Research Cards Year 7

Research cards can be laminated and used for individual pieces of research.

It is not necessary to follow through the pages in order.

This means that in a class of 30, a few sets can be prepared and shared around.

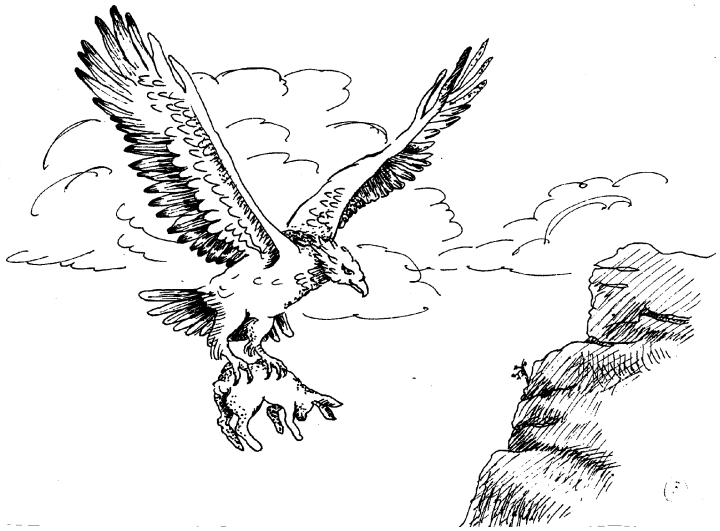
Students can work together in pairs.

Research topics

God is Provider: Eagles; Birds and flight
God is our Saviour: Pacific Islands Facts
God is Pure-Holy: Pollution & recycling
God is Creator: Dinosaurs; Landforms & bodies of water
God is Wise: Time & Work
God is Protector: The Immune System
God is Truth: Electricity

Eagles' first flight

On a rocky ledge the bird watchers could see an eagle's nest through their binoculars. The nest was a scatter of large sticks and grass that spread about two metres across the ledge. There, beside the nest, on the rock, was a small animal that the mother bird had captured earlier. Two young eagles were standing beside the carcass, picking away at the flesh while the mother bird stood on the opposite side also feeding from it.



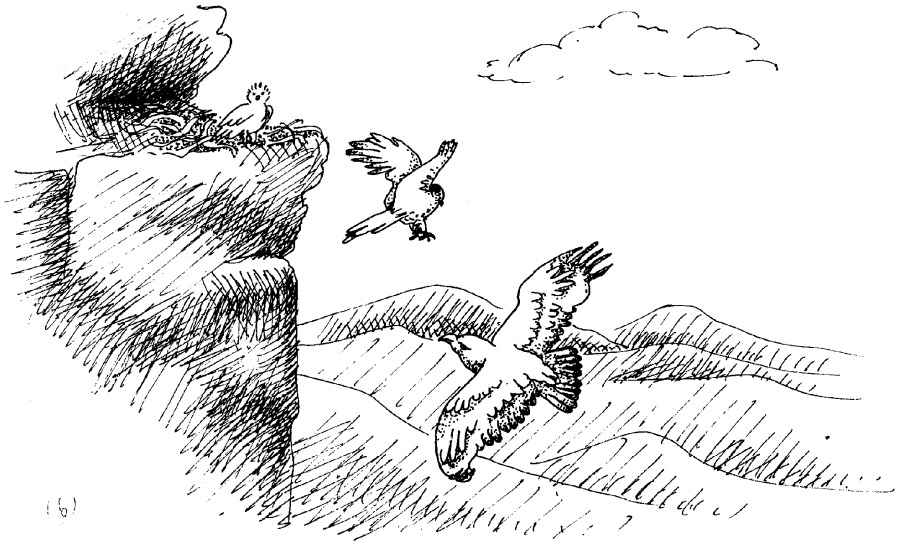
It seemed that the mother eagle was teaching the young how to tear off bite-sized pieces of flesh from the carcass with their sharp, curved beaks. The young birds still had most of their fluffy baby feathers that were beginning to moult, to be replaced by speckled adult brown and white plumage. They

flapped their wings constantly as they stood feeding on the ledge.

As the birdwatchers quietly observed the mother and two babies, they noticed another bird hovering high overhead. This was the father eagle. The parent birds usually stay together and mate year after year. Not all birds remain partners for life, but eagles mostly do. The father watched his mate and the babies, and also watched that the birdwatchers did no harm.

After a few days the bird watchers returned to the rocky outcrop and watched the young birds take their first flying lesson. The mother began to scatter the sticks of the nest with her beak. The young ones began to flap about, their wings showing greater strength than before. Then the mother pushed edge of the ledge. She perched on the ledge beside them, then

flew off into the air and returned after circling around. She repeated this several times as the young looked on. Then she landed behind one of them and gave it a push with her beak. It over-balanced and suddenly found itself launched in mid-air. Flapping its wings furiously it soon discovered that this action kept if from dropping to the ground below.



Then the mother dropped down to the lower edge, calling to the baby, which flapped its way through the air to land beside its mother. It perched on this new ledge, trembling and calling out in alarm at this new experience. It called even louder when its mother left it alone in this new place. But mother was now busy with the other young bird.

She returned to the first ledge and put her second baby through the same routine, until all three birds were perched on the rocky ledge, calling loudly.

If bird language could be translated into our language it would go something like this:

Mother bird: "Good children. That was your first try at flying. Now you know how it feels to let the air carry you along as you move your wings up and down. The more you do this the stronger your wings will be; then you will be able to soar high up in the sky like your father and I do. Now, we have to get you back to the nest."

Babies: "Oh Mother! Please can't we stay here, now you got us here? It's scary hanging in the air with no rocks underneath!"

Mother: "No, you were made to fly. You have wings that will take you high up in the sky, and you are big enough now to use them. After you can fly well, I will teach you to find your own food. The time is coming when your father and I must build a new nest ready for the next eggs I will lay. Then there will be more baby eagles for us to feed and teach. So I must have you flying and caring for yourselves very soon."

With that, the mother eagle moved over behind the first baby and again gave it a gentle nudge that sent it flapping through the air again. Instantly the mother left the ledge and dived below the baby to encourage it to keep flapping and to guide it back to the nest. It squawked and flapped its way up to the

security of the familiar nest and then waited trembling, as mother escorted the other fledgling back again.

God made each creature different and gave each one special abilities. He made each person different too, and each of us has special things we can do as well.

God tells us about the eagle in Job 39: 27 – 29:

Does the eagle soar at your command, and build its nest on high?

It dwells on a cliff and stays there at night; a rocky crag is its stronghold.

From there it looks for food; its eyes detect it from afar.

Activities

1. Describe an eagle's nest. Explain how and where it is constructed.
2. What foods do eagles eat? Describe how they get their food.
3. Explain the terms 'herbivorous' and 'carnivorous'. To which group does the eagle belong?
4. How do you think the baby eagles would feel as they are learning to fly?
5. Make a list of the things the mother does to show that is cares for the young birds.
6. How does the father bird care for the young?
7. Write the meaning of these words: carcass escorted fledgling

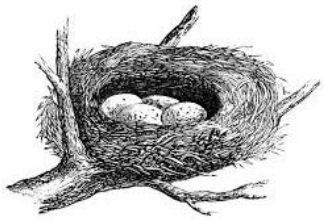
Birds and Flight 1
About birds

All birds have wings, although not all birds can fly. Kiwis, penguins, emus and ostriches are birds which have wings but do not fly.

A bird's blood is warm. Even penguins have warm blood.

All birds lay eggs. Some birds make their nests in trees. Some birds make their nests on the ground. Some birds make their nests in holes in banks.

Eggs can be white, coloured or speckled. All birds keep their eggs warm.

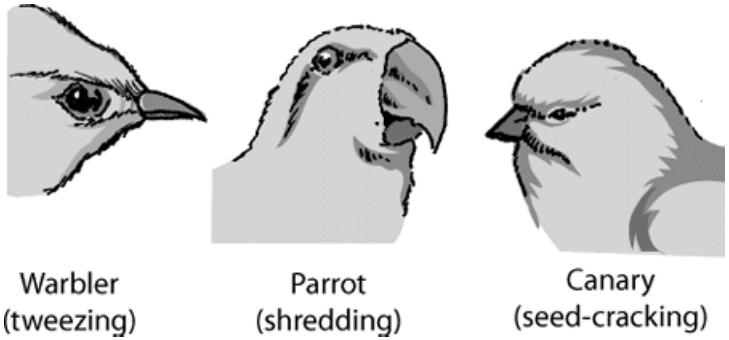


Some birds eat insects. Some birds eat seeds. Some birds eat worms, some birds eat fish. Some birds eat small animals.

1. Draw a picture of a bird that cannot fly.
2. Name a bird that builds a nest in a tree.
3. Name a bird that makes a nest on the ground.
4. Why do birds keep their eggs warm?
5. Name a bird that eats fish or small animals.

Birds and Flight 2
Food and beaks

Birds have no teeth but have beaks. There are many different kinds of beaks.



All birds have backbones.

Birds are not mammals. They do not feed their young on milk but find food to feed their babies.

1. Name a bird that eats seeds.
2. Name a bird that eats insects.
3. Name a bird that eats worms.
4. What do mother birds feed their babies?
5. Draw some birds showing different kinds of beaks.

Birds and flight 3
Types of birds

Perching birds
More than half of the different types of birds in the world are perching birds, for example, hens, finches and wrens. They have special feet for gripping the branches. Three toes point forward and one points backwards. This means that the bird can sleep without falling off its perch.

Birds of prey
With their sharp talons, hooked beak, excellent eye-sight and powerful wings, birds of prey are designed for hunting. Many birds of prey, such as eagle and hawks, spot their prey from the air. It may be a fish, a mouse or a snake. Then they swoop down and scoop it up with their feet.

Water birds
Many birds live near rivers, lakes or the sea. Ducks, swans and geese have waterproof feathers and webbed feet for swimming. Flamingoes have long legs for wading through shallow water. To feed, they stick their heads upside-down in the water and catch tiny water animals with their beaks.

Flightless birds
Not all birds can fly but they have other ways of getting about. Penguins are fast swimmers, using their wings and flippers. Ostriches and emus have long legs and are very fast runners.

Name and draw one bird from each group above. Write a sentence or two about each bird.

Birds and flight 4
Long journeys

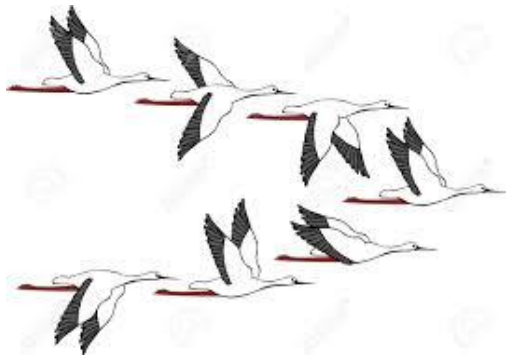
Some birds make long journeys to find warmer places to live. In places with cold winters, there is less food for the birds, so they fly together in a group to a warmer place that has more food. Then they fly back again for the summer. This is called migration.

Birds find their way by watching the sun during the day and following the stars by night. Something inside them acts like a clock. It tells them when to set off.

Before they set off birds eat plenty of food to store up energy for their long journey.

Migrating birds travel over oceans, deserts, mountains and arctic regions.

1. Why do birds migrate?
2. How do they find their way?
3. Who do you think gave them the ability to know when it is time to set off?



Birds and flight 5
A bird's body

To help birds fly, God made their bodies very light and streamlined. This means they have a smooth shape so they can slip through the air easily.

Feathers
Birds are the only animals that have feathers. Small birds have about 1,000 feathers. Large birds can have as many as 25,000.

Eggs
All birds lay eggs. God planned this so that they would not have to carry their young around inside them before they are born.

Wings
Birds have wings instead of arms. They are strong and light enough to make a bird fly when it flaps them. This makes the air pass through.

Necks
Birds have very flexible necks. They can turn their heads backwards to clean themselves.

Ears
A bird's ears are hard to see. But they can hear very quiet sounds.

1. What is special about a bird's body?
2. What would happen if birds carried their babies around in their bodies?
3. What happens when a bird flaps its wings?

Birds and flight 6
Feathers

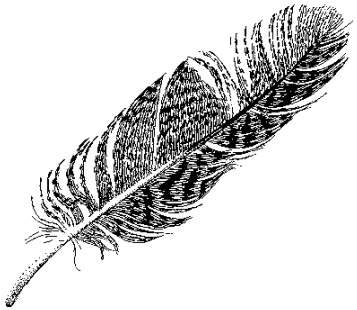
Feathers keep birds warm, stop their bodies from getting wet and help them to fly.

Here are some different types of feathers on a bird's body:
Down feathers
These are the very soft ones next to the bird's skin. They help keep the bird warm.

Tail feathers
Birds use their tail feathers to steer themselves in the air and to balance on the ground.

Body feathers
Body feather lie smoothly over the down feathers. They are oily so that they are waterproof. This stops the bird getting cold and wet.

1. What type of feathers keep a bird warm?
2. What type of feathers stop the bird from getting wet?
3. How do these feathers stop the bird from getting wet?
4. What do birds use their tail feathers for?



Birds and flight 7

About the Kakapo

Read the following and write three facts about the Kakapo

The kakapo is a parrot of New Zealand. It almost became extinct. Although the kakapo has wings it does not fly. It climbs trees using its claws and beak. It hunts by night and sleeps during the day. The kakapo is a friendly bird, quite happy to be up close to humans. To attract the females, the males make a booming sound at night which sounds like distant thunder. He does this by inflating air into special sacs in his body, a bit like blowing up a balloon, and then releasing the air.

Why did the kakapo almost become extinct?

When Maori people arrived in New Zealand about 1000 years ago, the kakapo was an easily hunted because it was asleep during the day. When Europeans came to New Zealand about 200 years ago they brought with them animals like cats, foxes and weasels, so by the late 19th century kakapos were almost extinct. In 1970 it was thought that the kakapo was extinct, but in 1977 a colony of about 200 kakapos was found on Stewart Island, an island just off the southern most point of New Zealand. The kakapos were moved to another island that had no cats and dogs. That is how the kakapo has survived.

Birds and Flight 8

The Kakapo: a parrot from New Zealand that does not fly.

What can we learn from the kakapo? Write three points.

- When parrots were released from Noah's ark, they could ALL fly.
- The flying parrots reached New Zealand from the ark, but one day in New Zealand, a flightless parrot hatched from an egg of a flying parrot. This was not meant to be. It was an example of something that went wrong. The Bible tells us that because of Adam and Eve's sin back in the Garden of Eden, things in the creation started going wrong. (Romans 8:19-22)
- The flightless parrot had flightless babies, and they grew up and produced flightless babies. These flightless birds were able to survive in New Zealand because there were no animals there that would eat them. They had not made the sea crossing.
- When humans came, and brought with them predators like cats and weasels, the kakapo almost became extinct.
- When something goes wrong in the process of animals producing their young, we call it a mutation.
- Mutations are when living things go from being perfect to less perfect.
- God's original creation was perfect, but things have gone wrong over the years, and now the creation is not so perfect.
- People who believe in evolution would say that things go from nothing into something fantastic, like slime that turns into a more complex animal, and that animals turns into an ape that turns into a human.

