

Science, Social Studies, Health

Teacher's Guide Year 4

A God-centred Curriculum

Based on the character and nature of God

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God is Love Teacher's Topic Guide Year 4

Topic: Special Communities – The Elderly and Disabled

Duration: 5 weeks

Spiritual Awareness: Jesus showed compassion

Jesus showed compassion towards the blind, the deaf and the disabled. His healing ministry has a major focus upon these groups. Serving involves compassion. Compassion is more than feeling sorry for someone. It is reaching out and helping them. As God's servants, He expects us to reach out and help those who cannot do things as well as we can. Serving those who are slower or less able takes patience.

Values: Our response to 'God is Love'

- **kindness, patience and gentleness** towards others
- **compassion** towards those who are hurting or in need
- **friendliness**
- **inclusion** of those who are elderly or disabled

Outcomes: Students will

- identify different types of disabilities
- identify the needs of the special community being studied
- describe community services and facilities available to aged and disabled people
- appreciate the needs of the aged and disabled, and show them respect and consideration
- meet people who are aged and / or disabled
- compare types of disabilities of the handicapped
- compare the lives of handicapped, disabled people with others
- classify areas in which we can help the elderly, e.g. safety, friendship, house management
- imagine how it would be to be elderly or disabled

Bible stories and passages

2 Samuel 4 & 9 - King David showed kindness to the lame prince, Mephibosheth, and allowed him to live in his house.

Luke 6:6-10 - Jesus heals a paralyzed hand

Mark 10:46-52 - Blind Bartimaeus receives sight

John 9:1-34 - The man born blind

John 5:1-18 - The man at the pool

Matt 9; Mark 3:1-6; Matt 12:10; Luke 18:35-43 – Jesus showed kindness through healing disabled people.

Bible verses

1 Corinthians 13:4 - Love is patient and kind.

Ephesians 4:32 - Be kind to one another.

1 Thess 5:14 – Help the weak, be patient with everyone.

1 Peter 5:7 Leave all your worries with Him because He cares for you.

Key Questions

What is the meaning of disabled?

What are some of the problems that disabled people have?

How can we help them?

How would you like to be treated if you were disabled?

What do elderly people value most?

What are some things that old people can't do well?

How can we help old people?

Activities

a) The elderly

- List the changes that take place in a person's body as they grow older.
- Try on some glasses and explain how you feel.
- Listen to a story with volume turned right down; explain how you feel when it is difficult to hear.
- Describe the changes to bones, as they become more brittle. Explain what could happen in the case of a fall.
- Describe the changes to the skin as you grow older.
- Make a list of ways we can help elderly people e.g. speaking clearly; treating them carefully
- Visit a home for the aged. Make gifts and cards or provide entertainment.
- Interview an elderly person and find out the type of help required.
- Invite visitors who care for the aged.
- Interview an elderly person and find out the type of help they require.

b) Disabled

- List various types of disabilities, e.g. blind, deaf, quadriplegic, paraplegic.
- Discover the facilities for the disabled in your school or community.
- Study the life of a particular handicapped person, e.g. Joni Eareckson
- Learn about sign language for the deaf.
- Research the work of guide dogs, their training and characteristics.
- Discuss the servant qualities of guide dogs. Discuss the importance of obedience.
- Discover the facilities for the disabled in your community or school.
- Research the work of Louis Braille. Try reading some raised lettering while blindfolded.
- Conduct a trust walk to experience the feeling of being blind. Work in pairs, one person wearing a blindfold while the partner leads.

Assessment

1. Write a report on an interview with an elderly or disabled person.
2. What have I learned from the study of special communities...
 - about God?
 - about doing what God wants me to do?
 - about the Bible?

Values education Year 4

God is Love

Patience

God is patient with us. Because He loves us, He always gives us another chance when we do the wrong thing.

Patience is...

- learning to wait
- being patient with people (or animals), when they don't do what we want them to do
- being patient with ourselves and not getting upset when we make mistakes
- waiting for God to answer our prayers
- finishing a job properly.
- sticking with a difficult task

Activities

1. Which of these things would you need to have patience for?
 - a) lying in the sun
 - b) watching T.V.
 - c) making a clay pot
 - d) cleaning up a big mess
 - e) untying a piece of tangled string
 - f) training a dog
2. Make a house of cards. See who can make their card building stand for the longest time.
3. Play the paper tearing game. Each person has a small square of paper, (all pieces the same size). Tear the paper round and round starting from one corner. See who can get the longest strip of unbroken paper from the square.
4. Begin and complete a craft that requires patience.

