

THREE AMAZING PLACES – ONE PLANET

Different places, different climates, unique adaptations – all important!

STUDENTS
COMPARE:



AUSTRALIAN DESERT



SWEDISH BOREAL FOREST



MEXICAN TROPICAL RAINFOREST



CLIMATE



Arid (dry) climate.

Clear skies, very low humidity and lots of sunshine.



Subarctic climate.

Long, cold winters and short, mild summers.



Tropical climate.

Warm and humid all year round.



RAINFALL



Very low rainfall.

Usually less than 250 mm per year.



Moderate rainfall.

Around 400–700 mm per year, often as snow in winter.



Very high rainfall.

1,500 – 4,000+ mm per year.



TEMPERATURE



Hot days, cool nights.

Summer days can be over 40°C. Nights can drop below 10°C in winter.



Cold winters, mild summers.

Winters often below -10°C. Summers around 15–20°C.



Warm all year.

Usually between 20–30°C with little change.



WATER AVAILABILITY



Water is scarce.

Very limited water from rain, underground aquifers or waterholes.



Water is available.

Rivers, lakes and melting snow provide fresh water for plants, animals and people.



Water is abundant.

Lots of rain keeps rivers flowing and supports rich plant and animal life.



PREDATORS



Dingoes, wedge-tailed eagles, snakes and lizards.



Lynx, wolves, owls, foxes and eagles.



Jaguars, snakes, crocodiles, birds of prey and big cats.



SHELTER



Rock crevices, burrows, shallow caves and shade under bushes.



Among trees, in burrows or dens, and under thick snow in winter.



In trees, on branches, under large leaves and in thick vegetation.



FOOD SOURCES



Seeds, leaves, insects, small mammals, reptiles and nectar.



Berries, seeds, pine cones, insects and mammals.



Fruits, leaves, flowers, insects, fish, birds, amphibians and small mammals.



EVERY PLACE IS SPECIAL.



EVERY PLACE IS HOME.



LET'S RESPECT AND PROTECT THEM ALL!



AUSTRALIA



HOW BEHAVIOURS HELP LIVING THINGS SURVIVE.

Australia has hot days, cool nights and limited water in many places.
Living things have amazing behaviours that help them survive in these conditions.



1. NOCTURNAL BEHAVIOUR

Some animals are active at night and rest during the day to avoid the heat.



HOW IT HELPS

- Avoids extreme daytime heat.
- Finds food when it is cooler.
- Reduces water loss.



EXAMPLES



Powerful owls hunt at night.



Bilbies search for insects and seeds at night.



Possums come out at night to find food.



2. BURROWING

Many animals dig or live in burrows underground to stay safe and cool.



HOW IT HELPS

- Keeps animals cool in hot weather.
- Protects from predators and bushfires.
- Maintains humidity and saves water.



EXAMPLES



Bandicoots dig burrows to live and raise their young.



Termites build mounds that stay cool inside.



Many reptiles hide in burrows to escape the heat.



3. WATER CONSERVATION

Animals and plants have clever ways to save water in dry environments.



GETS WATER FROM FOOD

Kangaroos get most of their water from plants they eat.



COLLECTS DEW

Thorny devils channel dew to their mouths through tiny grooves in their skin.



USES LESS WATER

Many plants have waxy leaves or small leaves to reduce water loss.

HOW IT HELPS

- Helps living things survive with very little water.
- Prevents dehydration in hot, dry conditions.
- Allows animals to live in areas where water is scarce.



EXAMPLES



Camels store fat in humps and can go long time without water.



Acacia trees have tiny leaves and deep roots to find water.



Black cockatoos eat dry seeds that need very little water.

Different behaviours help living things survive in Australia's unique environment.

Adapt, survive, thrive!





SWEDEN

HOW BEHAVIOURS HELP LIVING THINGS SURVIVE.

Sweden has long, cold winters and short summers. Living things have amazing behaviours that help them survive in these conditions.



1. HIBERNATION

Some animals sleep for many months during the long, cold winter to save energy.



HOW IT HELPS

- Saves energy when food is hard to find.
- Keeps animals warm and safe.
- Helps them survive until spring.



EXAMPLES



Hedgehogs sleep in nests made of leaves and grass.



Bears hibernate in dens and don't eat or drink.



Badgers stay in underground sets and live off fat stored in autumn.



2. MIGRATION

Some animals travel long distances to find warmer places with more food during winter.



HOW IT HELPS

- Allows animals to find food and milder weather.
- Helps them avoid the harsh winter.
- They return in spring to breed and raise young.