But we can see from the kakapo that our creation is not getting better. God made it perfect in the beginning.

Birds and flight 9

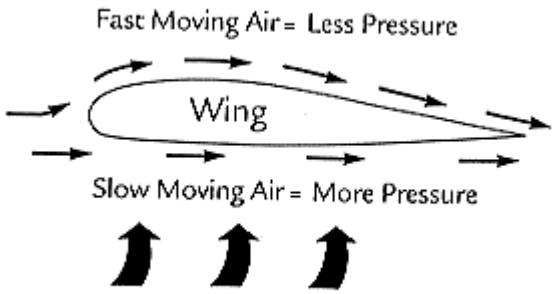
How do birds fly?
How do aeroplanes fly?

Birds and aeroplanes fly using the same principle.
An aeroplane's wing is designed so that the air moving under the wing travels a shorter distance than the air moving over the wing. This creates a high pressure under the wing and a low pressure above the wing, which forces the plane up.

The wings of birds and planes have what is called an aerofoil shape. This aerofoil shape helps us overcome weight which is the effect of gravity pulling down on the mass of the aircraft.

The aerofoil shape gives us something called **lift**. This is the upward force required to overcome gravity, being produced by a wing as it moves through the air. This action allows the object to lift up and push forward.

Try this experiment:
Blow over a narrow strip of paper held to your lips. The moving air above the paper has lower pressure than the air beneath it, which is not moving. This causes the paper to lift up. It is called the principle of LIFT.

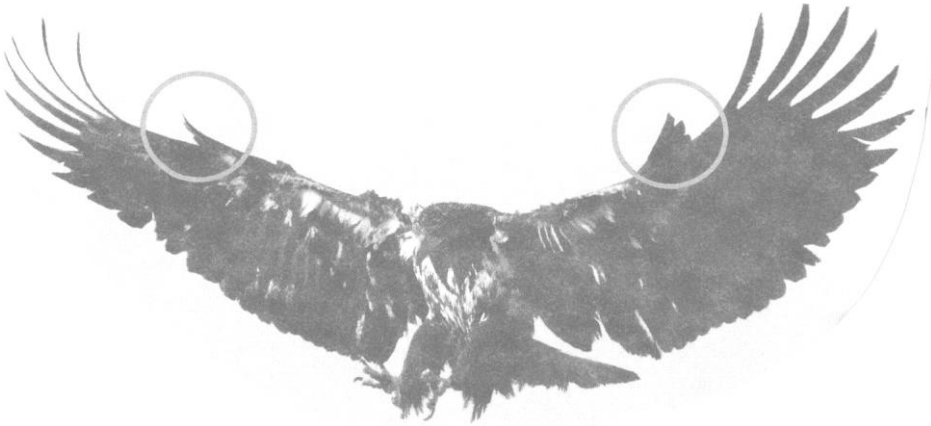


Birds and flight 10

What do jumbo jets and eagles have in common?

When a jumbo jet approaches an airport to land, the pilot deploys flaps on the leading edges of the wings. This allows the plane to fly at a low speed without stalling. Leading edge flaps were unknown in birds until now. A study of the Steppe eagle, at the Oxford University of England, shows that this bird has special leading-edge feathers that it uses during takeoff and landing. These special feathers have been captured on video footage. The eagle deploys a wing flap on the front edge of the wing, just as a jumbo jet does. This flap helps the eagle to lift off when flying at low speeds and high angles of attack. It stabilizes the wing during unsteady flying movements.

Such wonderful design features did not come about by chance, but were designed by the Great Designer.



What does the eagle use its leading-edge feathers for?

Pacific Islands 1: Countries

Pacific Islands are islands that are in the Pacific Ocean. There are about 20,000 or 30,000 of them. These islands are sometimes called Oceania. The Pacific Islands are in three groups. These groups are Polynesia, Melanesia, and Micronesia. People who live on these islands are called Pacific Islanders. These islands can be made by volcanoes or made on coral reefs. The islands made by volcanoes are bigger, and more people can live on them. The islands made on coral reefs are smaller, and fewer people can live on them. One of Oceania's biggest economic advantages are tourism. As many vacationers come to see the wildlife and the beautiful beaches that span the islands. Major countries and territories include Samoa, Hawaii (U.S), Federal States of Micronesia and French Polynesia.

Island countries in the Pacific Ocean, such as Malaysia, Philippines, East Timor, Japan, Taiwan and most of Indonesia are not considered Pacific Islands since they do not lie in any of the three Oceanic regions. People inhabiting those islands, therefore are not Pacific Islanders.

Some Pacific Island nations:

American Samoa, Cook Islands, Fiji,

French Polynesia, Guam, Hawaii, Kiribati

Marshall Islands, Nauru, New Caledonia, Niue

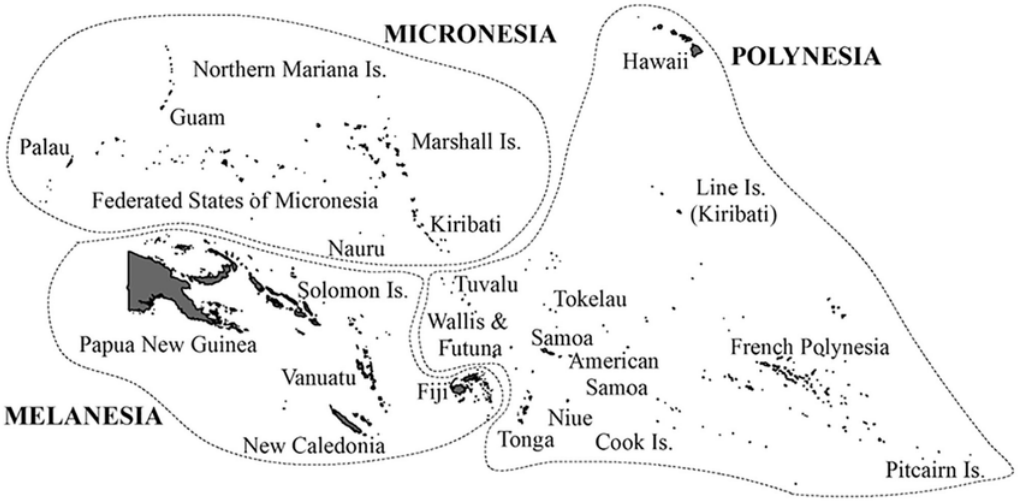
Papua New Guinea, Samoa, Solomon Islands,

Tonga, Tuvula, Vanuatu, Wallis & Futuna

2. Melanesia, Micronesia and Polynesia

Pacific Island nations are divided into three regions:

Melanesia, Micronesia and Polynesia



3. Origins of Polynesia, Melanesia, and Micronesia

The origins of Polynesia, Melanesia, and Micronesia can be traced back to Southeast Asia.

The people of Polynesia are believed to have migrated from Southeast Asia in large ocean-going canoes, embarking on a remarkable journey across vast expanses of the Pacific Ocean.

Their navigational skills, using the stars and other celestial cues, allowed them to settle and explore the islands of the eastern Pacific, establishing communities and cultures that thrived in their new island homes.

The ancestors of the Melanesians have roots in African populations. Over time, they developed their own unique cultural traditions and artistic skills, resulting in the diverse languages and artistic expressions found in Melanesia today.

We must remember that ALL cultural groups are descended from the sons of Noah, whose genes contained all the expressions of skin colour, eye colour and physical characteristics. As people spread out in groups from the Tower of Babel, the different physical traits were narrowed down, so that one group may express curly hair for example, and another group straight hair.

4. American Samoa

Geography

Area: 199 sq km

Archipelago in the Polynesian Pacific.

Population (in 2017): 68,505

Capital: Pago Pago

People living in cities: 93%

Official language: Samoan, English

Largest Religion: Christian (95% of population, but many nominal Christians)

Government: A Commonwealth of the USA

Challenges for Prayer

Remarkable growth among cults (especially Mormons) exposes the nominalism, too-long entrenched, in the mainline churches. Pray for awakening and renewal in these rapidly declining churches.

5. Cook Islands

Geography

The 15 islands in the Cooks are located in the heart of the Pacific, halfway between Hawaii and New Zealand. Rarotonga is the main island.
Area: 236 sq km
Over 100 coral atolls and volcanic islands 3,500 km northeast of New Zealand, 15 of which are inhabited.
Population (in 2017): 19,933
Capital: Avarua
People living in cities: 75.3%
Official language: English, Cook Island Maori
Largest Religion: Christian (96% of population)

Challenges for Prayer

The strong Christian legacy of over 150 years is fading rapidly. Increasing numbers are nominal or even non-religious, and Mormons and Jehovah's Witnesses are the fastest growing groups. Pray for reversal of these trends and for new life to come to the mainline Churches.
There are some evangelical and Pentecostal churches some older churches. YWAM's base in Rarotonga could be instrumental in rejuvenating the churches of the Cook Islands and beyond. Pray for an outpouring that would see older churches revived, new churches planted and every island with the presence of active believers.

History

The Cook Islands were first inhabited by three Tahitian men who arrived with a boat with a number of women. These are the ancestors of the Cook Islanders. In 1200 Tongila, a Tahitian, and Karika, a Samoan explorer, ruled Rarotonga. In 1728 Captain James Cook sailed by without landing. Makea Nui Ariki was a female chief of Rarotonga. In 1885 she started to build close ties with New Zealand and traveled to Auckland to meet the Prime Minister. In 1901 the Cook Islands became a New Zealand colony.

6. Fiji

Geography

Area: 18,274 sq km
Two larger and 110 smaller inhabited islands, both volcanic and coralline.
Population (in 2017): 854,098
Capital: Suva
People living in cities: 53.4%
Official language: English, Hindi and Bau Fijian commonly used
Religion
Largest Religion: Christian 65%
Hindu 30%
Muslim: 7%

Challenges for Prayer

The Hindu Indians of Fiji form the largest non-Christian community in the Pacific. Sikhs and Punjabis retain more of their culture and language, but there is little specific outreach to them. Many are emigrating to Western countries.
The Muslim community is tightly knit, very resistant to the gospel. The few converts to Christ suffer from considerable persecution. Several Fijian villages have become Muslim.
Pray for:
a) Christian literature. The Bible Society of the South Pacific is based in Fiji. Pray for translation work, printing and distribution of God's Word.
b) Ministry to young people. Fiji has serious sociological problems among its youth. Pray for those specifically ministering to young people in Fiji and the Pacific. The University of the Pacific in Fiji has students from every island territory and is strategic for impacting many islands which have much nominal Christianity.
c) The more remote communities are much less reached. YWAM's Mobile Ministry seeks to reach these communities by ship and by truck, sharing the gospel and providing medical and dental care.

7. French Polynesia

Geography

Area: 3,521 sq km

Five island archipelagos and 118 islands – (Society, Tuamotu, Marquesas, Austral and Gambier) in south-central Pacific. Tahiti, the largest island at 1,042 sq km, is where over 70% live.

Population (in 2017): 272,394

Capital: Papeete

People living in cities: 51.4%

Official language: French and Tahitian

Largest Religion: Christian: 92%

Challenges for Prayer

The outer island groups are largely Catholic with little evangelical presence. Some people groups cannot easily understand the Tahitian language, and do not have the Bible in their own languages.

History

James Cook made several visits between 1769 and 1777

Christian missionaries arrived in the early 1800s and saw many conversions.

1842 the French took control.

1860s the first Chinese arrived.

1914 - 1945 1000 Tahitians served in WW1 and WW11.

1957 Officially recognized as “French Polynesia”

1963 Nuclear testing program on Maruroa Atoll and later on Fangataufa Atoll. Agricultural workers decreased from 50% to 9%.

The coffee and vanilla bean industry collapsed.

In 1997, due to international protest, testing was finally stopped.

8. Guam

Geography

Area: 541 sq km

Most southerly and largest island of the Marianas Archipelago; 6,000 km west of Hawaii. Also included here (but not as part of Guam itself) are the three tiny US Territories of Johnston Island (2.8 sq km; 1,300 km from Hawaii), Midway Island (5.2 sq km; 2,350 km) and Wake Island (6.5 sq km; 3,700 km).

Population (in 2017) 179,893

Capital: Hagatna (Pronounced Agana)

People living in cities: 93.2%

People

The Chamorro people are the indigenous people of the Mariana Islands. Other inhabitants include Americans, Spanish and Filipinos.

Official language: Chamorro; English

Largest religion: Christian 96% (Predominantly Catholic)

History

1521 Magellan, a Portuguese explorer was the first European to land on Guam.

1668 Jesuit missionary, Diego Luis de San Vitores founded a Catholic mission, and a Spanish colony was founded

1898 USA captured Guam in the Spanish American war.

1899 USA took control of Guam

1941 In World War 11, Japan invaded Guam

1944 Guam US forces were liberated.

Today Guam has a military base and a strong military presence in Guam.

Challenges for Prayer

The Prison Fellowship of Guam has a ministry to prisoners that is also penetrating the indigenous population in a small but significant way. Pray for resources to teach and train converts who remain in prison.

9. Hawaii

Capital: Honolulu
Population: 1,900,000
Geography
Hawaii is a state of the USA. It consists of eight main islands: Niihau, Kauai, Oahu, Maui, Molokai, Lanai, Kahoolawe and the Big Island of Hawaii.
Hawaii is the most isolated population center on the face of the earth, being thousands of kilometres away from the continents of America or Asia.
Under-sea volcanoes that erupted thousands of years ago formed the islands of Hawaii.
Agriculture
Hawaii is the only US state that grows coffee. More than one-third of the world's commercial supply of pineapples comes from Hawaii.
People
There are no racial or ethnic majorities in Hawaii. There is a "mixed plate" of ethnic groups: Asian, White American, Native Hawaiian, Black American, Hispanic.
Languages: Hawaiian, English and Pidgin (combination of Hawaiian and English)
History
1778 Captain Cook was the first European to land in Hawaii
1779 Captain Cook speared to death by Hawaiians
1805 the sandalwood trade begins with European traders
1820 Arrival of the first missionaries
1825 Whaling trade began
1835 Sugar plantations began
1840-1889 Father Damien, Belgian missionary to the leper community of Molokai, worked with the people of the island until he died of the disease.
1893 Overthrowing of the Hawaiian monarchy and USA took control
1941 Bombing of Pearl Harbour
1959 Hawaii became the 50th state of the USA

10.Marshall Islands

The Marshall Islands, officially the Republic of the Marshall Islands, is an island country located near the equator in the Pacific Ocean, slightly west of the International Date Line. Geographically, the country is part of the larger island group of Micronesia. The country's population of 53,158 people (at the 2011 Census) is spread out over 29 coral atolls.
The two official languages are Marshallese, which is a member of the Malayo-Polynesian languages, and English. Almost the entire population of the islands practices some religion, with three-quarters of the country either following the United Church of Christ, Congregational or the Assemblies of God.