Questions

1. You have been asked to help your grandmother with shopping. She cannot walk very well, and she has poor hearing. Explain why you need patience when helping her.
2. You have been asked to help your baby brother eat his food. He has to be spoon-fed. Explain what might go wrong and why you have to be patient in doing this job.
3. Explain the meaning of this Bible verse: "Love is patient and kind."

What does the Bible say about patience?

1 Cor. 13:4-8 Love is patient and kind.

Galatians 5:22 Patience is a fruit of the Spirit.

1 Thessalonians 5:14 Be patient with everyone.

Hebrews 12:1 Run the race with patience.

2 Peter 1:6 Add to temperance patience.

Psalms 37:7 Rest in the Lord and wait patiently for Him.

Art Year 4

God is Love

Topic: Special Communities; the Elderly

Biblical connection: God is a Father who loves us and communicates with us. We can share His love with others.

Bible art as a wall display: Caption: "Loving God, loving others"

Matthew 22:28-29 Love the Lord your God with all your heart, soul, mind and strength, and love your neighbor as yourself.

Ask the students to draw themselves involved in acts of kindness and stick these pictures around the theme title.

Activities:

1. Drawing

- Draw a portrait of your grandmother / grandfather or another elderly family member
- Draw things you like to do together with your grandparents or elderly relatives.

2. Painting

- Paint a picture to give as a gift to an elderly, or sick person. Make a cardboard frame for it.

3. Construction

- Make gifts for elderly or sick people.

God is Provider Teacher's Topic Guide Year 4

Topic: Water

Duration: 5 weeks

Spiritual Awareness

Genesis 1:1-2 tells us that in the beginning, when God created the universe, a raging ocean covered everything and there was total darkness. The power of God was moving over the water and on the first day He created light.

According to the Bible, the earth was formed out of water, and was not a molten ball in the beginning, as we are told by evolutionists.

On the second day God divided the water in two. This was the water above, (the atmosphere), and the water below. The water vapour above was called 'sky'. This happened in the second 24-hour day of creation. No rain fell until the time of the Great Flood.

God's power is expressed in the greatness of the creation. We see this in the oceans, and powerful weather forces. This powerful God cares about me individually and provides for me. Without water there would be no life.

Values: Our response to 'God is a Provider'

- **Thankfulness** to God for the things He provides, and thankfulness to parents for the things they provide
- **Generosity**: Sharing with others the things that God has provided
- **Responsibility** in using wisely all that God has provided
- **Contentment** – knowing the difference between our needs and our wants

Outcomes: Students will

- understand that the earth was formed out of water, and was not originally a molten ball as the evolutionists tell us
- understand the importance of water to life
- explain the water cycle
- understand some of the properties of water
- compare how water reacts with different materials

Bible stories and passages

Genesis 1 - The creation

1 Kings 17:2-6 - Elijah fed by ravens in time of drought.

2 Kings 4: 42-44 - Elijah multiplies bread.

Exodus - 16,17 - Provision for the Israelites in the desert.

Genesis 6-8 – The Great Flood

Psalms 104:5-18 – God provides water through the Creation

Matthew 14:22-32 Jesus walks on water. (Jesus' power over creation)

Mark 4:35-41 - Jesus calms the storm.

Bible verses

Psalm 93:4 - The Lord rules... greater than the roar of the oceans, more powerful than the waves of the sea.

Job 36:22 – Remember how great is God’s power. He is the greatest teacher of all.

Job 36:27-28 – It is God who takes water from the earth and turns it into drops of rain. He lets the rain pour from the clouds in showers for all mankind.

Psalm 104:13 – From the sky you send rain on the hills, and the earth is filled with your blessings.

Key Questions

What was the earth formed out of? (Genesis 1:1-2)

What did God do with the water on day 2 of the creation

Why did God create water?

What would the world be like without water?

How do we get water?

What is water made of?

What is a liquid?

What do we call water when it is solid?

What do we call water when it is a gas?