EXAMPLES



Cranes fly to warmer countries like Spain or Africa.



Swallows migrate all the way to Africa for the winter.



Arctic terns travel the longest distance of any bird – to Antarctica!



3. LIVING IN FAMILY GROUPS

Many animals live in groups or families to help protect each other and survive.



HOW IT HELPS

- More eyes to look out for danger.
- Helps find food and raise young.
- Keeps everyone warm and safe.



EXAMPLES



Reindeer travel and stay together in large herds.



Wolves hunt and care for their pups as a family.



Long-tailed tits huddle in flocks to stay warm in winter.

Different behaviours help living things survive in Sweden's cold climate.



ADAPT • SURVIVE • THRIVE





MEXICO

TROPICAL RAINFOREST

HOW BEHAVIOURS HELP LIVING THINGS SURVIVE

Mexico's tropical rainforest is hot, wet and full of life!



1. CAMOUFLAGE

Many rainforest animals blend in with their surroundings so they are harder to see.



HOW IT HELPS:

- ✓ Keeps animals safe from predators.
- ✓ Helps predators get closer to their prey.
- ✓ Makes it easier to hide in the dense forest.



EXAMPLES:



Jaguar

Spotted coat blends with shadows.



Leaf-tailed Gecko

Looks like a leaf.



Stick Insect

Looks like a twig.



2. TREE CANOPY LIVING

Many animals live high in the tree canopy, the top layer of the rainforest.



HOW IT HELPS:

- ✓ Gives access to more food (fruit, leaves and flowers).
- ✓ Keeps animals away from many predators on the ground.
- ✓ Provides shelter and safe places to rest and raise young.



EXAMPLES:



Spider Monkey

Lives high in the canopy and swings through the trees.



Toucan

Uses the canopy to find fruit.



Sloth

Spends most of its life in the treetops.



3. NIGHT HUNTING

Some rainforest animals are active at night (nocturnal) when it is cooler and darker.



HOW IT HELPS:

- ✓ Avoids the daytime heat.
- ✓ Helps them sneak up on prey.
- ✓ Reduces competition with daytime animals.



EXAMPLES:



Ocelot

Hunts small animals at night.



Frog

Catches insects in the cooler night air.



Owl

Hunts in the dark using excellent night vision and quiet flight.

Different behaviours... **ADAPT • SURVIVE • THRIVE!**

Living things in Mexico's tropical rainforest use clever behaviours to stay alive!



SURVIVAL SCIENTIST INVESTIGATION

Explore. Compare. Investigate. Survive!

Different places.
Different challenges.
Amazing adaptations!



AUSTRALIA DESERT



SWEDEN BOREAL FOREST



MEXICO TROPICAL RAINFOREST



1 How do animals survive extreme heat?

Beat the Heat!

- Nocturnal behaviour – active at night.
- Burrowing in cool ground.
- Large ears help release body heat.



Stay Cool in Summer!

- Seek shade in cool forests.
- Rest during the hottest part of the day.
- Find cool water to drink.



Keep Cool in the Canopy!

- Live in shady rainforest layers.
- Pant or sweat (some animals).
- Drink water and eat juicy fruit.



2 How do plants survive with little water?

Save Every Drop!

- Waxy leaves to reduce water loss.
- Deep roots to reach underground water.
- Store water in stems or leaves.



Built for the Boreal!

- Needle-shaped leaves to reduce water loss.
- Thick bark protects from drying.
- Grow close to the ground.



Rainforest Survival!

- Broad leaves to catch rain.
- Drip tips to shed excess water.
- Shallow roots spread wide to absorb surface water.



3 Which behavioural feature best protects animals from predators?

Hide or Disappear!

- Camouflage in sand and rocks.
- Burrow to hide underground.
- Freeze and stay still.



Blend and Escape!

- Thick fur for camouflage.
- Stay in groups for safety.
- Quick to climb trees or run.



Hide in Plain Sight!

- Camouflage with colours and patterns.
- Stay in trees out of sight.
- Use speed to escape.



4 How do animals survive cold environments?

Desert Winters!

- Some animals slow down their activity.
- Burrow to stay warm.
- Grow thicker coats.



Cold Weather Experts!

- Thick fur or feathers.
- Hibernation to save energy.
- Store fat for warmth.



High Places, Cool Nights!

- Move to lower valleys.
- Grow thicker hair.
- Snuggle in groups.



5 Which country has the greatest survival challenges?

Extreme Heat & Drought

- Very hot days.
- Little rain.
- Finding water is hard.



Long, Cold Winters

- Freezing temperatures.
- Snow covers food.
- Short growing season.