History
The first Europeans to visit the Marshall Islands were the Spanish. Magellan's ships passed through in 1543 and Spanish ships continued to visit through to 1568. Then the Spanish ignored the Marshall Islands.

In the 1850s whalers arrived; then came missionaries from the USA in 1857. In the 1860s a German trader set up business, and the Marshall Islands came under German control, which ended when Japan took control in 1914, at the start of World War 1. In 1944 USA troops captured the Marshall Islands. In 1945 the king agreed to nuclear testing on the Bikini islands, but he was misled about the impact upon the islands when he negotiated with the USA. The islanders were moved for the first weapons tests in 1946. When US government scientists declared Bikini safe for resettlement some residents were allowed to return in the early 1970s. But they were removed again in 1978 because their bodies registered high levels of radiation from eating foods grown on the former nuclear test site.

People who live in the Marshall Islands have a short life span and suffer poor health. They cannot grow their own food any more due to the consummated soil, so have to import all food. They mainly live on food from tins and packets.

11.Nauru

Geography

Area: 21 sq km

A raised coral atoll ringed with sandy beaches, with a central plateau of phosphates from fossilized bird droppings; 300 km west of Banaba, Kiribati.

Population: 10,254

Capital: None, but administrative centre is in Yaren

People living in cities: 100%

Official language: Nauruan, English

Largest Religion: Christian: 91%

Challenges for Prayer

Spiritual awareness grows as the economy shrinks. Materialism has become more important to many that their faith. However, church life is reawakening and evangelical numbers are growing. The Nauru Independent Church is the largest evangelical group, but there are believers in the other denominations as well. The JESUS film has been seen by almost the entire population.

History

In 1899 the first Protestant missionaries arrived.
In 1902 the first Catholic missionaries arrived.
In 1907 the mining of Phosphate began.
1940-1042 Germans bombed the phosphate works
1942 Nauru bombed by the Japanese
1947 Nauru became a United Nations Trust Territory
1951 Nauru's local government council was established
1968 Nauru became an independent nation and took control of the phosphate industry.

12.New Caledonia

Geography

Area: 18,734 sq km

One large 400 km-long island, the Loyalty Islands, and other smaller coral islands 1,400 km northeast of Australia.

Population: 268,767 (2014)

Capital: Noumea

People living in cities: 57.4%

The people are a mix of Kanak people (the original inhabitants of New Caledonia), people of French-European descent, Polynesian people

Official language: French **Other languages:** 30 different New Caledonian (Melanesian) languages spoken by the Kanaks

Largest Religion: Christian 81%

Challenges for Prayer

a) The 11,000 Muslims of Javanese or Arab descent retain their religion but not their languages. Little has been done to reach them.
b) Polynesian Islanders have kept both their culture and their language. There are a few evangelical believers among the traditionally Catholic.
c) The Metropolitan French (bureaucrats or business people) usually stay only a few years. Very few are involved with a church.
d) Bible translation into Kanak languages is needed. Pray for the calling and equipping of new translation teams.

History

1840 The first Protestant missionaries arrived (Polynesian)
1843 The first Catholic missionaries arrived.
1853 The French took possession.
1863 Nickel was discovered by French engineer Jules Garnier.
1863 – 1897 French prisoners, (convicts) were set to New Caledonia

13.Papua New Guinea

Geography

Area: 462,840 sq km

Eastern half of New Guinea, the second largest island in the world, and many smaller islands in the north and east together make up the nation of Papua New Guinea (PNG). A land of high mountains, dense forests, lowland swamps, coral islands, torrential rainfall, many rivers and great biodiversity.

Population: 6,888,387 Annual Growth: 2.40%

Capital: Port Moresby

People living in cities: 13%

Official language: English, Tok Pisin (Melanesian/English Creole) and Motu

Languages: 830

Largest Religion: Christian: 95%

History

Papua New Guinea was governed by the British and called “British New Guinea”. British New Guinea became the Territory of Papua, and formal Australian administration began in 1906, although Papua remained under their control a British possession until the independence of Papua New Guinea in 1975.

Challenges for Prayer

a) Effective discipling is the most urgent need. Nominalism, and pollution of Christianity with spiritism and the occult are sadly widespread.

b) Lack of Scripture translations and widespread illiteracy. Pray for more Bible and discipleship material specifically developed for oral learners.

c)d) Continued disagreements and fighting between tribes.

d) Denominational division among churches

e) Attempts to convert PNG to an Islamic nation are underway and will be an increasing challenge to the Church. Pray for adequate preparation and equipping that will enable Christians to wisely.

14.Samoa

Geography

Area: 2,831 sq km

Two large volcanic islands, Savai’i and Upolu, and seven small islands covered by lush tropical rainforest.

Population: 178,943

Capital: Apia

People living in cities: 23.4%

Official language: Samoan; English

Largest Religion: Christian 96%

Challenges for Prayer

Samoans have been Christian for over a century, and every village has at least one church. But there are social problems that continue. Much of the Church suffers from nominalism, and rivalry among denominations does not generate a good spiritual atmosphere. Pride and politics influence church life too much, and the financial demands on a poorer population are heavy. These problems, as well as the challenges of domestic strife and crime, make up a society that is much in need of prayer.

15.Solomon Islands

Geography

Area: 27,556 sq km

Six of the seven major volcanic islands of the Solomon Islands, also numerous smaller coral atolls. The seventh, Bougainville Island, is part of Papua New Guinea. The major island and island groups are Guadalcanal, Choiseul, New Georgia, Santa Isabel, Malaita, Makira/San Cristobal, Gela, Santa Cruz and the Russells.

Population: 535,699

Capital: Honiara

People living in cities: 18.6%

Official language: English. Trade language Solomons Pijin, spoken by more than half the population

Largest Religion: Christian 95%

Answer to Prayer

The Solomons have a history of revivals – in the South Sea Evangelical Churches in 1935 and 1970, then in nearly all denominations after 1982. In the 1980s and 1990s, evangelical and charismatic believers grew in number across almost all denominations.

Challenge for Prayer

The civil war of 1998-2003 did damage to the nation on a number of levels and left many thousands uprooted and in need of practical help and spiritual counselling. There is need for fairer elections and political processes. Pray for true forgiveness and reconciliation that come only through repentance. Without these, the nation can never really progress. Pray for more health workers, as incidence of malaria and other diseases is high. There is also a need for health care for mothers and babies.

16.Tonga

Geography

Area: 747 sq km

Archipelago of 171 coral and volcanic islands, 36 being inhabited, 600 km east of Fiji.

Population: 104,260

Capital: Nuku'alofa

People living in cities: 25.3%

Official language: Tongan

Largest Religion: Christian 96%

Challenges for Prayer

Tonga’s rich Christian heritage is a blessing, but has reached the point of becoming nominal There is competition among churches. The economic situation is difficult. Pray that Tongan Christians would seek ways to contribute to the Kingdom of God rather than seeking the church that benefits them the most.

17.Tuvalu

Geography

Area: 24 sq km

Nine low, coral atolls in the central Pacific, eight of which are inhabited.

Population: 9,970

Capital: Funafuti

People living in cities: 50.4%

Official language: Tuvalu, English

Largest Religion: Christian 97%

Challenges for Prayer

Tuvalu faces an uncertain future. Very limited resources, possible rising sea levels and modern/global external influences make this traditional culture fragile, both environmentally and socially. Pray that wisdom would prevail in preserving Tuvalu as a nation and culture, and that the long-standing presence of the Church would play a major role in this.

18.Vanuatu

Geography

Area: 12,190 sq km

Twelve larger and 70 smaller islands, southeast of the Solomon Islands in the southwest Pacific. Formerly New Hebrides.

Population: 245,786

Capital: Vila

People living in cities: 25.6%

Official language: Bislama (Pidgin English), English

Largest Religion: Christian 94%

Answer to Prayer

Thousands have turned to Christ, coming out of the “John Frum” cargo cults, despite these groups forbidding contact with Christians and the gospel. (These cults emerged from WWII and a belief that loads of supplies on ships and planes would come from “John from” America.) The JESUS film has seen a new wave of over 7,000 positive responses to the good news.

Challenge for Prayer

Vanuatu’s motto is “In God We Stand”. Pray that leaders of this complex little nation may be examples in doing so. Committed Christians played a major role in attaining independence, and they continue to help lead the country - not least is the President himself.

Pollution and Recycling 1
What is pollution?

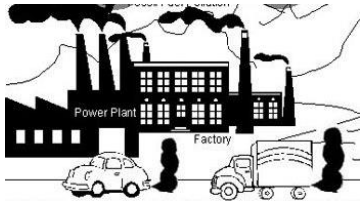
Pollution happens when people leave rubbish or harmful chemicals in the air, soil or water.

Chemicals are the things that everything around us is made from. There can be good or bad chemicals. Bad chemicals are harmful to people, animals, plants and the earth. Bad chemicals are called toxic chemicals. Toxic chemicals can come into our world when factories are not careful about the waste products coming from the things they make.

Chemicals can be solid, liquid or gas.
Chemicals in the air cause air pollution. We often see this in big cities.
Car fumes also cause chemicals in the air.
Chemicals in the air make it hard for people to breathe.

1. *What kind of rubbish do people leave around?*

2. *Draw a busy city and in your drawing, show how air pollution can be caused.*



Pollution and recycling 2
Garbage

Garbage is rubbish that people leave around.
Garbage in the ocean kills fish, sea animals and sea plants.

Fish can get tangled up in plastic bags.
Dolphins can get plastic rings caught around their necks.

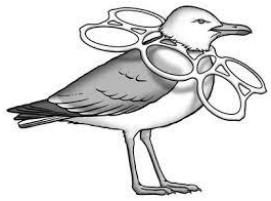
Garbage makes the beach look like a garbage dump.
People don't like to swim there because it smells.

1. *What kind of garbage to people sometimes leave on the beach?*

2. *Draw some sea creatures tangled up in garbage.*

3. *Why should we keep our schools and our community free of garbage?*

4. *How can we stop people leaving rubbish around?*



Pollution and Recycling 3
What happens to garbage?

This is what can happen to the garbage that we put in the bin:

In cities, the garbage gets collected by a garbage collector and taken to a big dump.

Away from the cities, where there is no garbage collector, people can burn some of their rubbish.

They can only burn paper and cardboard. They must not burn plastic because it makes toxic chemicals when it is burnt.

They can throw plant waste, like vegetable scraps, into a hole and bury it. The plant waste will rot. This is called compost. The plants turn back to soil.

Plastic, glass and metal will not rot. They must go to a big dump.

1. *What happens to your garbage at home?*
2. *How can you get rid of plant waste?*
3. *Why should you not burn plastic?*
4. *Why could it be a problem if the world uses lots of plastic, glass and metal?*

Pollution and Recycling 4
What is recycling?

Recycling is using things for more than one purpose. Recycling is turning used things into something that can be used again.

You can recycle plastic, glass, paper and metal. It is good to do this because plastic, glass and metal don't rot like plants do.

Plastic, metal and glass can be melted in a factory and made into other things. In some cities, there are special bins for rubbish that can be recycled.

We can recycle plastic bags at home by using them for other things.

If we recycle things made from plastic, glass, paper and metal, then there will be less garbage in the rubbish dump.

1. *What could you use a plastic bag for?*
2. *What would happen people kept putting plastic, metal and glass in the rubbish dump and never recycled any of it?*

Pollution and Recycling 5
Doing the right thing

1. *The two people in the top pictures are doing the right thing. What are they doing?*
2. *The person in the bottom picture is not doing the right thing. Why not?*

Pollution and Recycling 6
Water pollution

Water can become polluted from factories that allow their waste to flow into rivers and the sea.

Water can also become polluted from people throwing rubbish around rivers and beaches.

List all the problems you can think of that polluted water may cause.

Pollution and recycling 7
The rubbish dump

Write about these pictures. What is happening?

Make a list of all the creatures that might live in a rubbish dump.

Why are some of these creatures a problem?
How can we make less rubbish so that are rubbish dumps don't become too big?

Pollution and recycling 8
Four ways to recycle

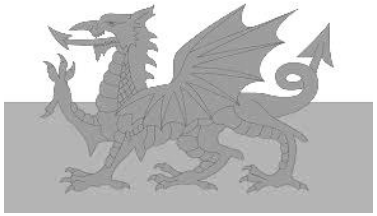
Look at the picture below. Think about what the people are doing.
Now draw four pictures and write about how we can recycle:

1. *Food scraps and garden waste.*
2. *Paper*
3. *Glass, plastic and metal*
4. *Clothes*

Dinosaurs 1

A dragon is a dinosaur

Where do we see pictures of dragons today?



Flag of Wales

The Chinese dress up as dragons in their festivals.
They have pictures of dragons in their restaurants.

When was the word 'dinosaur' invented?
The first dinosaur fossils were found in the 19th century. An Englishman, Richard Owen invented the name "dinosaur" in 1842. Dinosaur means "terrible lizard." Before this time these creatures were referred to in many cultures as "dragons".

Most people think that dragons are just for fairy stories, and never really lived. But in fact, dragons were dinosaurs, and are just another extinct animal.

Did dinosaurs and people live at the same time?
People from all over the world have stories of dragons. This means that they must have seen them. According to ancient stories, dragons came in many shapes and sizes. Some could fly, some could swim and they even laid eggs just like dinosaurs!

Dinosaurs 2

How old are dinosaur bones?
Many believe in evolution, which tells us that certain species of animals changed and developed over time into new species. This is not what the Bible teaches. The Bible teaches that all the different kinds of animals were created by God on day 6 of the Creation, 6000 years ago. Each animal produced babies that were the same kind as themselves. Cats produced cats and dogs produced dogs, dinosaurs produced dinosaurs.

Scientists who believe in evolution believe that dinosaur lived millions of years ago, and over the millions of years the dinosaur changed into another animal and that animal changed into another animal. According to the evolutionists dinosaurs died out millions of years ago. They believe that humans came into the world many more millions of years down the track and came from apes. So they don't believe that dinosaurs and people could ever have lived together.

However we find many stories and drawings of dinosaurs throughout history. What do the evolutionists say about these? In order to hold on to their theory, they must say that these stories are myths or fairy stories.

How long ago were dinosaurs created?
How long ago were human beings created?

Dinosaurs 3

Dinosaurs in the Bible

The Bible mentions two dinosaurs by name and describes them in great detail: "Behemoth" (Job 40:15-24) and "Leviathan" (Job 41:1-34).