How can we thank God for all that He has made?

Activities

- Discuss the basic needs of life, of which water is one. Make a list of our needs and our wants, (the things that are not necessary)
- Read Genesis 1:1-2 and discover how the earth was formed out of water.
- Make a chart showing our dependence on water, e.g. for drinking; for plant survival; for washing.
- Conduct experiments with plants to show their dependence on water.
- Measure rainfall.
- Conduct evaporation / condensation experiments.
- Observe water in three states of matter.
- Study and chart cloud cover and rainfall.
- Classify cloud types.
- Produce a poster that shows how the Water Cycle works. Make sure it has a glossary of terms used.
- Study the effects of drought experienced in different parts of the planet.
- Discuss ways of helping and supporting people who suffer from major disasters such as flood, drought and famine.
- Discuss water conservation. Make a table to record your use of water during a typical day. Compare your use with other areas around the world.
- Identify water catchments. Explain how water gets to our homes. Research the water collection and storage system in your area. Write a report on this.
- Conduct floating and sinking experiments.
- Conduct experiments to see how water soaks into different materials.
- Observe how long it takes for wet materials to dry. Where did the water go?

- Discuss the effects of pollution upon our water. Write a letter to the government about pollution in some waterways around Fiji. Suggest ways in which you think the damage can be repaired.
- Create a collage showing the various uses of water for recreation.
- Design something practical that will purify water.
- Research how humans have used water over history. Including how water has been used for power in the past and the future.
- Construct a fact sheet about water erosion and what is being done to solve the problem in various places.

Assessment

1. Write up your experiments that show:
 - a) how water exists in the three states of matter
 - b) that plants depend on water
 - c) that water can make some objects float
 - d) that water will soak into some materials
2. What have I learned from the study of water...
 - about God?
 - about doing what God wants me to do?
 - about the Bible?

Learning Connections

Art: Observe how thin water colour paints and dyes soak into dry / wet paper.

Health: importance of drinking water; water for washing; uses of water

Values education Year 4

God is Provider

Contentment

We feel peaceful and content knowing that God is our provider. We are thankful for all He provides.

Contentment is...

- being thankful for all that God has done for me
- being thankful for all that God has provided for me
- feeling peaceful inside, knowing that God is taking care of me
- resting in God's care

Activities

1. When do you think people are most content? Choose from the list:

- when they have lots of money
- when they are having a good time
- when they are trusting in God
- when they know they are cared for

2. When do you feel content?

3. When have you felt the opposite?

4. It is not wrong to want to have material goods if

5. It is wrong to want material goods if

What does the Bible say about contentment?

Matthew 6:25-34 Do not worry about tomorrow.

John 14:1-3, 18, 25-27 *Do not let your hearts be troubled. Trust in Me.*

Phil 4:12-14 Paul says that he knows what it is to be content.

Hebrews 13:5 Be free from the love of money.

Practical Science 1: Water

Making a solution; evaporation

What you will need:

Some sugar
Some hot water from a kettle
Glass jars
A spoon
A saucepan and a hotplate

See how many teaspoons of sugar will dissolve in hot water.

Note: Due to hot water involved, this experiment is for teacher demonstration only.

What to do

1. Place a spoonful of sugar in the hot water and stir. The sugar melts. This is a *solution*.
2. Take another jar and place 4 teaspoons in hot water and stir.
3. Take another jar and place 6 teaspoons in hot water and stir.
4. Keep adding more and more sugar until it won't dissolve anymore. When this happens, the solution is *saturated*.
5. Now heat the sugar solution in a saucepan on the stove until boiling. Using oven gloves, place a large plate over the saucepan and collect some steam. Get someone to taste the water collected on the plate. Does it taste like sugar?

Record the experiment:

What did you do?

What did you see?

Why did this happen?

Practical Science 2: Water

Make an Egg Float in Salt Water

<http://www.sciencekids.co.nz/experiments/floatingeggs.html>

An egg sinks to the bottom if you drop it into a glass of ordinary drinking water but what happens if you add salt? The results are very interesting and can teach you some fun facts about density.