Rain, Heat & Predators

- Lots of rain and insects.
- Many predators.
- Competition for food and space.



INVESTIGATE!

Use what you have learned to answer each question.

1 How do animals survive extreme heat?

2 How do plants survive with little water?

3 Which behavioural feature best protects animals from predators?

4 How do animals survive cold environments?

5 Which country has the greatest survival challenges?



Think like a scientist!
Observe. Compare. Explain.
Draw conclusions!



Every living thing has amazing adaptations.



ADAPT



SURVIVE



THRIVE



Our world is full of challenges –
but nature always finds a way!



NATURE INSPIRES HUMANS

Biomimicry.



SCIENTIFIC APPLICATIONS.

Scientists study nature to solve real-world problems and create innovative solutions.



HOW COMMUNITIES USE SCIENTIFIC KNOWLEDGE.

Communities use these ideas to improve lives, build sustainable solutions and protect our future.

ORGANISM

HUMAN DESIGN



GECKO

Tiny hairs on gecko feet create strong grip on almost any surface.



CLIMBING TECHNOLOGY

Adhesive materials and climbing gear inspired by gecko feet improve safety and performance.



KINGFISHER

Long beak and streamlined body reduce splash and drag when diving.



BULLET TRAIN

Shinkansen nose shape inspired by kingfisher beak reduces noise and air resistance.



LOTUS LEAF

Waxy surface repels water and dirt, keeping leaf clean.



SELF-CLEANING SURFACES

Paints, fabrics and building materials mimic lotus leaves to stay cleaner for longer.



THORNY DEVIL

Skin channels water to mouth through tiny grooves.



WATER HARVESTING

Surfaces and materials collect and channel water in dry environments.



OWL

Special feathers reduce noise for silent flight.



QUIET AIRCRAFT

Aircraft wings and engines designed to reduce noise, inspired by owl feathers.



CACTUS

Stores water in thick stems and reduces water loss.



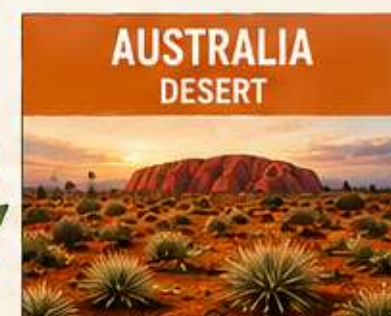
WATER STORAGE

Tanks and materials store water efficiently for homes, farms and communities.



RESEARCH INVESTIGATION

Compare. Investigate. Explain. Inspire.



LEARNING INTENTION

We are learning to explain patterns and relationships using scientific evidence.



SUCCESS CRITERIA

- ✓ I can compare evidence.
- ✓ I can explain survival strategies.
- ✓ I can prepare scientific information for an audience.



ACTIVITIES

Students complete their investigation.

STUDENTS USE:

- labelled diagrams
- comparison tables
- Venn diagrams
- scientific vocabulary
- captions

LABELLED DIAGRAMS

Show and label important features clearly.



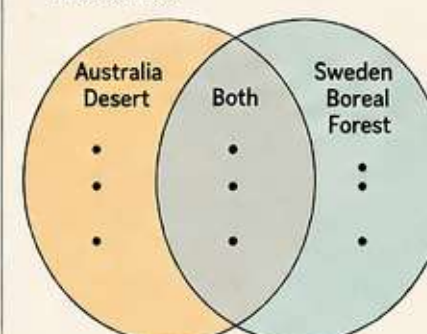
COMPARISON TABLES

Organise information to compare.

Feature	Australia Desert	Sweden Boreal Forest	Mexico Rainforest
Climate	Hot, dry	Cold winters, mild summers	Hot, wet
Water availability	Very low	Moderate	High
Plant adaptations	Succulents, small leaves	Needle-like leaves	Large leaves, drip tips
Animal adaptations	Nocturnal, burrowing	Hibernation, thick fur	Camouflage, tree living

VENN DIAGRAMS

Show similarities and differences.



SCIENTIFIC VOCABULARY

Use precise words.

adaptation
camouflage
conservation
nocturnal
migration

migration
habitat
predator
temperature

CAPTIONS

Add captions to explain your images and diagrams.



Owl's silent flight feathers help it hunt without being heard.

REQUIRED SECTIONS:

1 INVESTIGATION QUESTION

Write a clear, testable question about survival in your chosen habitat.



2 HABITAT

Describe the habitat and include a labelled diagram.



3 STRUCTURAL FEATURES

Describe the physical features that help living things survive.



