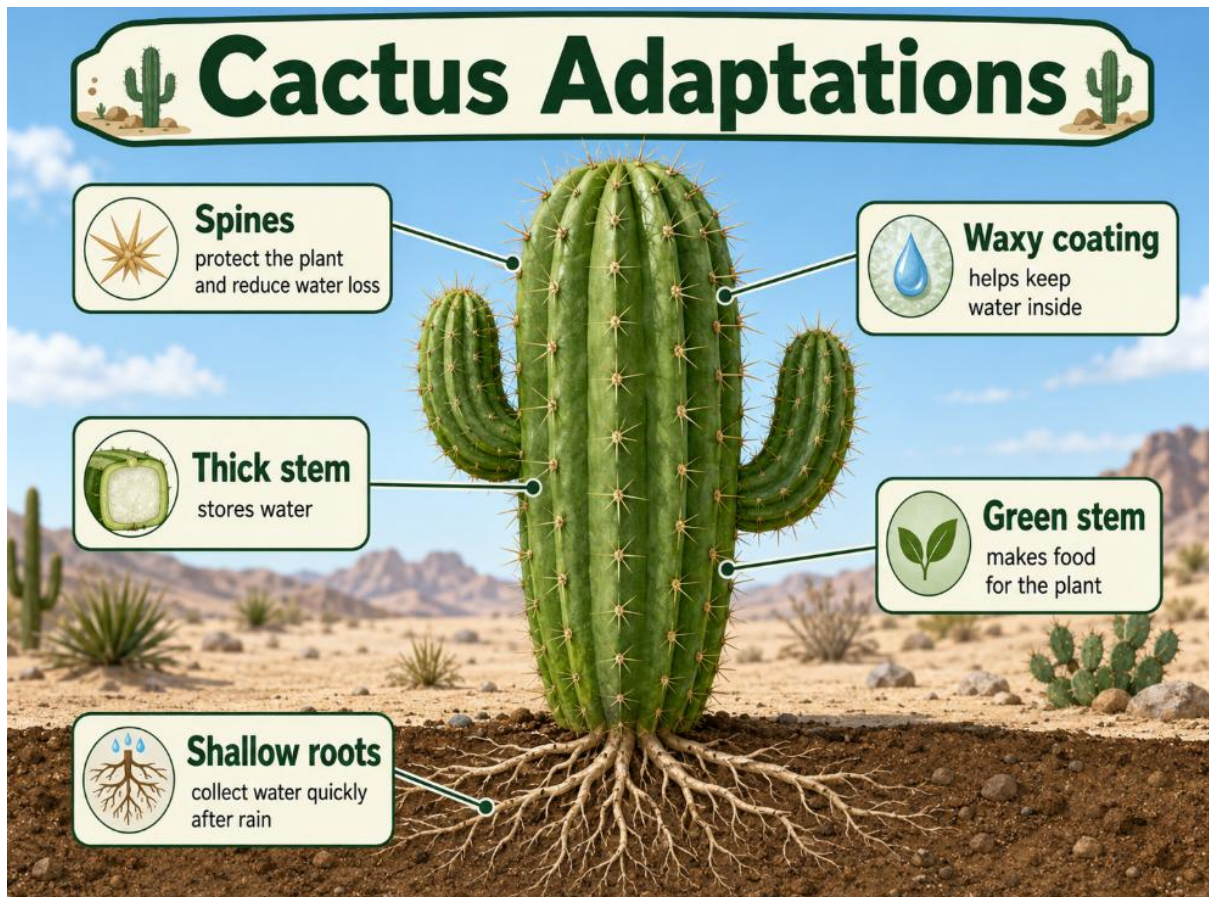
Important Definition

Water Loss

Water loss means water leaving a plant or animal's body.

Plants can lose water through their leaves. In dry places, losing too much water can be dangerous.

Cacti have adaptations that help them keep water inside.



Explanation

How Cacti Survive in the Desert

Cacti survive in deserts because they have special adaptations that help them save water.

Firstly, cacti have thick stems. These stems can store water, which helps the plant survive when there is little rain.

Secondly, many cacti have spines instead of large leaves. Large leaves can lose a lot of water. Spines help reduce water loss and also protect the plant from animals.

Thirdly, many cacti have wide shallow roots. These roots spread out near the surface of the soil. When rain falls, the roots can quickly collect water.

Finally, some cacti have a waxy coating. This coating helps keep water inside the plant.

As a result, cacti can survive in hot and dry environments where many other plants would struggle.