What you'll need:

- One egg
- Water
- Salt
- A tall drinking glass

Instructions:

1. Pour water into the glass until it is about half full.
2. Stir in lots of salt (about 6 tablespoons).
3. Carefully pour in plain water until the glass is nearly full (be careful to not disturb or mix the salty water with the plain water).
4. Gently lower the egg into the water and watch what happens.

What's happening?

Salt water is denser than ordinary tap water, the denser the liquid the easier it is for an object to float in it. When you lower the egg into the liquid it drops through the normal tap water until it reaches the salty water, at this point the water is dense enough for the egg to float. If you were careful when you added the tap water to the salt water, they will not have mixed, enabling the egg to amazingly float in the middle of the glass.

Practical Science 3: Water

Can a plant live without water?

Set up two pots with the same type of pot in each plant.
Keep one plant watered, and don't water the other.
What happens to the plant that has no water?

Practical Science 4: Water

Which materials will absorb water?

Collect a number of different materials:
Plastic, wood, pottery, stone, paper, cotton cloth, wool

Make a chart and give each material a score out of 5 for how well it allows water to soak in.
This is called 'absorption'.

Practical Science 5: Water

How fast will wet cloth dry?

Set up 3 pieces of cotton cloth.
Put one in the fridge, one on a windowsill in a sunny place or near a heater, and one on the clothes line on a windy day.

Make a chart to record the drying time. What happened after 1 day? 2 days? 3 days?

Art Year 4

God is Provider

Topic: Water

Biblical connection: God has provided water for life, through rainfall, rivers and lakes.

Bible art as a wall display:

Make a large display of the water cycle.

Psalm 136:1 Give thanks to the Lord for He is good

1. Drawing, painting and collage

Ask students to:

- Using oil pastel or crayon, make line drawings of patterns that water can make: swirls, waves, spray, bubbles. When finished, cover the page with a thin blue wash.
- Draw their favourite water experience.

2. Painting

- Experiment with adding water to paint. Try different techniques with thin paint, e.g. blowing with straws, merging colours
- Paint a scene: "a rainy day"

3. Dying

- Use water to make dyes, e.g. boil onion skins, water down food colourings. Try some tie dying with washed cotton fabric.

4. Printing

- Make bubble prints

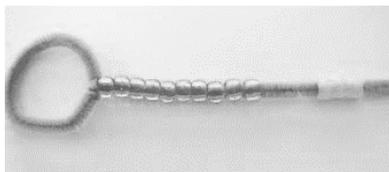
Instructions for bubble prints:

Pour 1 tablespoon of detergent plus water into a small, shallow bowl.

Add a few drops of food colouring to the bubble mix and stir well.

Place a bubble wand (shaped wire or pipe cleaner) in the coloured bubble mix, remove and blow bubbles towards your paper.

As the bubbles hit the paper and pop, they will leave interesting patterns.



God is Our Saviour Teacher's Topic Guide Year 4

Topic: China

Duration: 3 weeks

Spiritual Awareness: God loves everyone equally

- God's love embraces all cultures. Jesus tells us to love our neighbour. This extends beyond the person living next door. As in the story of the Good Samaritan, kindness to our neighbour may mean showing compassion to someone culturally different.
- The true meaning of 'loving our neighbour' is to show personal interest and appreciation, and to extend God's love to them.

Values: Our response to 'God is our Saviour'

- **cultural understanding** (John 3:16)
- **kindness, patience** and **gentleness** towards others
- **compassion** towards those who are hurting or in need
- **friendliness, forgiveness** and **faithfulness**

Outcomes: Students will:

- identify some of the countries within the continent of Asia
- use the world map to locate countries
- research history, geography and culture of a China
- experience aspects of Chinese culture
- collect and organize items for display
- appreciate feelings and problems of minority groups
- realize that we can learn from other cultures
- realize that God loves everyone equally and wants everyone to come to know Him through His Son

Bible stories and passages

- Luke 10:25-38 The Good Samaritan
- Mark 10:13-16 Jesus loves all the children of the world
- Luke 10:27; Matthew 22:39 Love the Lord with all your heart...and your neighbour as yourself.
- Romans 3:19-26 People could not be made right with God by following the law, so God made another way, so that all nations would have opportunity to come to Him.
- James 2:1-9 Warning against prejudice.
- Acts 10:34-36 The gospel for all nations
- Acts 16:6-10 Taking the gospel to the nations

Bible Verses

- John 3:16 For God so loved the world ...
- 1 Corinthians 13:14 Love is patient and kind.
- Acts 10:34 God treats everyone on the same basis.
- John 13:34 A new commandment...love one another.
- John 15:13 The greatest love
- 1 John 4:16 God is love.