4 BEHAVIOURAL FEATURES

Describe the behaviours that help living things survive.



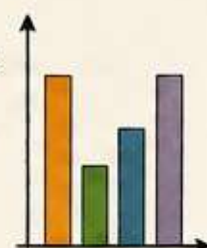
5 SURVIVAL CHALLENGES

Identify the challenges living things face in this habitat.



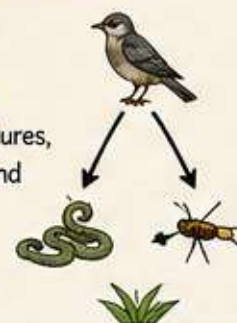
6 PATTERNS

What patterns did you observe in your data or information?



7 RELATIONSHIPS

Explain the relationships between features, behaviours and survival.



8 COMPARISON BETWEEN COUNTRIES

Compare the habitats. What are the similarities and differences?



9 BIOMIMICRY EXAMPLE

Choose one organism and explain how its features inspire human designs.



Example: Lotus leaf → self-cleaning surfaces

10 SCIENTIFIC CONCLUSION

Summarise your findings. What did you learn about survival in this habitat?



PRESENT YOUR FINDINGS USING SCIENCE TOOLS!

Ask questions. Collect evidence. Find patterns.

SCIENCE HELPS US UNDERSTAND THE WORLD AND SOLVE REAL PROBLEMS!



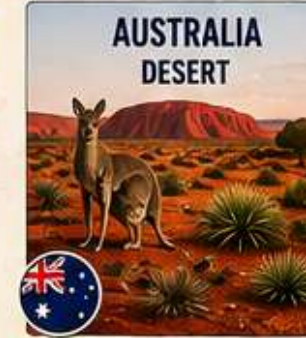


INTERNATIONAL SURVIVAL SCIENCE MUSEUM

(ASSESSMENT)

EXPLORE. COMPARE. EXPLAIN. INSPIRE.

Living things have amazing ways to survive.
Science helps us understand, protect and learn from nature.



LEARNING INTENTION

We are learning to communicate scientific explanations.

SUCCESS CRITERIA

- I can explain survival using evidence.
- I can compare habitats.
- I can communicate for an audience.

ASSESSMENT

Students create an Informative Library Display for an International Survival Science Museum.

EACH DISPLAY INCLUDES:

COUNTRY The name and location of the country.	HABITAT The natural environment where living things live.	STRUCTURAL FEATURES Physical features that help living things survive.	BEHAVIOURAL FEATURES Actions or behaviours that help living things survive.	SURVIVAL CHALLENGES The extreme conditions or threats living things face.	COMPARISON WITH ANOTHER COUNTRY How is it similar or different to another habitat?
PATTERNS IDENTIFIED What patterns did you observe in your data or information?	BIOMIMICRY EXAMPLE How does nature inspire human designs or solutions?	HOW SCIENTIFIC KNOWLEDGE HELPS PEOPLE How communities use scientific knowledge to solve problems and improve lives.	SCIENTIFIC VOCABULARY Use scientific words to explain your ideas clearly. habitat adaptation behaviour survival predator ecosystem	LABELLED DIAGRAMS Draw and label important features clearly.	REFERENCES List the sources of your information.

PRESENT TO AN AUDIENCE

Students present their display to visiting classes.



SCIENCE PASSPORT

Visitors complete a Science Passport recording one interesting survival strategy from each country.

Science Passport
My discoveries around the world!

AUSTRALIA What I learned: 	SWEDEN What I learned: 	MEXICO What I learned:
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My favourite discovery: _____

SCIENTIFIC VOCABULARY

Habitat	Mimicry	Migration	Biomimicry	Conclusion
Environment	Predator	Competition	Pattern	Scientific Explanation
Structural Feature	Prey	Survival	Relationship	Comparison
Behaviour	Nocturnal	Biodiversity	Biodiversity	Adaptation*
Camouflage	Hibernation	Ecosystem	Evidence	

*Adaptation (historical term discussed in context of evolution over generations)

EXAMPLES OF BIOMIMICRY

Gecko feet inspire climbing technology.	Kingfisher beak inspires bullet train design.	Lotus leaf inspires self-cleaning surfaces.	Cactus inspires water storage systems.
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WHY IT MATTERS

By understanding how living things survive, we can protect ecosystems, solve human problems and build a better future.

Protect nature	Inspire innovation	Support communities	Sustain our planet
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OBSERVE. INVESTIGATE. COMPARE. EXPLAIN. COMMUNICATE. MAKE A DIFFERENCE.