How Cacti Survive in the Desert

Explanation

Cacti survive in deserts because they have special adaptations that help them save water.

1 Firstly

Cacti have thick stems. These stems can store water, which helps the plant survive when there is little rain.

2 Secondly

Many cacti have spines instead of large leaves. Large leaves can lose a lot of water. Spines help reduce water loss and also protect the plant from animals.

3 Thirdly

Many cacti have wide shallow roots. These roots spread out near the surface of the soil. When rain falls, the roots can quickly collect water.

4 Finally

Some cacti have a waxy coating. This coating helps keep water inside the plant.

As a result, cacti can survive in hot and dry environments where many other plants would struggle.

Australian Animal Example

Echidnas

An echidna is an Australian mammal.

Echidnas are unusual because they are mammals that lay eggs. They have spines, strong claws and long sticky tongues.

Echidna Adaptations

Adaptation	Type	How It Helps
Spines	Structural	Protect the echidna from predators
Strong claws	Structural	Help it dig for food and shelter
Long sticky tongue	Structural	Helps it catch ants and termites
Digging into soil	Behavioural	Helps it hide and stay safe
Curling into a ball	Behavioural	Protects its soft body parts

Mini Explanation

How Echidnas Protect Themselves

Echidnas protect themselves using their spines and behaviours.

Firstly, an echidna has sharp spines on its back. These spines make it difficult for predators to attack.

Secondly, an echidna can dig quickly. If it feels threatened, it may dig into the ground so that only its spiny back is showing.

Finally, an echidna may curl into a ball. This helps protect its face, legs and soft body parts.

These adaptations help echidnas stay safe in their environment.



Echidnas



An echidna is an Australian mammal.



Echidnas are unusual because they are mammals that lay eggs. They have spines, strong claws and long sticky tongues.



DID YOU KNOW?

Echidnas can eat up to 20,000 ants or termites in one day!



Spines

Sharp spines help protect echidnas from predators.

Long sticky tongue

Echidnas use their long, sticky tongues to catch ants and termites.

Strong claws

Powerful claws help echidnas dig for ants and termites.

Adaptation Focus

Camouflage

Camouflage is an adaptation that helps a living thing blend into its surroundings.

Camouflage can involve:

- colour
 - pattern
 - shape
 - texture
 - movement
-

How Camouflage Helps

Camouflage can help animals in two main ways.

1. It helps prey hide from predators.

For example, an insect that looks like a leaf may avoid being eaten by birds.

2. It helps predators sneak up on prey.

For example, a tiger's stripes help it blend into tall grass and shadows.

Mini Explanation

How Camouflage Helps Animals Survive

Camouflage helps animals survive by making them difficult to see.

Firstly, an animal's colour or pattern may match its habitat. For example, a sandy-coloured lizard can be hard to see in the desert.

Secondly, camouflage can protect prey from predators. If a predator cannot see the animal easily, the animal has a better chance of escaping.

Camouflage can also help predators hunt. If a predator blends into the environment, it can move closer to its prey without being noticed.

Therefore, camouflage is an important adaptation because it helps animals hide, hunt and survive.

How Camouflage Helps Animals Survive



INTRO

Camouflage helps animals survive by making them difficult to see.

1

FIRSTLY

An animal's colour or pattern may match its habitat.



Example: A sandy-coloured lizard blending into a desert environment.

2

SECONDLY

Camouflage can protect prey from predators.



If a predator cannot easily see the animal, the animal has a better chance of escaping.



The rabbit's fur and the dry grass hide it from the coyote, giving it a better chance to escape.



The leopard's spotted coat and the tall grass help it stalk prey without being seen.

3

PREDATORS HUNT TOO

Camouflage can also help predators hunt.



If a predator blends into the environment, it can move closer to its prey without being noticed.



THEREFORE,

camouflage is an important adaptation because it helps animals hide, hunt and survive.



HIDE



HUNT



SURVIVE



CAMOUFLAGE = BLENDING IN TO STAY ALIVE

LOOK CLOSELY. NATURE IS AMAZING!



Plant Adaptations in Different Habitats

Plants live in many different habitats. Each habitat has different challenges.

Habitat	Challenge	Plant Adaptation	How It Helps
Desert	Little water	Thick stems	Store water
Desert	Water loss	Spines or small leaves	Reduce water loss
Rainforest	Too much shade	Large leaves	Catch more sunlight
Rainforest	Lots of rain	Waxy leaves with pointed tips	Help water drip off
Coastal areas	Wind and salt	Tough leaves	Protect the plant
Wetlands	Very wet soil	Special roots	Help the plant get air
Cold places	Low temperatures	Small leaves or low-growing shape	Reduce damage from cold wind

Animal Adaptations in Different Habitats

Animals also have adaptations that suit their habitats.