Activities

- Identify Asia and some of the countries within it.
- Ask the students what they already know about countries within Asia.
- Devise a list of questions that the students would like to find out about countries within Asia.
- Draw maps and mark in major landmarks, like capital city, rivers, mountains and seas.
- Discuss the early history of China. How is China different today?
- Make a shopping list for a Chinese meal.
- Find out the main agricultural and industrial products of China.
- Make a poster on how rice is grown.
- Compare life in the cities to life in the country.
- Design a travel brochure for an Asian country.
- Research celebrations that are unique to China.
- What technology is used in China? Is there a difference between cities and rural localities? Do they have TV, mobile phones, computers? Compare their technology with that of your country.
- Study the biographies of Hudson Taylor and Gladys Aylward who brought the Gospel to China.
- What impact has Communism had on China?
- Research Christianity in China today, including the underground church.

Teacher's notes: People's Republic of China

Geography

Area: 9,573,000 sq km

The third-largest state in the world, also containing the highest mountains and plateaus in the world. The climate and geography are extremely diverse, ranging from tropical in the south to sub-arctic in the north, from a highly industrialized and modern eastern seaboard to sparsely populated western deserts and mountain ranges. Hong Kong and Macau are integral parts of China, though their statistics are not included here.

Population: 1,330,584,783 Annual Growth: 0.63%

Capital: Beijing

People living in cities: 44.9%

Official language: Putonghua (Mandarin Chinese); Languages: 296 and many dialects

Religion

Largest Religion: Non-religious

Christians: 8%

Buddhists: 10%

Challenges for Prayer

China remains officially atheist. The Communist government are against true Christianity so true believers meet secretly in "underground" churches. There have been many Christians imprisoned and treated very badly by the Communist government.

Assessment

1. Present information on one Asian country and its culture.
2. What have I learned from the study of different cultures...
 - a. about God? about doing what God wants me to do? about the Bible?

Values education Year 4

God is our Saviour

Love for people of different nations

God created people differently. He loves all people, regardless of race, religion or ethnicity.

Our response to God is our Saviour

- understand that Jesus died for the whole world, every person of every nation
- recognize that God loves all people equally
- show kindness and consideration to all
- accept and love others
- appreciation of certain aspects of culture such as art, food, dress, music

Activities and discussion

1. Compare cultural traditions of two different ethnic groups in the areas of: food, music, art.
2. The word “tolerance” means accepting other people’s differences. Most differences in culture, like foods, art and music are good differences, and we can all learn from each other about new foods and art forms. But Christians do not participate in religions and ceremonial practices that go against what the Bible says.
3. In China many years ago, there was the cultural practice of binding the feet of baby girls. This meant keeping the feet very tightly wrapped in bandages so that the feet could not grow properly. To have small feet was thought to make girls look beautiful. But how painful it was for the little girls, and how difficult it was for them to walk with tiny steps when they were older. The missionary Gladys Aylward helped to stamp out this practice. Would foot binding be a good aspect of culture to accept, appreciate and take on? Why not?

What does the Bible say about accepting people of different cultures?

- Luke 10:25-38 The Good Samaritan
- John 3:16 God so loved the WHOLE world that He gave His son
- Revelation 7:9 After this I looked, and there before me was a great multitude that no one could count, from **every nation**, tribe, people and language, standing before the throne and before the Lamb. They were wearing white robes and were holding palm branches in their hands.
- Matthew 22:37-39 Love the Lord your God. Love your neighbour as yourself. (Neighbour refers to people of other nationalities)
- John 4:1-26 Jesus and the Samaritan woman.

Art Year 4

God is our Saviour

Topic: China

Biblical connection: God loves the people of every nation of the world. He sent Jesus to give every person an opportunity to accept and follow Him. We thank God for sending missionaries to our country to tell us about Jesus.

Bible art as a wall display: Jesus said, “Go to every part of the world and tell people about Me.”

Mark 16:15

Make a display of a map of the world and highlight China.