Some people think that "Behemoth" might have been a hippopotamus and "Leviathan" could be a crocodile. But this could not be true. Let's see why.

Behemoth cannot be a hippo because Job 40:17 says, "He bends his tail like a cedar". A hippo has a short tail like a pig. Behemoth had a large tail shaped like a cedar tree, (large and tapered to a point at the end).

Leviathan could not be a crocodile but would be a swimming dinosaur. Let's look at the verses that tell us this

- Verse 15: "His back is made of rows of shields, fastened together and hard as stone." (This sounds like an animal with scales much stronger than crocodile skin!)
- Verses 18-21: Leviathan breathes out fire and smoke. (Crocodiles do not do this, but there are stories of dragons that did.)
- Verse 22: He has a powerful neck. (Crocodiles don't really have an obvious neck.)
- Verse 25: "When he rises up, even the strongest are frightened." (Crocs don't rise up at all but always lay low.)
- Verse 26: "There is no sword that can wound him." (Crocs are quite easy to kill with a good spear.)
- Verse 30: "The scales on his belly are like jagged pieces of pottery. They tear up the muddy ground like a threshing-sledge." (Crocodiles have smooth skin on their belly.)

Name and draw pictures of the two dinosaurs in the Bible.

Dinosaurs 4

Dinosaurs and people living at the same time

There are cave and rock drawings around the world of creatures that look very much like dinosaurs. There is a rock drawing by the American Indians of a winged creature they called a 'Thunderbird'. This looks just like the fossil of a pteranodon, which had bat-like wings and a head crest.

There are brass engravings in an English church dating from 1496. These engravings look very much like dinosaurs.

The Australian Aboriginal people gave the name 'bunyip' to a fierce reptilian creature they feared. An early Australian newspaper published a report on a bunyip as seen and described by Australian Aborigines. It walked upright on two legs and fits the description of a dinosaur better than any other animal.

Other stories come from many different parts of the world. Even today there are some who believe that deep in the remote jungles of Africa, a creature known as Mokele Mbenbe might be a living dinosaur. No one has yet discovered if any dinosaurs still exist today. But the evidence is there that man and dinosaurs have lived together at one time.

What evidence is there for dinosaurs and people living at the same time?

Dinosaurs 5
Putting bones together

Asian temple carving

A person who studies dinosaurs is known as a paleontologist. When dinosaur bones are found it is not easy to know how to put them together. It has taken modern scientists many years to work out how to put these bones together.

One scientist accidentally put bones together of two different dinosaurs and called it a brontosaurus. Later other scientists found that he was wrong so that name no longer exists.

The people in ancient history could did not have the knowledge of how to put dinosaur bones together, so we can conclude that the people who drew these creatures could only know what dinosaurs really looked like of they actually saw them.

The Bible tells us the true history of the world. Its words came from the Creator of the universe. Despite the wonderful findings of science, no one is alive today who can tell us what happened in the distant past. But the One who made it all has given us a record of what has taken place.

How did ancient people know what dinosaurs looked like?
How do scientists know what they might have looked like?

Dinosaurs 6
Dinosaur fossils

The Bible tells us of a massive Great Flood, which happened about 4000 years ago. The Flood killed every land-dwelling, air breathing creature except for those which were kept alive in a huge ship built by Noah. Almost all the world's fossils are preserved in sediments laid down by water.

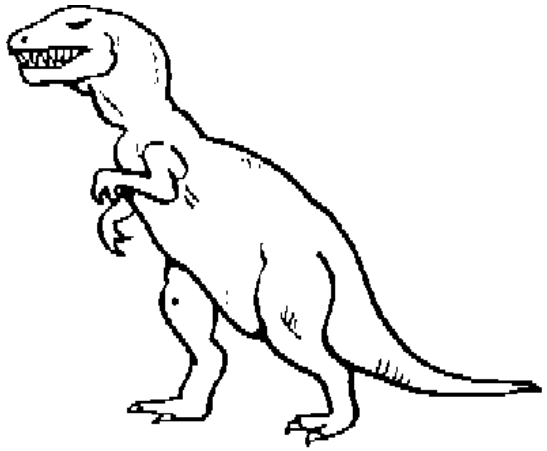
There are huge fossil graveyards with millions of well-preserved fish fossils and many dinosaur fossils as well, with their bones in correct position. This indicates that they were buried rapidly in a great flood.

If all the massive layers containing fossils formed slowly and gradually over millions of years, as the evolutionists tell us, then we would not expect to find as many fossils.

There are some fossils found that died in the middle of every day activities such as eating or even giving birth. For example, there are fossils of fish with fish in their mouths. These fossils show us that the creatures were buried quickly while still alive.

What event was the cause of millions of fossils all over the world?
How old are these fossils?

Dinosaurs 7
Tyrannosaurus rex (T-rex)



‘Tyrannosaurus’ comes from the Greek words meaning ‘tyrant lizard’, while the word ‘rex’ means ‘king’ in Latin.

Tyrannosaurus rex lived in North America.

Tyrannosaurus rex walked on two legs, balancing its huge head with a long and heavy tail.

Tyrannosaurus rex measured up to 13m (42ft) in length, 4m (13ft) at the hip and could weigh up to 7 tons!

The skull of a Tyrannosaurus rex alone measured up to 1.5m (5ft) long.

The largest tooth of any carnivorous dinosaur found to this date is that of a T-Rex. It is 30 cm (12in) long.

Tyrannosaurus rex had small arms that were extremely powerful and featured two clawed fingers.

Tyrannosaurus rex could run at a speed of around 40kph (25mph).

Draw a T-rex and list 5 facts

Dinosaurs 8
Triceratops

The name ‘Triceratops’ comes from the Greek language, meaning three-horned face.

The Triceratops was one of the most easily recognizable dinosaurs due to its large body, unique frill and three horns.

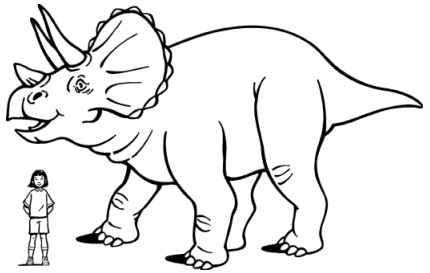
It had three horns to protect itself.

It is believed that fully grown Triceratops were about 8m (26ft) in length, 3m (10ft) in height and weighed anywhere between 6 to 12 tons.

The skull of a Triceratops alone could grow over 2m (7ft) in length.

The Triceratops was a plant eating (herbivore) dinosaur.

Triceratops had anywhere between 400 and 800 teeth, although only a small number of these were in use at any one time as they were constantly replaced throughout its lifetime.



Draw a Triceratops and list 5 facts.

Dinosaurs 9
Apatosaurus

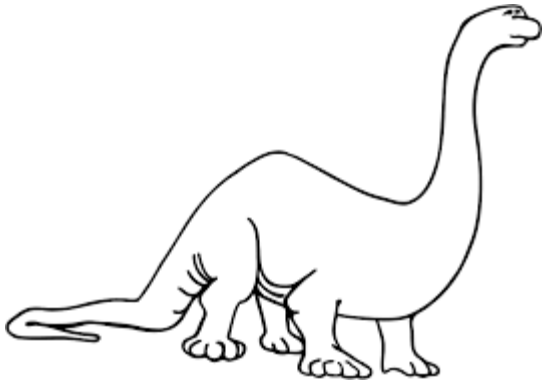
The Apatosaurus used to be called the Brontosaurus. (A mistake was made when bones of two dinosaurs were confused.)

The Apatosaurus is one of the largest animals to have ever walked on Earth, averaging around 23m (75ft) in length and a weight of over 23 metric tons.

It took an Apatosaurus only around 10 years to reach its full size.

Apatosaurus had long whip-like tails that counter balanced their long necks.

Apatosaurus was a plant eating (herbivore) dinosaur.



Draw an Apatosaurus and list 5 facts.

Dinosaurs 10
Diplodocus

The name Diplodocus comes from the Greek language and means ‘double beam’. This refers to strangely shaped bones found in the Diplodocus tail.

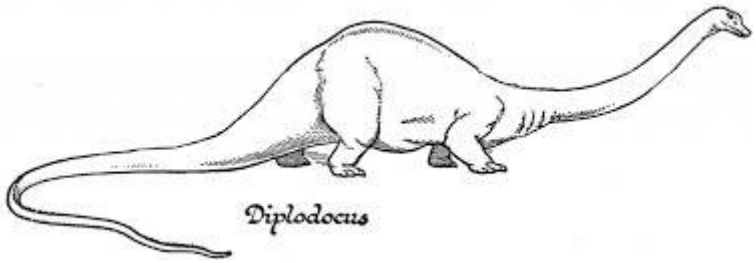
A large amount of fossil remains have made it easier for scientists to study the Diplodocus compared to many other dinosaurs.

Diplodocus lived in North America.

For many years the Diplodicus was thought to be the longest dinosaur, but now even longer dinosaurs have since been discovered

The Diplodocus could have been as long as 35m (115ft) and around 10 to 15 tons in weight.

Diplodocus had a long tail which contained around 80 vertebrae.



Draw a Diplodocus and list 5 facts.

Dinosaurs 11
Brachiosaurus

The name Brachiosaurus comes from Greek words meaning ‘arm’ and ‘lizard’. The name refers to the interesting nature of Brachiosaurus legs which were longer at the front than the back.

Brachiosaurus lived in North America.

The Brachiosaurus had a long neck, a small head and a short tail.

The Brachiosaurus walked on all four legs.

The weight of Brachiosaurus has been estimated between 30 and 45 metric tons.

The length of Brachiosaurus is believed to have been around 26 metres (85 feet).

The Brachiosaurus was a herbivore (plant eater), that feed on foliage high above the ground.

It is estimated that Brachiosaurus ate between 200 and 400 kilograms (440 and 880 pounds) of plants every day!

Draw a Brachiosaurus and list 5 facts.

Dinosaurs 12
Stegosaurus

The Stegosaurus was a herbivores (plant eater)

It has rows of plates and spines along their back and tail.

The name ‘Stegosaurus’ comes from the Greek words ‘stegos’ meaning roof and ‘sauros’ meaning lizard.

Stegosaurus fossils have been found in western North America and more recently in Portugal, (Europe).

The Stegosaurus was large and heavy. On average, a fully grown Stegosaurus was around 9 metres (30ft) in length, 4 metres (14ft) in height and up to nearly 5 metric tons in weight.

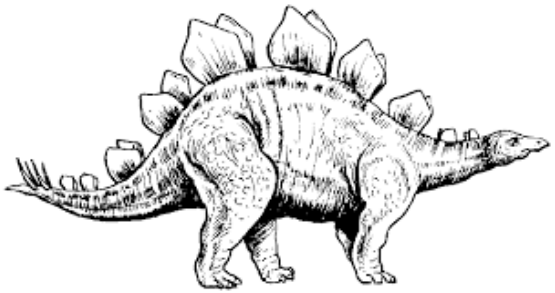
Although the Stegosaurus body was large, the size of their brain was only around the size of a dog’s.

They had a maximum speed of around 7kph (5mph).

The 17 plates found along the back of the Stegosaurus came from the skin rather than being attached to the skeleton. The largest plates were around 60cm (2ft) tall and 60cm (2ft) wide.

The Stegosaurus also had tail spikes that reached around 60cm (2ft) to 90cm (3ft) in length.

Draw a Stegosaurus and list 5 facts.



Dinosaurs 13
Iguanodon

The name Iguanodon means ‘Iguana tooth’.

The Iguanodon was first discovered in 1822 by English geologist Gideon Mantell.

The Iguanodon was a plant eater (herbivore).

It could easily shift between moving on two limbs or four.

The Iguanodon weighed around 3.5 tons and reached around 10 metres (33 feet) in length.

Iguanodon had a thin skull and long tail.

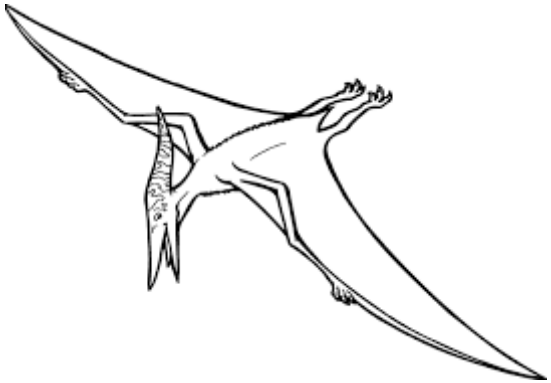
The largest collection of Iguanodon fossils were found in a Belgian coal mine (Europe) in 1878.

Scientists estimate the Iguanodon’s maximum speed would have been around 24kph (15mph).

Draw an Iguanodon and list 5 facts.

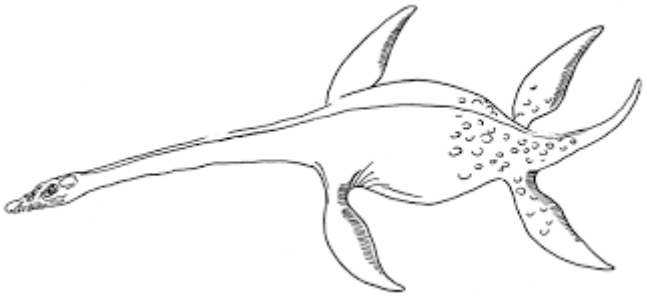
Dinosaurs 14
Pteranodon

- Pteranodon means "Winged and Toothless"
- Pronounced - ter-AN-o-DON
- Pteranodon probably ate mostly fish
- SIZE: Wingspan - 25-33 foot (7.8-10 m) long
- Standing Height - 6 ft (1.8 m) tall at the hips
- Weight - 55 pounds (25 kg)
- WHERE IT LIVED: Fossils have been found in Kansas, USA, North America and in England, Europe.
- INTERESTING FACTS: Pteranodon was a flying reptile. it was not a dinosaur, but was a close relative of the dinosaurs. Pteranodon's wing-span is longer than that of any known bird. It had a crest on its head, no teeth at all, and a very short tail.



Draw a Pteranodon and list 5 facts.

Dinosaurs 15
Plesiosaur



Plesiosaurs means "near lizard"

They were marine animals and not dinosaurs.

Plesiosaurs are divided into two groups:
a) long, snake-like necks, tiny heads, and wide bodies
b) large heads with very strong jaws and short necks.

Plesiosaurs were anything from 8 to 46 feet long (2.5 to14 m).

They had four flippers, sharp teeth in strong jaws, and short, pointed tails.

Plesiosaurs lived in the open oceans and breathed air. Some Plesiosaur fossils have been found with small stones in their stomachs; these may have been used to help grind up their food.

Plesiosaurs laid eggs, like sea turtles do.

Plesiosaurs ate fish and other swimming animals. They had strong jaws and sharp teeth.

Plesiosaurs swam using their four paddle-like flippers, similar to turtles.