Habitat	Challenge	Animal Adaptation	How It Helps
Desert	Heat and little water	Nocturnal behaviour	Avoids daytime heat
Desert	Walking on sand	Wide feet	Helps movement
Arctic	Extreme cold	Thick fur or blubber	Keeps body warm
Ocean	Moving through water	Streamlined body	Helps swimming
Ocean	Breathing underwater	Gills	Takes oxygen from water
Forest	Hiding from danger	Camouflage	Helps animals blend in
Grasslands	Open spaces	Speed	Helps animals escape predators
Trees	Climbing	Claws or gripping hands	Helps animals move and find food

Islamic Reflection

Caring for Living Things

Islam teaches Muslims to care for the natural world.

Plants and animals are part of Allah's creation. They should not be harmed without reason.

The Prophet Muhammad ﷺ taught that planting trees and growing crops can be a form of charity when people, birds or animals benefit from them.

This teaches us that caring for the environment is important.

When we protect habitats, save water, avoid waste and show mercy to animals, we are acting responsibly.

Science and Islam Connection

Science helps us observe the world carefully.

Islam teaches us to reflect on Allah's signs in creation.

Together, science and Islam encourage us to be:

- curious learners
 - careful observers
 - grateful servants of Allah
 - responsible caretakers of the Earth
 - kind towards living things
-

Science Writing Focus

In this booklet, we are practising three science text types.

1. Information Report

An **information report** gives facts about a topic.

It answers questions such as:

- What is it?
- Where does it live?
- What does it look like?
- What does it eat?
- What features does it have?
- How does it survive?

Information Report Structure

Section	Purpose
Title	Names the topic
Opening statement	Introduces the topic
Classification	Tells what group it belongs to
Habitat	Explains where it lives
Appearance	Describes what it looks like
Adaptations	Explains features that help survival
Conclusion	Finishes the report clearly

Useful Sentence Starters

- A _____ is a type of _____.
 - It lives in _____.
 - It has _____.
 - One important adaptation is _____.
 - This helps it survive because _____.
 - In conclusion, _____ is well adapted to its environment.
-

2. Explanation

An **explanation** tells how or why something happens.

It answers questions such as:

- How does this help survival?
- Why does this feature matter?
- How does this process work?
- What happens as a result?

Explanation Structure

Section	Purpose
Title	Names what is being explained
Opening statement	Introduces the topic
Sequenced explanation	Explains ideas in a logical order
Cause and effect	Shows how one thing leads to another
Conclusion	Summarises the explanation

Useful Explanation Words

- firstly
- secondly
- next
- because
- this means
- this helps
- as a result
- therefore
- finally

Useful Sentence Starters

- _____ survives because _____.
 - Firstly, _____ helps by _____.
 - This is important because _____.
 - As a result, _____.
 - Therefore, this adaptation helps _____ survive.
-

3. Labelled Diagram

A **labelled diagram** uses a picture and words to explain information.

A good labelled diagram should be:

- neat
- clear
- accurate
- easy to read

A Labelled Diagram Should Include

Feature	What It Means
Title	Names the diagram
Drawing or image	Shows the living thing clearly
Labels	Name important parts
Arrows or lines	Point to the correct parts
Short notes	Explain how parts help survival

Useful Label Examples

- stores water
 - protects the eyes
 - helps with swimming
 - reduces water loss
 - helps catch prey
 - helps the animal stay warm
 - helps the plant collect sunlight
-

Student Activity 1

Match the Adaptation

Draw a line to match each adaptation to its purpose.

Adaptation	Purpose
Long eyelashes	Stores water
Thick cactus stem	Helps walk on sand
Wide camel feet	Protect eyes from sand
Camouflage	Helps animals hide
Sharp claws	Helps animals dig or catch prey
Webbed feet	Helps animals swim
Thick fur	Keeps animals warm

Student Activity 2

Structural, Behavioural or Physiological?

Write:

- **S** for structural adaptation
 - **B** for behavioural adaptation
 - **P** for physiological adaptation
1. A lizard hides under a rock during the hottest part of the day. _____
 2. A bird has a long beak for reaching nectar. _____
 3. A cactus has spines instead of large leaves. _____
 4. Penguins huddle together to stay warm. _____
 5. A camel has wide padded feet. _____
 6. A nocturnal animal hunts at night. _____
 7. A snake produces venom. _____
 8. A camel's body conserves water. _____

9. A fish has gills. _____

10. A bear hibernates in winter. _____

Student Activity 3

Complete the Explanation

Use the words below to complete the explanation.