Drawing

Chinese Willow Pattern



This is a famous drawing that even today appears on plates, in the colours of blue and white. This traditional art tells a story. Students can make their own pattern drawing, and tell their own story in pictures. It could be a Bible story. Supply students with a circle of paper that represents a plate.

In China in a distant part of the country, (its name long forgotten), lay a small town with a king who ruled selfishly for years on end. He raised taxes at high prices and if a family was too poor, he would charge double. He had a fair sweet daughter Mai with black hair like silk and beautiful eyes. She was deeply in love with the gardener, Chang. Now the king kept Mai in a small tower with an entrance to a magnificent garden and every night two doves would carry small messages between them.

The king loved money and a rich old lord named Sou-Yang offered him gold and a lot of money to take Mai's hand in marriage. So the king agrees.

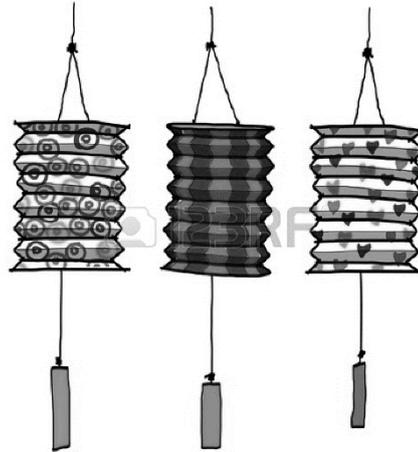
On the day of the wedding, the gardener Chang got into the tower and into Mai's room. They escaped by boat to a far land down south. They were married and after four years of happy marriage the king found them and commanded his guards to throw both Mai and Chang into a wilderness where they could not find their way out. Eventually they starved and died in each other's arms, but the gods saw their sad story and raised them in the form of immortal doves. Now they will live together for all eternity.

Discuss with the students the beliefs that surround this story and where it would differ to Christian beliefs.

Painting:
Cherry blossom art



Construction:
Paper lanterns



Pattern:
Chinese writing characters
Students can select some characters and make them into a pattern

王 沪 宁 马 铃 薯
王 滬 寧 海

Note the significance of Noah's Flood in the following: (8 people in a boat)

船	舟	八	口
LARGE BOAT	Boat	Eight	Mouth or Person

God is Pure and Holy Teacher's Topic Guide Year 4

Topic: Cleaning up

Duration: 4 weeks

Spiritual Overview: God forgives and makes us clean

Making things clean is a Biblical symbol for God's purity and holiness. Our hearts are made clean by God's forgiveness. Jesus died to cleanse us from sin. He offers forgiveness to all those who will accept it.

We can never cleanse ourselves from sin. We can never be good enough by trying our best. It is Jesus who does the cleansing and washing away of sin. God became a man, and through His death on the cross He offers His perfection and holiness to us. If we accept Him as Lord of our life, God looks at us as clean vessels.

Our response to 'God is Pure and Holy'

Because God is Pure and Holy I will...

- Obey Him.
- Try to do the things He wants me to do.
- Ask God to forgive me when I sin.
- Ask Him to make me clean inside.
- Admit when I make mistakes.
- Remember the fruits of the Spirit and try to show them in my life.
- Have respect for other people.
- Put God first in my life.

Bible stories and passages

Matthew 23:13-27 Jesus said that we must be clean on the inside, not just the outside.

Mark 7:1-16 The ceremonial cleansing by the Pharisees did not really make them clean.

Luke 19:1-19 Zacchaeus was forgiven and he changed his ways.

1 Samuel 16:7 Man looks on the outside appearance but the Lord looks on the heart.

Matthew 26:69 & John 21:15 Jesus forgives Peter.

John 13:2-17 Jesus washed the disciples' feet.

Matthew 27 Jesus died for our sins

Bible verses

1 John 3:9 Whoever is a child of God does not continue to sin.

Psalm 51:7 Take away my sin and I will be clean. Wash me and I will be whiter than snow.

Matt. 6:9 Forgive us our sins as we forgive those who sin against us.

Psalm 51:10 Create in me a clean heart O God

Key Questions

Why do we need to clean our homes - inside; outside?

Why do we need to keep our bodies clean?

What is sin?

How do we feel when we sin?

Who can forgive us for our sin?

