

Ecosystems / Endangered Species

God is a Powerful Creator

God is Protector

Spiritual Awareness: God's original perfect creation; God is in charge of all creation; our responsibility to protect God's creation

God is Creator

God's original creation was perfect. When God had finished the creation he stated that it was 'good'. A good and perfect creation cannot include killing and death. This means that in the Garden of Eden, the original perfect ecosystem, all animals ate plants, (Gen 1:29).

The Fall brought about new types of ecosystems where some animals ate plants, but other animals ate animals for survival. The ecosystems in our world today are a result of a curse that came into the world because of man's sin. One day God will restore ecosystems to perfection, where the lion and lamb will graze peacefully together.

God is Protector

We have been given a mandate to care for the creation, (Gen 1:28). Caring for the creation involves protecting the plant and animal species on our planet. Taking responsibility for environmental protection is a response to 'God is Protector'. We protect the creation on God's behalf. Protection of the environment involves wisdom and responsibility.

Our response to 'God is a Powerful Creator'

Because God is a Powerful Creator, I will...

- Appreciate God's ability to supernaturally create.
- Ask God to help me create new things, so that I can bless others.
- Trust in a mighty, supernatural God.
- Care for and protect the living things that He has created.
- Appreciate the greatness of God and recognize that He is in control of all He has made.
- Thank Him for His provision of air, and recognize that I need Him as I need the air I breathe.
- Recognize that I am wonderfully made and thank Him for making me as I am.
- Recognize that God is Lord and King of the universe and has everything in control.
- Recognize that in order to be the person God wants me to be, I must make Jesus Lord and King of my own life.

Supporting devotional resource

Themes for Christian Studies 1, (Life): God is the giver of life

Themes for Christian Studies 5, (Creator): God created us with the ability to choose

Biblical references

Bible stories and passages

Genesis 1 - The creation

Genesis 2:19 - Now the Lord had formed out of the ground all the beasts of the field and the birds of the air. He brought them to the man to see what he would name them; and whatever the man called each living creature, that was its name. (See *Themes for Christian Studies 5, Creator*, for the story, 'Adam names the animals'.)

Isaiah 11:6-9 – the restoration of the perfect Creation – the wolf and lamb will live peacefully together.

Psalms 65:6 -13 – God is in charge of nature.

Memory verses

Genesis 1:28 – God said, “I am putting you in charge of the fish, the birds and all the wild animals”. (GNB)

Psalms 150:6 - Praise the Lord, all living creatures!

Psalms 148:9-10 – Praise Him, hills and mountains, fruit-trees and forests; all animals, tame and wild, reptiles and birds.

1 Chronicles 29:11 – You are great and powerful, glorious, splendid and majestic. Everything in heaven and earth is yours, and you are king, supreme ruler over all. (GNB)

Key Questions

About God

What did animals eat in God's original creation?

How do we know that there was no killing?

How did the creation change after Adam and Eve sinned?

Today animals eat other animals. Is this part of God's perfect plan?

Will there be animals in Heaven? What are we told about these animals?

Who is responsible for caring for the creation?

About ecosystems

What is an ecosystem?

What do the animals eat?

Where do they live?

What is the name of where they live? (habitat)

How do they depend on the plants and other animals around them?

What would happen to these animals if their main food source no longer existed?

In what ways have people changed and destroyed the environment in which many animals live?

What is the result of destroying the places where animals live?

Which animals are endangered?

How can we help to protect God's creation?

Outcomes

Students will

Knowledge

- understand that plants and animals depend upon each other and their environment for survival
- be able to define producers, (plants that make their own food), herbivores, (animals that eat plants), and carnivores, (animals that eat other animals), consumers, predators, (animals that hunt for other animals)
- be able to list the requirements for animal and plant life within an ecosystem
- be aware of ways in which people have changed or damaged many of the environments in which animals live
- understand the balance of nature
- suggest ways of preventing the extinction of animal species

Skills

- classify organisms using key words
- draw food webs
- observe organisms using a microscope
- plan and conduct investigations
- research
- suggest ways of saving endangered species

Values

- interest and enthusiasm to participate in investigations
- environmental responsibility
- care for creation