Word Bank:

water, spines, desert, roots, survive, stem

Cacti can _____ in the _____ because they have special adaptations. Their thick _____ stores _____. Their _____ help protect the plant and reduce water loss. Their _____ collect water after rain.

Student Activity 4

Create Your Own Labelled Diagram

Choose one living thing:

- camel
- cactus
- echidna
- penguin
- fish
- bird
- kangaroo
- desert plant

Draw it below and label at least **four adaptations**.

Remember to include:

- a title
- a neat drawing or image
- at least four labels
- arrows or lines

- short notes explaining how the adaptations help survival

Diagram:

Student Activity 5

Write an Information Report

Choose one animal or plant and write an information report.

Title

Opening Statement

A _____ is a type of _____.

Habitat

It lives in _____.

Its habitat is _____.

Appearance

It has _____.

It looks like _____.

Adaptations

One adaptation is _____.

This helps it survive because _____.

Another adaptation is _____.

This helps it survive because _____.

Conclusion

In conclusion, _____ is well adapted to its environment because _____.

Modelled Response

Information Report: Camels

Title: Camels

A camel is a type of mammal that is well adapted to desert environments. Camels are large animals that can travel long distances across hot, dry places.

Camels live in deserts. Their habitat is usually sandy, dry and very hot during the day. Deserts also have little water and limited food.

Camels have long legs, wide padded feet, long eyelashes, closable nostrils, tough lips and humps. These features help them survive in harsh desert conditions.

One important adaptation is their wide padded feet. This helps them walk on soft sand without sinking. Another adaptation is their long eyelashes. These protect their eyes from blowing sand. Camels also have humps that store fat, which can be used for energy when food is difficult to find.

In conclusion, camels are well adapted to their environment because their bodies help them move, feed and survive in hot, sandy deserts.

Modelled Response

Information Report: Cacti

Title: Cacti

A cactus is a type of plant that is adapted to dry environments. Many cacti survive in deserts where there is very little rain.

Cacti live in hot and dry habitats. Their habitat often has sandy soil, strong sunlight and limited water.

Cacti have thick stems, spines, waxy coatings and shallow roots. These features help them survive in places where many other plants would struggle.

One important adaptation is the cactus stem. It is thick and can store water for dry periods. Another adaptation is its spines. Spines reduce water loss and protect the plant from animals. Some cacti also have shallow roots that spread out to collect rainwater quickly.

In conclusion, cacti are well adapted to desert environments because their structures help them store water, reduce water loss and survive dry conditions.

Student Activity 6

Write an Explanation

Choose one question and write an explanation.

1. How do camels survive in the desert?
2. How do cacti survive with little water?
3. How does camouflage help animals survive?
4. How do bird beaks help birds eat different foods?
5. How do echidnas protect themselves?

Title

How _____

Opening Statement

Explanation

Firstly, _____.

This helps because _____.

Secondly, _____.

This is important because _____.

Finally, _____.

As a result, _____.

Conclusion

Therefore, _____.

Modelled Response

Explanation: How Camels Survive in the Desert

Camels survive in the desert because they have special adaptations that help them live in hot, dry and sandy environments.

Firstly, camels have long eyelashes. This helps because their eyelashes protect their eyes from blowing sand. Their nostrils can also close, which helps keep sand out during windstorms.

Secondly, camels have wide padded feet. This is important because their feet spread their weight across the sand and stop them from sinking easily.

Finally, camels have humps that store fat. As a result, they can use this fat for energy when food is difficult to find.

Therefore, camels can survive in the desert because their adaptations help them deal with heat, sand and limited food.

Modelled Response

Explanation: How Cacti Survive With Little Water

Cacti survive with little water because they have adaptations that help them store water and reduce water loss.

Firstly, cacti have thick stems. This helps because the stems can store water for dry periods.

Secondly, cacti have spines instead of large leaves. This is important because large leaves can lose a lot of water, while spines help reduce water loss.

Finally, many cacti have shallow roots that spread out near the surface. As a result, they can quickly collect water when rain falls.

Therefore, cacti can survive in dry environments because their adaptations help them save and collect water.

Modelled Response

Explanation: How Camouflage Helps Animals Survive

Camouflage helps animals survive by allowing them to blend into their surroundings.