What does Jesus mean when He says that we must be clean on the inside?

Outcomes

Students will

Knowledge

- understand the requirements of maintaining a clean home environment
- suggest ways of maintaining a clean school environment
- suggest ways of cleaning up the environment
- understand the importance of both outer and inner cleanliness
- understand that inner cleanliness cannot take place by 'being good', but by accepting God's forgiveness and living as a disciple of Jesus

Skills

- observe the reactions cleaning agents have on objects
- classify cleaning agents according to properties
- record results on a chart

Values

- willingly undertake cleaning activities
- apply themselves to the task and finish the task

Activities

Caution - Select substances that are safe for the children to use. Check for soap allergies.

Warn children not to touch their eyes when using soaps. Some experiments should be 'teacher only' experiments.

- List the jobs that need to be done in the home.
- Match cleaning agents, or cleaning utensils to jobs, e.g. washing powder for washing clothes; broom for sweeping.
- List the ways in which we keep our bodies clean.
- Make a poster about 'keeping clean'.
- Match personal care products to task, e.g. shampoo for washing hair.
- Discuss reasons for keeping clean, germs, disease and the need for sterilization.
- Classify cleaning agents and describe their properties, e.g. makes bubbles, makes froth, used with water, powder, liquid, spray pump.
- Wash clothes and observe drying rates in different weather conditions.
- Blow bubbles.
- Add cleaning products to half-filled jars of water. Screw on the lid and shake. Compare quantities and sizes of bubbles. Observe whether bubbles remain on the surface, how long they take to disappear, oiliness on the surface, sediments.
- Test products for dissolving ability in cold water compared to hot water.
- Conduct a stain removing experiment. Prepare stains on pieces of white fabric, e.g. mud, grass, ink, beetroot juice. Prepare bowls of cold water, of equal volume. Add different kinds of cleaning agent, (liquid detergents or dissolved powder soaps, Bi-carb soda), to each bowl. Soak for at least 24 hours. Repeat the experiment with warm water.

- Draw conclusions about the best stain removers.
- Record results in table form.
- Discuss ways to dispose of rubbish.
- Investigate germs, disease and disease carriers.
- List creatures that love garbage, e.g. flies, rats, cockroaches, dogs and cats.
- Perform 'clean up' operations in and around the school.
- Make posters about keeping the environment clean.
- Discuss 'clean up' jobs that need to be performed in the environment, e.g. cleaning up litter, oil spills, rubbish in waterways.
- Investigate ways of recycling of paper, glass, cans.

Assessment

1. Complete the table and make a pictorial chart about what each of these cleaning products can do:

	Detergent	Soap powder	Bi-carb soda
Makes bubbles			
Makes froth			
Cleans clothes			
Cleans dishes			
Cleans bench tops			

2. How has learning about cleaning helped me to learn more...

- about God?
- about doing what God wants me to do?
- about the Bible?

Learning Connections

English: Write about helping with cleaning up at home. Make a list of the jobs to be done in the home.

Science: Comparison of cleaning products

Mathematics: Use recycled rubbish for counting, e.g. bottle tops, jar lids for making sets

Health: cleanliness and safety of cleaning materials; ideas for cleaning up around the school

Social Studies: littering in the community

Art: Bubble art – Mix food dye with detergent and water in a bowl. Blow bubbles with a straw. Place a piece of paper on top. Remove and see the result.

Biography: Daniel Bula

Year 4 Values education

God is Pure and Holy

Responsibility

God expects us to do what's right. God shows us what is right in His Word, the Bible. We have a responsibility to care for the environment.

Responsibility is...

- being reliable
- being accountable
- looking after my possessions
- caring for God's world
- doing the things I should do
- being in charge of the way I act
- doing the things I am meant to do

Activities

1. Choose a pet that you would like to be responsible for. Write your pet's name, and the kind or breed of animal. It can be a pet of your own, or an imaginary one. List all the things you must do to be responsible for your pet.
2. What would happen if you didn't do these things?
3. Name some of the jobs you are responsible for at home. What do you have to do, to do these jobs properly?
4. List some ways of being responsible at school.
5. A baby is not responsible because it is too young. Who is responsible for a baby? When do you think the baby starts to become responsible?

What does the Bible say about responsibility?