Activities

ECOSYSTEMS

- Select an example of an ecosystem and draw up a flow chart showing chains of dependence within the ecosystem e.g. forest, sea life, pond, lake, African savanna
- Visit a local ecosystem and observe plant and animal life.
- Observe organisms under a microscope if studying pond life.
- List and classify plants and animals within the chosen ecosystem.
- Draw the chain of dependence. Cut out photos or drawings of items in a food chain, e.g. grass, insects, birds, bears. Then each item is glued to a large paper strip. Make an actual "chain" out of the strips by looping them together in a paper chain.
- Work in groups, giving each group 4 animal pictures or animal word cards. Ask students to decide the order of the animals in the food chain. Then they can write each animal's name (and/or glue pictures) on separate strips of paper to make a paper chain.
- Students can make up some food chains, e.g. a food chain that could be found in the sea, a rock pool or in the bush. Remind them that all food chains must start with plants. Create "thinking maps" to show the different levels of a food chain.

- Make a mobile with cut out labeled shapes as follows: the sun at the top, plants next, herbivores next, and predators at the bottom.
- Give the students about 8 different word/picture cards, e.g. grass, eagle, caterpillar, rabbit, cat, mouse, lettuce, pigeon. Ask them to see how many different food chains they can make.
- Give each child a card that they wear, showing the name/picture of an animal/fish. Each card has the number of strings attached to the bottom of it. An animal high on the food chain might have three strings attached and the animal at the bottom of the food chain would not have any strings attached. The children can use the strings to connect together making a straight food chain, and more complex food webs.
- Children work in groups, each group creating a different environment - a rainforest, desert, alpine forest, etc. The students research what kinds of wildlife would live in their environment. They can draw pictures of different kinds of animals, cut them out and glue them where they belong in the picture - birds in the trees, fish in the water, etc.
- Discuss a 'web' and discover how animals can "overlap" into another food chain - thus creating a web.

ENDANGERED SPECIES

- Look for signs of man's intervention, e.g. pollution
- Discuss the problems caused by man upsetting the balance, or damaging the homes of plants and animals.
- Discuss ways in which introduced species have upset the balance of nature in certain areas.
- Read the story, *Adam Names the Animals*, from *Themes for Christian Studies 5, (Creator)*.
- Discuss the responsibility God gave Adam in protecting and caring for the animals.
- Discuss the meanings of 'extinct' and 'endangered'. Ask students what they think might happen to plants and animals that depend on an animal that has become extinct.
- List reasons for the vast number of species facing extinction.
- List the animals that are already extinct, and study one of these animals in detail.
- Mark on a map some of the world's endangered species.
- Suggest ways in which we may be able to prevent further extinction of plant and animal species.
- Play a simulation game: Assign each student the role of a plant or animal within an ecosystem, (more than one student can play the same role). Ask everyone to stand on one side of the classroom. Then ask one "plant" or "animal" to step out of the picture. For example, you could say, "Will all the trees please sit down?" The children taking their seats would represent the dying of trees. Ask students if any other species depend on the trees, e.g. some animals may eat the leaves; some birds may eat insects from the trees. Now certain animals/birds/insects have to sit down.
- Use the simulation game to discuss dependence of living things within an ecosystem.

Assessment

1. Show the students pictures of human activities such as construction and recreation. Ask them to then explain how the activities in each picture might affect animals.
2. Ask students to brainstorm the reasons why they think some species might be in trouble, in addition to the ecosystem-related reasons they have discussed. Can they think of any ways in which human activities might affect the lives of animals?
3. Ask students to make a poster showing two scenarios: On one side they draw pictures of animals in their natural habitats. On the other side, they draw examples of how human activities might cause problems for the animals.
4. What have I learned from the study of ecosystems...
 - about God?
 - about doing what God wants me to do?
 - about the Bible?

Link to Australian Curriculum

Science Year 4: Biological Sciences

Learning Connections

English: Writing on how to save an animal on the brink of extinction; researching information; Beacon Media animal stories - see *Primary Literacy* for "On Safari"

Mathematics: for animals facing extinction, graph statistics on animal populations in an area over the past 50 years

Social Studies/history: impact of humans on ecosystems over history

Art: drawings and collages of living things and their environments

Thinking Skills: How can we stop animals from becoming extinct?

Additional Beacon Media resource:

Visual Language Unit: 'Living Things' – See Primary Units of Study:

Related Building Blocks Unit: Marine life