Draw a Plesiosaur and list 5 facts.

Dinosaurs 16
Dinosaur eggs

Dinosaur eggs were laid by female dinosaurs, similar to the way in which reptiles lay eggs.

Dinosaur eggs have been found all over the world.

Dinosaur eggshell can be studied under a microscope.

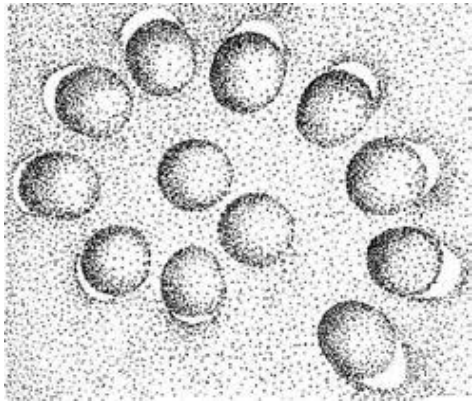
Sometimes the egg preserves the remains of the developing embryo inside.

The first fossilized dinosaur eggs found (and the biggest yet to be found), were football-shaped.

These were found in France in 1869. The eggs were 1 foot (30 cm) long, 10 inches (25 cm) wide, had a volume of about half a gallon (2 liters), and may have weighed up to 15.5 pounds (7 kg).

At present over 700 different species of dinosaurs have been identified and named.

Draw a nest of dinosaur eggs and list 5 facts.



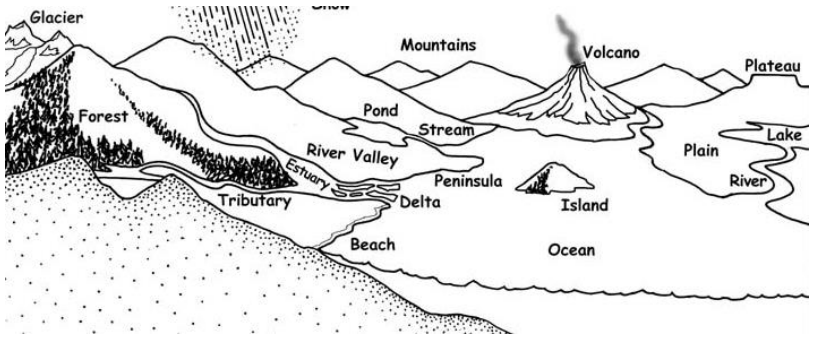
Landforms and bodies of water 1
What Are Landforms?

A landform is any natural formation of rock and dirt, found on Earth. A landform can be as large as a mountain range, or as small as a hill. It can be as large as a continent, or as small as a pond. Geologists study how landforms are created, and how they interact with one another.

One quarter of the earth's surface is covered by land. At some places the land may be very high, at some places very low. Any shape on the earth's surface is known as a landform. The various landforms that we have, came into existence due to natural processes such as erosion, wind, rain, and weather conditions such as ice. Natural events and disasters such as earthquakes, volcanic eruptions and floods created the various shapes of the land that we see. The greatest natural disaster in history was the great Flood, in Noah's time, which covered the whole earth.

Some examples of landforms are mountains, hills, valleys, plateaus, plains and deserts.

Draw a picture of a landscape with different landforms and bodies of water. Label them.



Landforms and bodies of water 2
Facts about Mountains

A mountain is the highest landform on the surface of the earth. It is usually found to be cone shaped with steep sides and a pointed tip called a peak. A mountain range is a series of mountains.

Mountains could be steep and snow covered or they could be gently sloping having rounded tops.

The highest mountain range in the world is the Himalayas. Mount Everest is the tallest mountain in the world. Some mountains are found under the sea and could be taller than the Mount Everest.

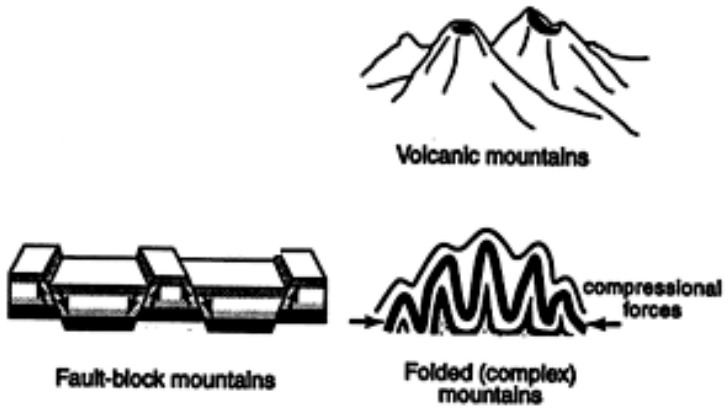
1. What is a mountain peak?
2. What is a mountain range?
3. What is the highest mountain in the world?
4. Draw some different types of mountains.

Landforms and oceans 3

How mountains formed

Mountains can be folded, volcanic or block.
The earth's crust is made up of plates. Sometimes the plates move towards each other. Layers of soft rock below the earth's surface are squeezed up to form mountain ranges.
Mountains can form when molten rocks from deep within the earth rise to the surface, pouring out in the form of lava from volcanoes.
Blok mountains were formed when part of the land drops because of an earthquake.

During the Great Flood, all of these things happened.



1. Draw four different types of mountains and label them.
2. Explain how each type was formed.

Landforms and oceans 4

Plants and animals living in the mountains

There are many mountains that remain covered with snow throughout the year. These mountains are very cold. Therefore, there is not much vegetation or life found in here. Trees like pine trees are found in the lower ranges or foothills.
Animals that have a thick fur coat can survive the extreme cold in the high mountain regions. The yak, the mountain puma, snow leopard or the mountain goat are some of the animals found in mountain areas.
Mountains are very useful to us as they act as shields for the country blocking the cold winds and also protect us from invading enemies.
Trees provide us with commercial and medicinal value.
Melting snow from the snowcapped mountains fills the rivers and they are a source of water.
Mountains make beautiful tourist destinations.

1. Why is there no life on snow-covered mountain tops?
2. What kind of tree grow in the lower foothills?
3. Name and draw some animals that live in mountain areas.
4. Why are mountains useful to us?

Landforms and oceans 5

Facts about Hills

Hills are lower than mountains but are higher than their surrounding areas.

Hills are lower in height than mountains, but they are higher than the surrounding areas. A number of hills together form a ‘range of hills’. Hills are usually covered with grass.

The climate in the hills is more pleasant than the climate in high snow-covered mountains. It is usually neither too hot nor too cold. They make perfect tourist destinations.

The vegetation is thick, beautiful fruit orchards are found in the hills and it is good for crop cultivation like tea and coffee.

1. What is the difference between mountains and hills?
2. What kind of agriculture can be found in hills?
3. Why are hills often good for growing things?

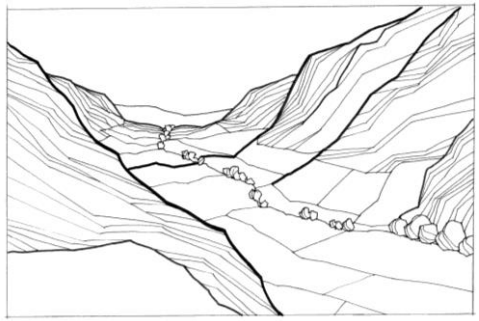
Landforms and oceans 6

Facts about Valleys

Valleys are the low-lying areas between two mountains or hills. When rivers flow down the mountainsides and hillsides, it wears off the rocks and soil. Valleys are formed when water carves out grooves. These grooves get deeper and wider, forming low land areas called valleys. During the Great Flood streams of water rapidly carved out valleys.

Valleys formed by glaciers (rivers of ice) are U- shaped.
Valleys formed by fast-moving rivers or streams are V – shaped.
Narrow valleys are called canyons.

The climate in the valleys is cool and pleasant. Many civilizations in ancient times were found in valleys where there were rivers flowing making water available for the people. Due to ample water that is provided by the rivers and fertile soil, the vegetation is thick and valleys look green and beautiful.



1. What are valleys?
2. Draw and label three different types of valleys.
3. How did the Great Flood form valleys?

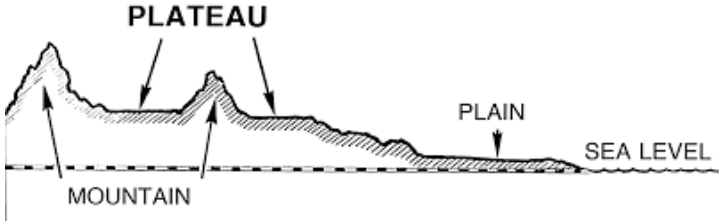
Landforms and oceans 7
Plateaus and plains

A plateau is a flat-topped highland with steep sides. Since it looks like a table, it is also called a tableland. They are basically areas of high flat land. Plateaus are usually surrounded by steep rock faces called cliffs.

Plateaus are usually good for growing certain crops.
Plateaus are formed when magma pushes up towards the surface of the earth's crust. This magma does not break through but it raises a portion of the crust up creating a plateau.

Plains are areas of flat land. The plains usually meet the oceans or seas, these are called coastal plains.

Some plains are formed by the action of rivers, these are called river plains. River plains are very fertile and good for growing crops.
You will find most big cities are located in plains. This is because it is easier to build houses, buildings, roads and other structures in the plains. They are therefore heavily populated.



1. What is a plateau?
2. What is a plain?
3. Draw a plateau and a plain.

Landforms and oceans 8
Facts about Islands

An island is a piece of land surrounded by water on all sides. Islands can be large or small. The continent of Australia is a large island. Fiji is made up of many small islands.

Coral islands are formed when coral piles up over a long period of time.

A large group of islands close to each other together form an archipelago. The largest archipelago in the world is Indonesia.

1. Name a very large island.
2. Name a very small island.
3. What is a coral island?
4. What is an archipelago?
5. Name an example of an archipelago.
6. Draw a map of Indonesia.

Landforms and oceans 9

Deserts: Facts and Types

Deserts are large, dry and hot areas of land which receive little or no rainfall throughout the year. The vegetation is scanty due to the shortage of water. Deserts are covered with sand. Sand dunes are huge hills of sand formed by the winds.

Deserts have extreme weather conditions. Days could be very hot and nights very cold. This is because the sand absorbs heat fast during the day and gives off heat quickly at night.

The main vegetation found in the deserts are the cacti and the baobab trees. The baobab tree can store nearly up to 1000 litres of water in its trunk which enables it to survive the harsh conditions.

There are two types of deserts – Hot Deserts and Cold Deserts.

Hot Deserts

Hot deserts are vast areas of land that are covered with sand and dust. These areas receive little or no rainfall and are very dry.
The animals found in the hot deserts are camels, snakes, lizards and rats.

Cold Deserts

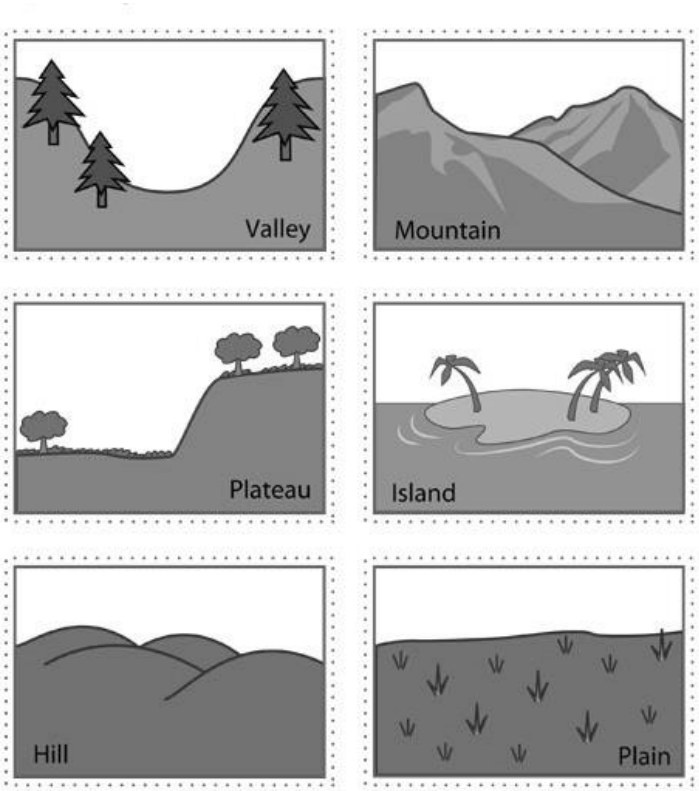
The cold deserts are large areas of land covered with snow. These deserts receive little or no rainfall. They receive snowfall during the winters. Animals such as penguins, whales and fur seals survive in the cold deserts. The Antarctica is the world's biggest cold desert. Life in these cold deserts is impossible.

Write a description of either a hot desert or a cold desert. Use both words and drawings. Also name the place.

Landforms and oceans 10

Types of landforms: definitions

Draw and write a definition for all of the following landforms: Valley, mountain, plateau, island, hill, plain.



Landforms and oceans 11
Earthquakes

These natural disasters can change the shape of the earth's crust. An earthquake is the sudden and violent shaking of the ground caused by shifts in the earth's crust.

A Tsunami is an ocean wave caused by an earthquake on the bottom of the ocean.

During the Great Flood, earthquakes were much, much larger and more frequent than any we see today. An earthquake today might move the land up, down, or sideways by about 6 metres. An earthquake during the Flood may have moved the earth 3 kilometres or more.

Tsunamis during Noah's Flood would also have been much larger than any Tsunami today. Noah's Ark, in the middle of the ocean, would have just moved up and down a bit, but when tsunamis reached the land, they would have become waves of hundreds or even thousands of metres tall.

1. Describe the earthquakes and Tsunamis during Noah's Flood.
2. What effect did they have on the earth's surface?

Landforms and oceans 12
Volcanic eruptions

God says, "the fountains of the great deep burst open, and the floodgates of the sky were opened." (Gen 7:11)

The fountains of the great deep were broken up by earthquakes and Tsunamis. This would have caused thousands of volcanoes to erupt.

Deep inside the earth it is very hot. Liquid rock, called magma, within the earth would have been released by the cracking of the earth's crust. Volcanic eruptions not only spew out hot liquid rock, but also ash, gases, and fluffy rocks called Pumice, high into the air. All of the rock and ash from the eruptions would have eventually fallen back to earth into the floodwaters and become part of the layers of mud, which eventually formed a soft type of rock called sedimentary rock.

1. What happens during a volcanic eruption?
2. What cause the many volcanic eruptions duding Noah's Flood?

Landforms and oceans 13
A Global Flood

Some people do not believe that Noah's Flood covered the whole world. They think that the Bible is talking about a small flood somewhere near the Middle East, because we know that the Ark landed on Mt. Ararat in the Middle East. But we can observe a huge amount of geological evidence that the Flood really covered the whole earth, and this is confirmed in the Bible.