Firstly, camouflage can help prey hide from predators. This helps because predators may not see the animal easily, giving the prey a better chance of escaping.

Secondly, camouflage can help predators hunt. This is important because a predator that blends into its environment can move closer to its prey without being noticed.

Finally, camouflage can involve colours, patterns, shapes or textures. As a result, animals can match their habitat more closely.

Therefore, camouflage is an important adaptation because it helps animals hide, hunt and survive.

Modelled Response

Explanation: How Bird Beaks Help Birds Eat Different Foods

Bird beaks help birds eat different foods because each beak shape suits a particular type of food.

Firstly, some birds have long thin beaks. This helps because they can reach nectar inside flowers or catch small insects.

Secondly, some birds have strong thick beaks. This is important because they can crack seeds and nuts.

Finally, some birds have sharp hooked beaks. As a result, they can tear meat when eating prey.

Therefore, bird beaks are important adaptations because they help birds collect and eat the food they need to survive.

Modelled Response

Explanation: How Echidnas Protect Themselves

Echidnas protect themselves using both body features and behaviours.

Firstly, echidnas have sharp spines on their backs. This helps because predators find it difficult to bite or attack them.

Secondly, echidnas have strong claws. This is important because they can dig quickly into the ground when they feel threatened.

Finally, echidnas can curl into a ball. As a result, their soft body parts are protected and their spines face outwards.

Therefore, echidnas are able to protect themselves because their spines, claws and behaviours help keep them safe.

Student Activity 7

Islamic Reflection

Complete the sentences.

One thing I learnt about Allah's creation is:

One adaptation that amazed me was:

Muslims should care for plants and animals because:

One way I can care for Allah's creation is:

Modelled Response

One thing I learnt about Allah's creation is that every living thing has features that help it survive in its environment. This shows the wisdom and care in Allah's creation.

One adaptation that amazed me was the cactus stem because it can store water and help the cactus survive in the desert.

Muslims should care for plants and animals because they are part of Allah's creation. Islam teaches us to show mercy and to avoid harming living things without reason.

One way I can care for Allah's creation is by saving water, not wasting food, planting trees and being kind to animals.

Quick Quiz

Answer in full sentences.

1. What is an adaptation?

2. What is a habitat?

3. What is a structural adaptation?

4. What is a behavioural adaptation?

5. What is a physiological adaptation?

6. How do wide feet help camels?

7. Why do cacti have spines?

8. How does camouflage help animals survive?

9. What is the difference between a predator and prey?

10. Why are labelled diagrams useful in Science?

11. Which text type gives facts about a topic?

12. Which text type explains how or why something happens?

13. What does Islam teach us about caring for plants and animals?

14. Which ayah reminds us that Allah created every living creature from water?

Quick Quiz

Modelled Answers

1. An adaptation is a feature, body part or behaviour that helps a living thing survive in its environment.
 2. A habitat is the place where a plant or animal naturally lives.
 3. A structural adaptation is a physical feature or body part that helps a living thing survive, such as claws, spines, fur or wide feet.
 4. A behavioural adaptation is something an animal does to survive, such as migrating, hiding, hunting at night or huddling together.
 5. A physiological adaptation is something that happens inside a living thing's body to help it survive, such as conserving water or producing venom.
 6. Wide feet help camels walk on soft sand because they spread the camel's weight and stop it from sinking easily.
 7. Cacti have spines because spines help reduce water loss and protect the plant from animals.
 8. Camouflage helps animals survive by allowing them to blend into their surroundings. This can help prey hide from predators or help predators hunt.
 9. A predator is an animal that hunts another animal for food. Prey is an animal that is hunted by another animal.
 10. Labelled diagrams are useful in Science because they show parts clearly and help the reader understand information quickly.
 11. An information report gives facts about a topic.
 12. An explanation explains how or why something happens.
 13. Islam teaches us to care for plants and animals because they are part of Allah's creation and should not be harmed without reason.
 14. Surah An-Nur 24:45 reminds us that Allah created every living creature from water.
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Final Reflection

Complete these sentences.

Today I learnt that adaptations are important because:

One amazing adaptation I discovered was:

A question I still have is:

Studying living things can remind Muslims of Allah's creation because:

Final Reminder

Plants and animals have amazing features and behaviours that help them survive.

Some adaptations help living things find food.

Some help them stay safe.

Some help them save water.

Some help them move, hide, hunt or stay warm.

In Science, we observe these details carefully.

In Islam, we reflect on them thoughtfully.

Together, science and faith encourage us to become careful observers, grateful learners and responsible caretakers of the Earth.