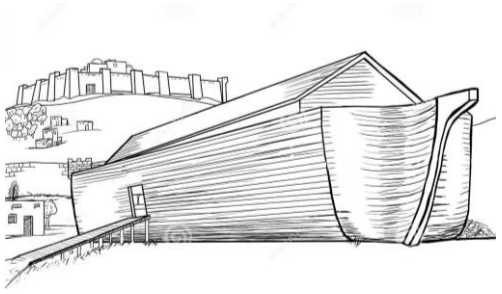
The purpose of the Flood was to cleanse the earth of all the people in the world who had fallen into evil practices. Noah was instructed to save the animals by taking aboard two of every kind. It would not make sense for God to command the animals and Noah to repopulate the earth after a local flood, because the animals and people would already be elsewhere and still alive.

The Bible says that after 73 days of being grounded on Mount Ararat, Noah saw the tops of the other mountains.

1. How do we know that the Great Flood was global?
2. Where did the ark land?

Landforms and oceans 14
Facts about Noah's ark

- The Ark was huge. It was as big as one and a half football fields.
- It was large enough to hold two of every kind of animal. This did not mean all the different species, but just one type of cat and one type of dog etc. These animals had all the genetic information to produce different types of cats, dogs etc. in the future. God would have sent baby animals to Noah, not full-grown ones. Baby dinosaurs and crocodiles would have been easier to handle.
- It was very stable. It was so well-built that modern ship builders say it would be almost impossible to tip over.
- It could handle waves of up to 60 metres.
- It was very stable.
- God watched over the Ark during the Flood and kept it safe because He wanted the people and animals to repopulate the earth.
- The Ark had an excellent design. It had 3 levels.
- It was made from gopher wood.
- It was waterproof. The inside and the outside were covered in pitch which is a kind of tar to seal the wood.



Write a description of Noah's Ark.

Landforms and oceans 15
The formation of mountains and oceans

During the Great Flood, entire continents rose up out of the floodwater while the ocean floor sank at the same time. This forced the floodwaters to rush off the continents into the oceans.

All this activity caused the sedimentary (soft) rocks to tilt, and fold, by squeezing of layers, or layers being pushed upwards.

This created mountains and valleys.

Just as there are valleys in the oceans, there are also underwater mountains. In the Atlantic Ocean, there is a range of undersea mountains 16,000 km. long. A few of the mountains rise above the surface to form islands.

Many people ask, “Where did all the water go after the Great Flood?”

The answer is in the mountains and valleys formed by the volcanic eruptions, earthquakes and Tsunamis. Mountains rose up and huge valleys were formed. The water ran into the huge valleys which are now our seas and oceans.

1. What was the surface of the earth like before the Great Flood?
2. What was is like after the Great Flood?

Landforms and oceans 16
The Ocean

Until modern times, no one knew what the bottom of the ocean was like. People thought it was like the deserts: flat and sandy. They believed the ocean floor was mostly saucer shaped and deepest in the middle.

But in the 1900s, oceanographers found that the sea has many deep valleys and canyons. The deepest of these canyons are called trenches and are amazingly deep.

How did the mountains and valleys get there? They were formed during the Great Flood, (Genesis 6-8). Genesis 7:11 tells us not only about the rain that fell but also about the underground waters which erupted from the earth.

The Bible mentions both the mountains and the valleys of the sea in the books of Jonah and Job:
Jonah 2:5-6 tells about Jonah who was thrown into the sea. He sank down to the very roots of the mountains in the sea.
In Job 38:16, one of the questions God asks Job is, “Have you walked in the valleys of the sea?”

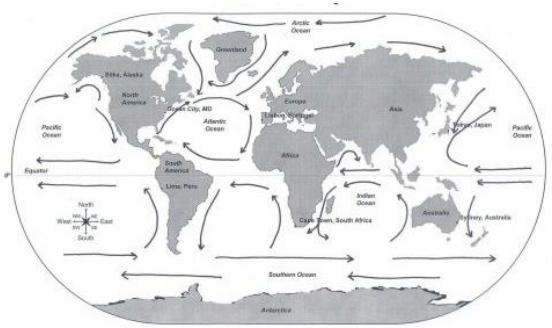
How did the writers of these books of the Bible know about the mountains and valleys of the ocean thousands of years before scientists discovered them? God told them of course!

1. Write out the Bible verses that tell us that the ocean has mountains and valleys.
2. When did scientists find out?

Landforms and oceans 17
Ocean currents

The fact that the ocean has currents was discovered by a U.S. Navy officer, Matthew Maury, in the 1800s. Matthew was not only interested in oceans but also liked to read the Bible. One day he was reading Psalm 8 which tells us that God put human in charge of everything He made the birds in the sky, the fish in the sea, and everything that swims the ocean currents. (Some older versions of the Bible, like the one that Matthew was reading, call the currents “the paths of the sea”.)

It was because of this Psalm that Matthew got the idea that there could be paths in the sea. So, he set out to discover them. He discovered that the world’s oceans have many paths, or currents, which are like rivers flowing through the sea. There are warm currents and cold currents, fast currents and slow currents. In 1855 he wrote the first text book on oceanographic physics and became known as “the pathfinder of the seas” and “the father of navigation.” His discover and his books helped to make ocean travel much quicker and easier.



1. What are ocean currents?
2. How do ocean currents make sea travel easier?

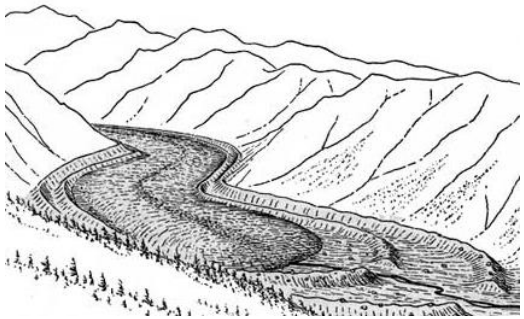
Landforms and oceans 18
Glaciers

After the Great Flood, life did not get easier for Noah and his family. Because of the volcanic ash that was thrown up into the sky form the volcanoes, there were dramatic weather changes. Fortunately, in the Middle East where Noah landed, the weather changes were not as dramatic, but the North and the South were about to get much colder. This was called the Ice Age.

During the Ice Age, snow and ice covered three times more of the earth’s land surface than it does today. Scientists know there was an Ice Age because they can see areas that were affected by huge moving sheets of ice called glaciers. A glacier leaves behind scratched rocks, mounds of broken rock called *moraines*, and out-of-place boulders. There is evidence that glaciers were present in places where there is no snow and ice today.

Glaciers are rivers that are frozen solid. Like normal rivers they move, but very slowly. The rocks that they pick up as they move scratches the bedrock, like giant sheets of sandpaper. The scratches look like grooves that run in one direction.

1. What caused the Ice Age?
2. What are glaciers?



Time and Work 1
God's work

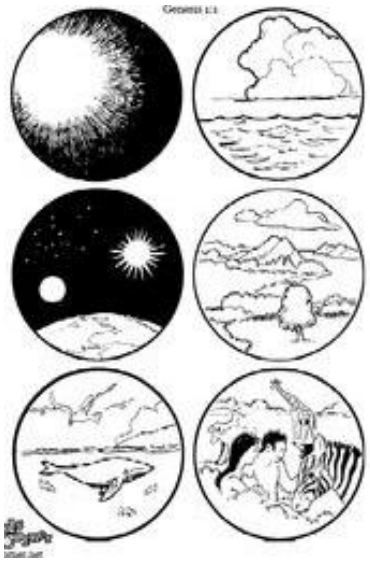
Read the creation story in Genesis 1 and 2:1-2.

1. For how many days did God work?

2. Make a list of the six days and what God did on each day.

3. How do we know that God was pleased with His work? (Genesis 1:31)

4. What did God do on the seventh day?



Time and Work 2
Working and resting

1. How many hours do you usually sleep each night?

2. Select 5 people and ask them how much sleep they have each night. Make a graph to show how much each person sleeps.

3. Why might some people need more sleep than others? (Hint: think about age.)

4. Is there is a difference between sleep and rest?
Write a definition of each:

- Sleep
- Rest

5. Why do we need to rest?

6. What would be the problem with staying up until midnight every night?

Time and Work 3
Working with others

Some work is done on your own. Some work is done with the help with other people.

1. Make a list of work activities that can be done on your own.

2. Make a list of work activities for which you require a helper.

3. List some tasks that require a group of people working together:

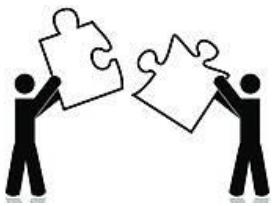
- in your classroom
- at home
- in a community service.

4. Working together well is called co-operation.
Give an example of a task for each of the following that would need co-operation:

- The Classroom
- The home
- The Community

5. Read Genesis 2:20. Why did God create the first woman?

6. How did He do this?



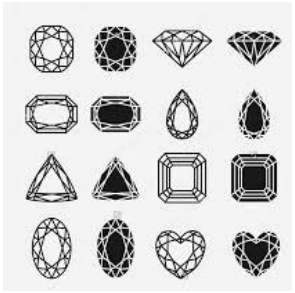
Time and Work 4
People in the Bible who co-operated with each other

Read Exodus 2:1-10
1. Who co-operated with who?
2. Why was co-operation important?

Read Nehemiah 3
1. What were the Jewish people building?
2. What parts of the building in particular needed to be repaired?
Read Nehemiah 4:6.
3. Which word tells us that the people had a good attitude to work?

Building a House
4. Make a list of the different tradesmen who help in the building of a house.

Co-operating together: Building God's House
Read Exodus 35:21-29
5. What is being built here?
6. The people brought their best gifts to God. They were gifts they had made themselves. List five things that the people brought to God's house.
7. Who was in charge of the project?
8. List three occupations mentioned in Exodus 35:35?



Time and Work 5
Working to find the best way

Try to think of a time when you needed to alter your first ideas or plans so that the finished result could be more effective.

This is what Gideon had to do.
Read Judges 7.
1. Gideon was the leader of the army in battle but God was not happy about his plans. Why? Read verses 5-6 to find out.

2. God knew that there was a better way. How did God make changes to Gideon's plan?

3. How many men were enlisted at the beginning?

4. How many left because of fear?

5. How many left because they lapped like dogs and were not keeping a watch for the enemy?

6. How many left in his army now?

7. Write a mathematical equation to tell this event in numbers.

Time and Work 6
Everyone has talents

Everyone has a talent of some kind!
What is the meaning of the word 'talent'?

1. List some talents that your parents have.
2. Describe some of the talents that you have.

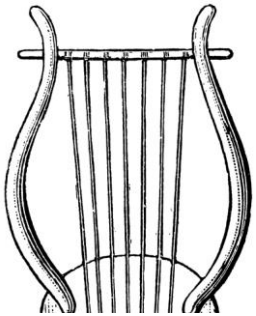
Some people have musical talents
3. Read 1 Samuel 16:23. What instrument could this boy play well?
4. What sort of instrument is this and what does it sound like?

5. Where do our talents come from? Find your answer in James 1:17.

6. How can you use your talents at school?

7. Do you think your talent will help you choose an occupation when you leave school?
8. What occupation would you like to follow?

9. How could you use your talents in this work?



Time and Work 7
Occupations in the Bible

Find out the occupations of people mentioned in these verses:

1. Acts 10:6 Simon was a _____
2. Acts 10:1 Cornelius was a _____
3. Acts 16:14 Lydia was a _____
4. Acts 18 Paul was a _____
5. Mark 1:16 Simon and Andrew were _____
6. Matthew 13:55 Joseph was a _____
7. Luke 19:2 Zacchaeus was a _____

8. Which of these occupations are still practiced today?

9. Which of these occupations have changed in the way that they are carried out?

Time and Work 8
Time

1. Read Luke 15:11-32. How did the son waste time?

2. How could it have been avoided?

3. List some ways in which people today waste time.

4. Make a chart for yourself showing every hour of one day. Mark against each hour how you would usually spend that time.

5. How could you improve on your use of time?

6. Take a survey of five people including yourself. For each person, find out the average number of hours spent in a day sleeping, eating, watching TV or screen activities, physical activity, studying, traveling, helping at home, spending time with God.

7. On which activity do you spend the most time?
8. On which activity is the least time spent?

9. The Bible tells us about time and work.
Read Ecclesiastes 3:1-8. What is this passage telling us?

God works in us.
10. Read Philippians 1:6. What is the good work begun in the hearts of Christians?
11. How does God continue working in us?

Time and Work 9
Honesty in work

Read Proverbs 20:23
In early times, produce was sold by weight. Explain what is this verse saying about the scales used for weighing?

How could people in these occupations act with a) dishonesty b) honesty:

1. People who make things
2. People who sell things
3. People who are paid according to their time
4. People who fix things

Punctuality in work
5. What does punctuality mean?
6. Why is it important to be punctual in a job?
7. What should you do if you have an emergency and you are going to be late?

Time and Work 10
Perseverance in work

1. What does perseverance mean?

2. If you are finding a job hard to do, you could:
Give up altogether

- Ask someone help you
- Do the job in smaller bites

Choose the best options and explain how this will help you to get through the job.

3. Choose one of these jobs and explain why they require perseverance:

- Weeding a garden full of weeds
- Building a road
- Completing a school project
- Washing clothes without a washing machine

4. What would happen if you gave up half way through and left the job undone?

Initiative in work
5. What does initiative mean?
6. How could you take initiative if:
a) The classroom is messy with papers and your teacher has just gone out of the class because she is feeling sick.

b) Mum is cooking dinner and little sister is crying.

Time and Work 11
Diligence in work

1. What is the meaning of diligence?

2. What could happen in these jobs if the worker was not diligent?
a) A surgeon
b) A pilot
c) A bus driver
d0 A bank worker

Humility in work
3. What is the meaning of humility?
4. Explain how the staff should have acted in this situation:

The cleaner at a company cannot come to work today because she is sick. The rubbish is piling up but the staff members won't do anything about it because they say that it is not their job to put out the rubbish.

What should the staff have done? Why?

5. What does Jesus say about being prepared to do the humble jobs? (Matthew 20:26)

6. What do you think Jesus means when He asks everyone to be a servant?

Time and Work 12
Creativity in work

Christians have the opportunity of producing excellent work, because they understand that all their gifts are from God, and that God can use them.

We can ask God for wisdom in our work and also for new ideas. God is the creator of all knowledge. He is "all-knowing". As His children, we can ask Him for the best ways to do things in our work. He can help us solve problems and invent new things.

1. Here are some jobs that require problem solving. Explain the problems that might need to be solved:

a) Medical science
b) Aeroplane engineering

2. Here are some jobs that require creativity. Explain why.
a) Industrial design
b) Graphic design
c) Film or music production

Flexibility in work
3. A creative person must be flexible. What does this mean?
4. Why is flexibility important if we want to come up with new and better ideas?

The immune system 1
What is immunity?

Immunity means that you are protected against something. There are different kinds of immunity. This topic is about how different parts of our bodies work together to keep us from getting sick. Immunity to some diseases is passed on from our mothers before we are born. Immunization (having your 'shots') helps our body's immune defence system protect us from diseases.

There are several parts to the immune system:
The skin, tonsils in the throat, adenoids in the ears, sinuses in the nose, the lungs, the bowel, white blood cells and the lymphatic system.

Your body is like a castle. It defends you against germs.

1. What is immunity?
2. List the parts of the immune system.

Immune system 2
The body's immune system

Everybody has an inbuilt immune system which protects it from diseases and germs. This system has a lot of different parts which work together to keep out any harmful germs, and attack and destroy any which manage to get inside your body.

Every day your body is exposed to millions of germs, and you do not get sick from them because of your immune system.

Every time you do get sick because of a germ, your immune system works to get rid of it and then it remembers how to fight the infection if the same germ comes again.

Usually the older you get, the more germs you become immune to.

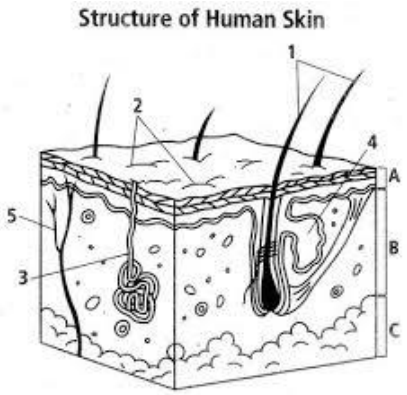
1. What does the immune system do?
2. How does your immune system fight germs?

The immune system 3
The skin

The skin is the first line of defence in your immune system.
You know how you put plastic wrap over leftovers to keep them fresh enough for later? Well, your skin is like a plastic wrap to keep germs from getting into your body.

The epidermis (outside layer of skin) has special cells which warn the body about incoming germs.

Glands in the skin also make substances that can kill some bacteria (anti-bacterial chemicals). This means you don't get infections on your skin unless your skin is damaged, such as by a cut or a graze.



1. Draw the structure of the human skin.
2. How does the skin protect us from germs?

The immune system 4
Nose, mouth, eyes, ears, lungs and bowel

This is what happens when your nose, mouth, eyes, lungs and bowel get attacked by germs or dust:

The mucous membranes which line the mouth, throat, lungs and bowel, act like a barrier to germs, just as the skin does.

Saliva in the mouth and the tears which wash your eyes have special enzymes (chemicals) in them which break down the cell walls of many bacteria and viruses.

The mucous that is made in your nose, throat and lungs traps bacteria, viruses and dust.

Acid in your stomach kills most germs, and starts to digest your food.

What are the functions of the following?

1. Saliva
2. Mucous
3. Stomach acid

The immune system 5
The Lymphatic system

The lymphatic system is made up of:

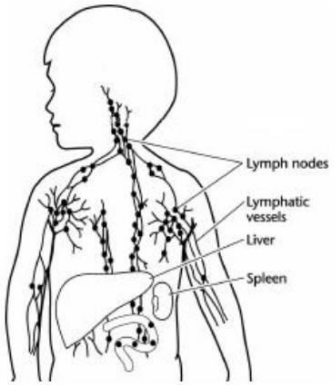
Lymph: a clear fluid that is very similar to the clear liquid in blood, but it carries only white blood cells, not red blood cells.

The lymph flows through all the parts of the body picking up fluid around cells and carrying it back to large veins near the heart. It also carries white blood cells to the places where they are needed.

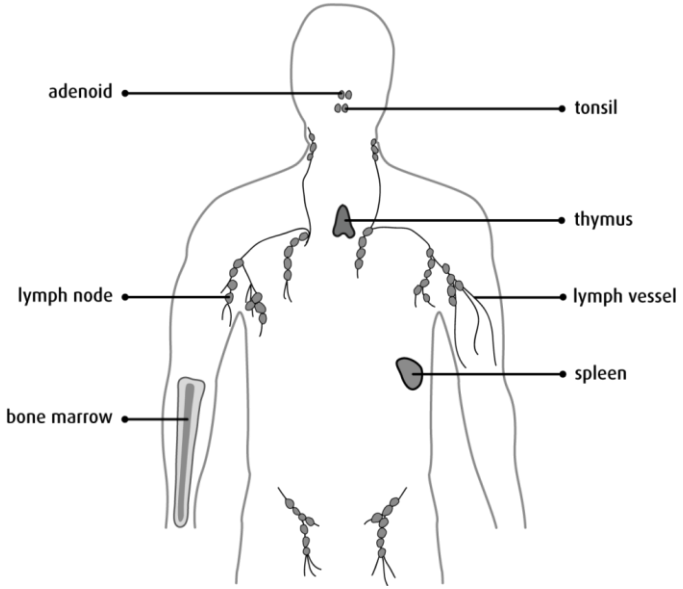
Lymph nodes
Some bacteria or viruses that have entered the body are collected by the lymph and passed on to the lymph nodes where they are filtered out and destroyed. Lymph nodes are sometimes called glands.

Your doctor can often tell if you have an infection by checking out the lymph nodes (glands) in your neck and under your arms to see if they're swollen. If they are, it shows that they are working to get rid of bacteria or viruses.

1. What is the function of lymph?
2. Where are lymph nodes found?
3. How do they help us?



The immune system 6
Diagram of the lymphatic system



The spleen clears out worn out blood cells and fights off infection.
The thymus trains the T cells (one of the white blood cells) to do their job of looking out for germs or things that don't belong in the body, and destroying them.
The bone marrow is where the blood cells are made.
The adenoids keep infection out of your ears.
The tonsils kill germs that may enter the throat.
The lymph vessels carry lymph fluid around the body.

List the functions of the following:
Spleen, thymus, bone marrow, adenoids, tonsils. Copy the diagram.

The immune system 7
Facts about blood

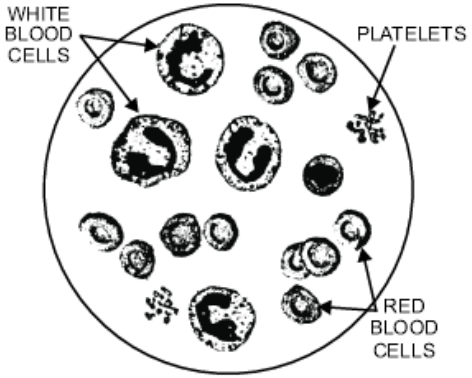
Blood is made up of four parts – plasma, red cells, white cells and platelets. Each part has a special job.

Plasma is a yellow liquid. It helps give you energy and grow.

Red blood cells carry oxygen to your cells.

White blood cells clean the blood and fight germs. When a virus enters your body, white blood cells rush to destroy the virus so you get better.

Platelets help your blood clot. When you cut yourself, a clot forms so the blood stops running. If your blood didn't clot, you could bleed to death.



1. What are the four parts of blood?
2. List the function of each.
3. Draw the diagram.

The immune system 8
White blood cells

In your blood, you have red blood cells and white blood cells, and in lymph there are white blood cells.
There are several different types of white cells which work together to seek out and destroy bacteria and viruses.

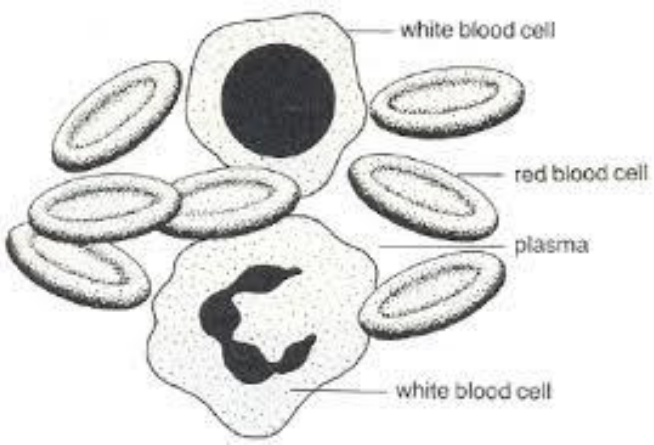
All of them start off in the bone marrow, growing from 'stem cells'. The disease-fighting white blood cells are specialists. Some of the white blood cells are:
Neutrophils, which move around the body in the blood and seek out foreign material (things that don't belong in your body).

Macrophages are the biggest blood cells. Some live in different parts of the body and help to keep it clean, e.g. in the lungs. Others swim around cleaning up other white blood cells that have been damaged while doing their jobs, e.g. cleaning up pus that has been caused by neutrophils when they work to clear out bacteria from a wound.
Lymphocytes work on bacterial and viral infections
There are two different types:
B cells produce antibodies. Each cell watches out for a particular germ, and when that germ arrives, the cell starts to produce more antibodies which begin the process of killing that germ. Antibodies attach themselves to the germs so that other cells can recognize that these germs need to be destroyed.

T cells look for cells in your body that are hiding invaders (germs) or body cells that are different to normal healthy cells (such as cells that could develop into a cancer) and kill them.

List the three types of white blood cells and briefly explain what they do.

The immune system 9
The difference between red blood cells and white blood cells



The red blood cells are donut shaped and regular. They carry oxygen around the body.

The white blood cells are all different shapes because there are different types. They kill bacteria and viruses in your body.

1. Copy the diagram including the labels.
2. What is the difference in the function of red and white blood cells?

The immune system 10
How does your immune system know which cells to attack?

Your body has lots of friendly bacteria around it which help your body work properly, e.g. some bacteria inside your bowel help you to digest your food and break it up into the different things that are needed in various parts of the body.

These friendly bacteria live on the surfaces of the body, such as on our skin or inside the bowel. They do not try to invade the body, so the immune system does not try to get rid of them.

Other germs which cause illness, try to enter the body. Antibodies, which are made by the lymphocytes, attach to the invaders so that the other white blood cells can destroy them. They 'tag' them so they can be easily noticed.

As well as attacking germs, your immune system recognizes and destroys other cells which do not belong in your body. The cells in your own body are marked with a special system called *antigens.*

Your immune system can recognize these markings as 'you'. Any cells which do not have the right markings are 'not you' and are therefore attacked. This happens if, for example, you have a blood transfusion with the wrong types of blood cells. Your body's immune system recognizes that these cells do not belong in your body, so it destroys them.

1. What do antibodies do?
2. What do antigens do?

The immune system 11
How you know your immune system is working

You know your immune system is working:

- if you get better after you are sick
- if cuts heal without getting infected
- if you don't catch the same diseases over and over again
- when you get swollen glands
- when you get swelling and soreness around a cut.

Your immune system is in there working to get rid of any infection. Sometimes the immune system will make a mistake.
It may attack your own body as if it were the enemy. This happens when a person has an allergy.

Allergies are caused by the immune system over-reacting to something that is not really a threat, like when pollen triggers hay fever or asthma.

When the immune system is damaged, they get lots of infections and are much more likely to get serious illnesses. Their body cannot recognize the infection or abnormal cells very well and the immune system does not destroy them as well as usual.

How do you know if your immune system is working well?

The immune system 12
How to build a strong immune system

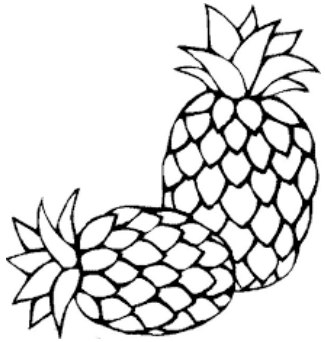
A strong immune system is an immune system that is working well. This means that when an invader comes into your body, it can be destroyed very quickly. It may mean that you catch a cold sometimes, but you will be able to get better quite quickly. It may also mean that you don’t catch the cold in the first place because your immune system destroys the germ as soon as it enters your body.

To stay healthy, we should wash our hands before eating and after the toilet, so that we don’t get germs coming into our mouths when we handle food or put our hand to our mouth.

To build a strong immune system there are certain foods we should eat. These are fruits, vegetables and other foods from nature. Fruits containing Vitamin C are particularly good. Examples of these are oranges, lemons, apples and pineapples.

The foods that make our immune systems weak are foods containing high sugar and salt, like processed snack foods in packets, sweets, cakes and biscuits.

Make a list of things we can do to build a strong immune system.

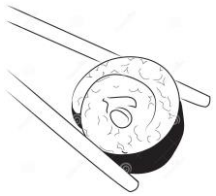


Traditional Foods 1
Food from around the world

God has given us many different foods in His creation. Some plant foods, like bananas, like to grow in hot places. Some foods like apples, like to grow in cool places. Today we can get foods from all over the world – from hot places and cold places. But a long time ago, before there were cargo ships and planes, people had to eat the food that was grown in their own country, because they couldn't bring other foods from long distances. Imagine if you lived in a cool place a long time ago, you would not be able to get bananas. And if you lived in a hot place, you would not be able to get apples. So people made recipes from the foods that they grew in their own area. That is how national recipes began.

1. Think of a dish from a particular country.
2. Name the dish and the country it comes from.
3. Draw and name the ingredients in this dish.

Example: Sushi, Japan



Now use the following ingredients to draw a healthy plate of food from these countries. Label the ingredients.
India: lentils (Dahl), rice, vegetables
China : vegetables, rice, chicken pieces
Italy: pasta, minced beef and tomato sauce, cheese, salad
Pacific Islands: fish, greens, taro, coconut

Traditional Foods 2
Food and culture: China

1. *Find China on a map. Name a country that borders China.*
2. *In which continent is China?*
3. *You may have eaten Chinese food at a Chinese restaurant or take-away. Write down some of the foods you think might be part of a Chinese meal.*

Rice is one of the most important ingredients in a Chinese meal. The food we get from Chinese restaurants in countries outside of China is only a small taste of real Chinese food. The traditional Chinese have wide range of vegetables not seen in many other countries. There are different sorts of dried mushrooms, water chestnuts and dried sea weed. (The Japanese also eat seaweed; it is extremely good for you).

Chinese food is usually prepared by the stir-fry method. For this they use a wok, which is a deep frying pan. The vegetables are cooked very quickly, and only for a short time. This means that the vegetables keep their nutrients.

Meat is often added to the stir-fry, but only in small amounts. The meat is usually cut up into thin strips so that it cooks quickly in the wok.

Traditional Chinese people do not usually eat desserts. However they do eat fruits like lychees and citrus fruits.

Why is a traditional Chinese diet a healthy one?

Traditional Foods 3
Food and culture: India

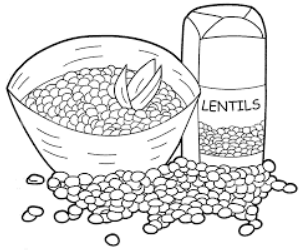
Find India on a map. Which continent is it in?
Have you ever eaten Indian food? If you have, write down the main thing you noticed about it.

Indian food is usually spicy. Some dishes are spicier than others. Curry is a mixture of spices which usually gives the Indian flavour. Curry is made up of turmeric, coriander, cumin and chillies. The chillies are the hottest, so if you want to make your own curry you can buy the spices separately and leave out the chilli. Ginger is another spice that is used, and it is very good for you!

Indian food is often vegetarian. This means that dried beans, peas and lentils (dahl) form the main part of the meal. Lentils and dried beans or peas provide protein and therefore is an alternative to meat. Rice and different kinds of vegetables are also used in the dishes. To add to the meal, and to cool the flavour to the spices, Indian food is served with little dishes of yoghurt, and sometimes with cucumber.

As an alternative to rice, Indian dishes can be served with a flat bread called roti. Roti is made from flour, salt and water, rolled flat and fried in a flat pan.

Draw an Indian meal.
What is healthy about a traditional Indian diet?



Traditional Foods 4
Food and culture: Mexico

Find Mexico on a map. Name a country that borders Mexico. Which continent is it in?

Mexican food is very popular in many parts of the world. Some has become fast food. Can you name any type of Mexican food?

You may have guessed tortillas, burritos and Mexican chilli beans. Corn chips are also a processed type of Mexican food. Traditional Mexican food is of course home-made. The main ingredients are corn meal and dried beans, particularly red kidney beans. Corn meal is a type of flour made from ground up corn. It is used for many things, like tortillas, which are round circles of pastry made from corn meal and water, then cooked in a pan. Corn bread is also made from the corn meal, and served with hot dishes.

Beans are very popular, cooked in a hot chilli and tomato sauce. Sometimes hot chilli sauce is served without the beans, to complement other food. The Mexican word for sauce is salsa. In many countries you can buy it already made up, from the supermarket.

Burritos are another popular dish. Burritos are a type of pancake, rolled up with a savoury filling inside. The filling sometimes contains meat, but only small quantities. More often the filling is made from beans. Traditional Mexican recipes do not contain much meat meat, as it is too expensive.

Draw a Mexican dish. Label the ingredients.
What is healthy about a traditional Mexican diet?

Traditional Foods 5

Food and culture: Mediterranean

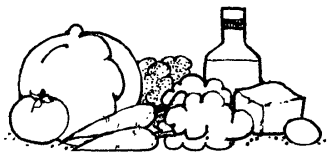
Look on a map and find the Mediterranean Sea.
When we speak of Mediterranean food, we usually mean Italian, Greek or French food. Italian food has become very popular all over the world. Can you guess the most common Italian food?

If you guessed pasta, you were right. There are all kinds of pasta, from spaghetti, to macaroni, penne, (short tubular lengths), and curly. Pasta is usually served with a tomato sauce, since tomatoes grow very well in the Mediterranean climate. Salads are also very popular. Salads are often served with olive oil dressing, as olives also grow well here. Olive oil is used for cooking many dishes, and is one of the best oils for health. Bread is a staple food, which accompanies main meals, and is usually served without butter.

Greek food is usually made from a similar variety of vegetables to Italian, although eggplant is a favourite. Olive oil is also used in Greek cooking. Greek salads are often served with fetta cheese, which is a goat's milk cheese.

Mediterranean dishes contain some meat, but not too much, as it is expensive. Bread and pasta more often provide the filling part of the meal. Olive oil is used in Mediterranean cooking. This is healthier oil than regular cooking oil.

Draw a Mediterranean dish. Label the ingredients.
What is healthy about traditional Mediterranean food?

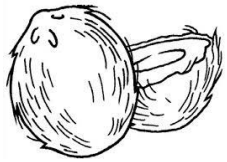


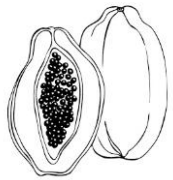
Traditional Foods 6

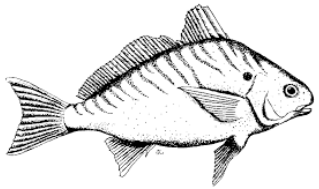
Food and Culture: Pacific Islands

The Pacific Islands have an abundance of tropical fruits such as pineapples, paw paws, bananas, watermelon and mangoes. Coconuts, both fresh and dried, are used in main dishes. Fish and shellfish are plentiful near the coast. Traditional vegetables are the yams, taro and cassava. Today many vegetables grow in the Pacific due to the warm wet climate. These include tomatoes, egg plant, pumpkins, carrots, corn, green beans, okra, cabbage and green leafy vegetables. Chicken and beef are also eaten. Traditional food is often cooked in an underground ovens made of heated rocks.

1. *Draw a dish from the pacific Islands. Label the ingredients.*
2. *What is healthy about traditional food from the Pacific Islands?*
3. *What processed foods have been added to the traditional diet?*
4. *How are these processed foods having a bad effect on the traditional diet?*







Traditional foods 7

The typical Western diet

The typical Western diet is the name we give to the modern processed foods developed in countries like the USA, Australia, New Zealand, England and Europe. It consists of large amounts of white starchy factory foods, sugary foods and all sorts of packaged foods, fast foods and junk foods. It includes sugary drinks and fizzy drinks. If we compare traditional diets with the food of today, we will see that the typical Western diet has changed many lives all around the world. Our great grandparents did not have the selection of fast foods and junk foods to choose from. Food was home-made and often home-grown.

Unfortunately, many traditional diets are being replaced by fast foods and packaged foods. Let's compare traditional diets with the diet of the modern world.

1. *What are some foods that make up the Typical Western Diet?*
2. *What are the health problems caused by the typical Western diet?*
3. *Why are traditional diets better?*
4. *What is the problem with mixing processed and junk foods with a traditional diet?*
5. *What can we do to avoid these problems?*

The cost of the typical western diet

Even if you think fast food and junk food is cheap, you are really paying money for something that has little nutritional value, and which is often a risk to your health. For this reason, fast foods and junk foods are a waste of money.

Make a list of junk foods and find out the cost of these. What healthy food could you buy with the same money?

Traditional foods 8

Traditional grains and starches

Grains and starches have provided the staple foods (main foods) of traditional cultures.
Asia: rice
America and Africa: corn
Europe and Middle East: wheat
Pacific Islands: cassava, taro, yams
Grains are called **cereals**. Most bread is made from wheat. When wheat is ground up it becomes flour. There is the white part, from the inside of the grain, and the brown part, from the outside of the grain. When we eat all of the grain, we call it **wholemeal.** Wholemeal bread is better for us than white bread because we get the goodness of the whole grain, and not just part of it.

Today bread is made in factories and has added preservatives. These preservatives make the bread last longer, but may not be good for our health. In early times bread did not stay fresh for more than a day, because there were no preservatives. People used to grind their grain into **meal** by using two big stones and cook it on hot stones in the form of flat bread.

Bread and starches as part of a balanced diet

Too much starchy food like bread, breakfast cereals, potatoes, cassava, taro, pasta, rice causes people to become overweight. We need to balance the starchy foods with many different types of coloured vegetables and some protein foods like meat and fish.

1. *What is the problem with a diet that consists mostly of bread, potatoes and breakfast cereals?*
2. *Draw up a daily meal plan that includes a good amount of protein and coloured vegetables.*

Electricity 1
Safety with electricity

We plug into electricity in our homes, school and other Buildings. This electricity has a high *voltage.* This means that it is a very high source of power and heat. If the electricity touches us directly we receive an electric shock which can kill people. It can cause serious burns and stop the heart.

It is dangerous to have electrical devices around water. Electricity travels through water and most other liquids. If a liquid is spilled near an electrical outlet or a device that is plugged in, the electricity can flow through the liquid and shock a person.

Old, damaged electrical cords dangerous! The wires inside electrical cords are covered with a plastic material which protects us. If the wire is exposed it can cause a shock or spark. The sparks from the wire may cause a fire.

Why is it dangerous to:

1. Poke a knife into a toaster when it is going?
2. Poke a nail into an electrical wall socket power point)?
3. Fly a kite near power lines?
4. Hit a nail into a wall near a light switch?
5. Use a hair dryer while you are in the bath?
6. Dry a wet piece of clothing on an electric light?
7. Use cords that have exposed wires.
8. Touch the prongs on an electrical plug while you are pulling it out from the wall.
9. What kind of accident could happen with a toddlers and electricity?

Electricity 2
What is electricity?

Electricity is a source of power that humans can use. It is part of God's creation. God provided us with electricity when He made the world for us to live in. Electricity can be seen in nature in the form of lightning. Electricity is energy.

Energy makes something work. It makes things move, heat up, or light up.

Here are some sources of energy:

- Fossil Fuels - Coal, Oil and Natural Gas
- Water (hydro) Power and Ocean Energy
- Nuclear Energy
- Solar Energy from the sun
- Wind Energy

People have learned how to take these natural forms of energy and convert them into electrical energy. Energy is produced by these fuels in power stations. The electricity goes along wires from the power station to our homes.

Everything in the universe is made of atoms. These are too tiny to see. In the atoms are little components called electrons. They can travel along a wire to produce electricity.

1. What do we use electricity for?
2. When can electricity be seen in nature?
3. What fuel sources can be used by power stations to make our electricity?

Electricity 3
Renewable and non- renewable energy

We need energy for heat, light, transport, cooking and electrical appliances.

Electricity has to be produced in power stations and sent along wires to our homes and cities. The electricity can be produced from renewable or non-renewable sources of energy.

Renewable means that if is always available and does not run out.
Non-renewable means that it will run out if we keep using it.

Non-renewable sources: Coal, gas and oil.
Power stations burn these fuels to make electricity. These fuels are called fossil fuels because they are made up of dead and decayed plants that have been buried for thousands of years. Once they are taken from the ground they are used for fuel. It would take thousands more years to replace them. The burning of these fuels also causes pollution.

Renewable sources:
Waterwheels get energy from rivers.
We can get solar energy from the sun.
We can get energy from wind.

These can be quickly replaced.

1. *How does electricity get to our homes and cities?*
2. *What is non-renewable energy? List some sources.*
3. *What is renewable energy. List some sources.*
4. *Why is it better to use renewable sources of energy?*

Electricity 4
Static electricity

Static electricity is stored electricity. It can be stored in objects. People and the clouds.

In a storm, static electricity sometimes builds up in the clouds This can give us thunder and lightning.

Rubbing a piece of plastic, like a plastic ruler or comb, can charge it with a type of electricity.

This is called static electricity, on *non-moving* electricity.

Experiment:
(Experiments with static electricity work best on a dry day.)

Rub a plastic ruler, pen or comb with a piece of fabric. Wool works best. Rub about 20 times.
Bring it close to some small bits of paper.
Now bring it close to someone's hair.

1. *What happened?*
2. *Static electricity is also called _____ electricity.*
3. *When you rub a plastic ruler on fabric you _____ it with electricity.*

Electricity 5
Conductors and insulators

Electricity will travel through some things very well. These are called *conductors*.
Other things will not conduct electricity. These are called *insulators*.

With your teacher, join up a battery and bulb with wires. Test some different materials and see which ones the electricity will travel through. These are the conductors. The bulb will light up. The insulators will not allow the electricity to pass through. The bulb will not light up.

Here are some things to try: rubber, plastic, an iron nail, wood, copper, aluminium foil, glass, paper, a cup or pottery. You will think of other things.

Make two lists: conductors and insulators.

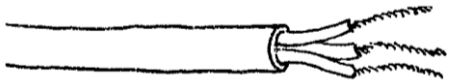
Insulators can stop us getting an electrical shock.
What insulating material is used around wires in an electrical cord?

Your body is a conductor of electricity. This is why it is very dangerous to fool around with electricity.

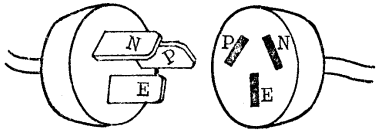
Electricity 6
Three-pin plugs

Every day you plug something into the main electricity supply. You use a 3-pin plug to do this. These plugs are wired up in a special way. You can get a shock if your plug is not correctly wired.

Inside the lead:



Inside the plug:



The wires in the lead must be connected to the three pins in this way:
The brown wire goes to the letter “P” (Phase).
The blue wire goes to the letter “N” (Neutral)
The green/yellow wire goes to the letter “E” (Earth).

1. *If you need to repair an electrical fault, or put in a new power point in your home, who should you employ to do the job?*
2. *What could happen if the wires were not connected correctly to the 3-pin plug?*

Some plugs have only two pins. The “E” pin is missing. These plugs are not as safe as three-pin plugs..

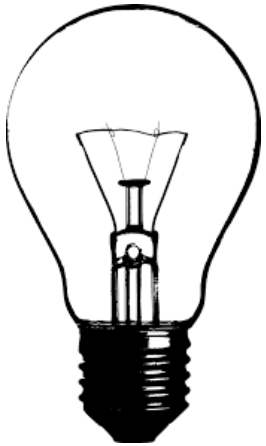
Electricity 7
History of electricity

The electric light bulb was not discovered until 1879.

After many experiments, Thomas Edison (U.S.A.) invented a light bulb that could be used for about 40 hours without burning out. By 1880, his bulbs could be used for 1,200 hours.

In 1882 Thomas Edison opened a power station in New York City. The power station was one of the world's first central electric power plants and could power 5,000 lights.

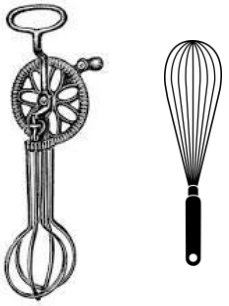
1. *What did people use for light before the light bulb was invented?*
2. *How did people cook without electricity?*
3. *What do you consider to be the most important uses of electricity today?*
4. *Write a description of how your family would live if there was no electricity.*



Electricity 8
What did we do without electricity?

Make a table to show the appliances used today, who uses it, and how the job used to be done before had electricity in our homes.

Appliance	Who uses	How it used to be done



Electricity 9
Electricity in the home

Make a list of all the things in your home that use electricity. Think about hearing, cooling, lighting, appliances and entertainment. Make a table and show which things use the mains power and which things use batteries.

Remember that things that operate by battery are still using electricity. Batteries contain stored electricity.

Appliance	Mains or battery	Who uses it

Electricity 10
Let's not waste electricity

Electricity is an important part of our lives. It costs money to produce. It also uses resources to make. Some people have a habit of using much more electricity than they need to.

Explain why the following things waste electricity:

- Don't leave lights on when you leave a room.
- Don't use air conditioning when you could use a fan.
- Don't leave the fridge door open.
- Don't put hot things in the fridge.
- Don't have long hot showers
- Don't leave the TV on if no one is watching it.
- Don't iron your clothes unless you really need to.
- Don't allow hot taps to drip.

Make a poster telling people not to waste electricity. As well as using words, include at least 5 pictures to explain.