1 Peter 2:2 Grow up to be strong Christians.
Ephesians 5:8 Live as children of the light.

Practical Science Year 4

God is Pure & Holy

1. Purifying water: Mixtures, sediments and suspensions

What you will need:

- Glass jars
- Some dirt
- A strainer
- Some filter paper

What to do:

1. Mix the dirt with water in a jar. Now you have a *mixture*!
2. Mix thoroughly with a spoon.
3. Let it stand for a few minutes.
4. Now try to purify the water.
5. You can skim off any floating particles using a strainer.
6. You can pour off the water into another jar, leaving behind the particles that have sunk to the bottom. The particles at the bottom make a *sediment*.
7. Note whether the water you have poured off is clear or muddy looking. When there are particles floating in the water, (not just on top), it is called a *suspension*.

Record your results:

What did see?

Why do you think this happened?

2. Properties of cleaning products

Test cleaning products to see what they can do.

Complete the table, giving each a score out of 5.

	Detergent	Soap powder	Bi-carb soda
Makes bubbles			
Makes froth			
Cleans clothes			
Cleans dishes			
Cleans bench tops			

Art Year 4

God is Pure and Holy

Topic: Cleaning up

Biblical connection: God wanted the Israelites to be a pure and holy nation, honouring God and not serving other gods. This is because one day, Jesus would be born into the nation of Israel. God chose Moses to be lead the Israelites out of Egypt, where they were slaves to the Egyptians who worshipped false gods. Many years later, when Jesus came to earth and died for us, he gave all people the opportunity to belong to Him, by asking Him to take our sins and live for Him.

Bible art as a wall display: Show the story in pictures, from slavery in Egypt to the crossing of the Red Sea.

Bible verse for display:

Leviticus 11:45 45 I am the Lord who brought you out of Egypt so that I could be your God. You must be holy, because I am holy. (Good News Bible)

1. Drawing

Students can draw the events in the escape from Egypt.



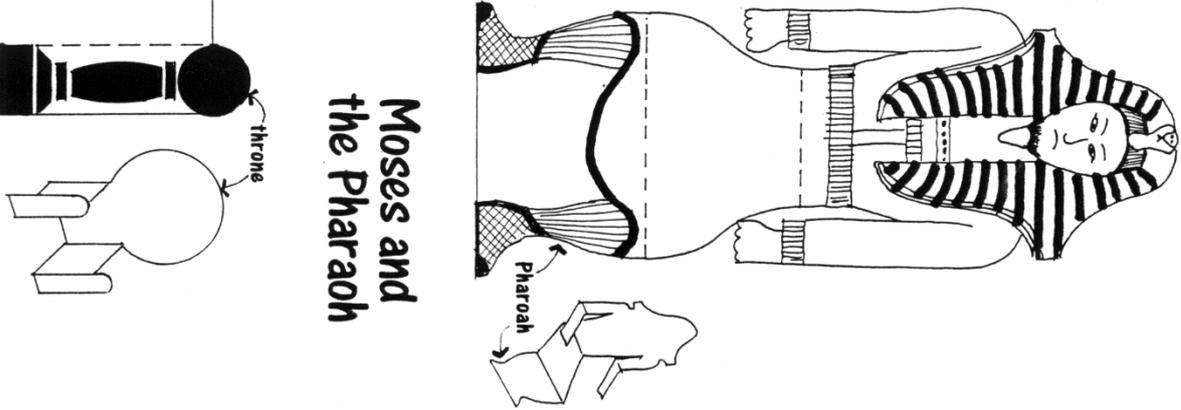
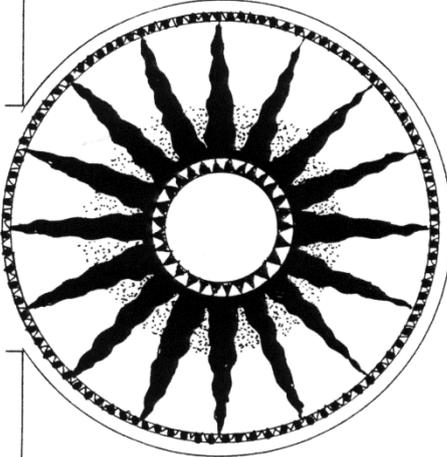
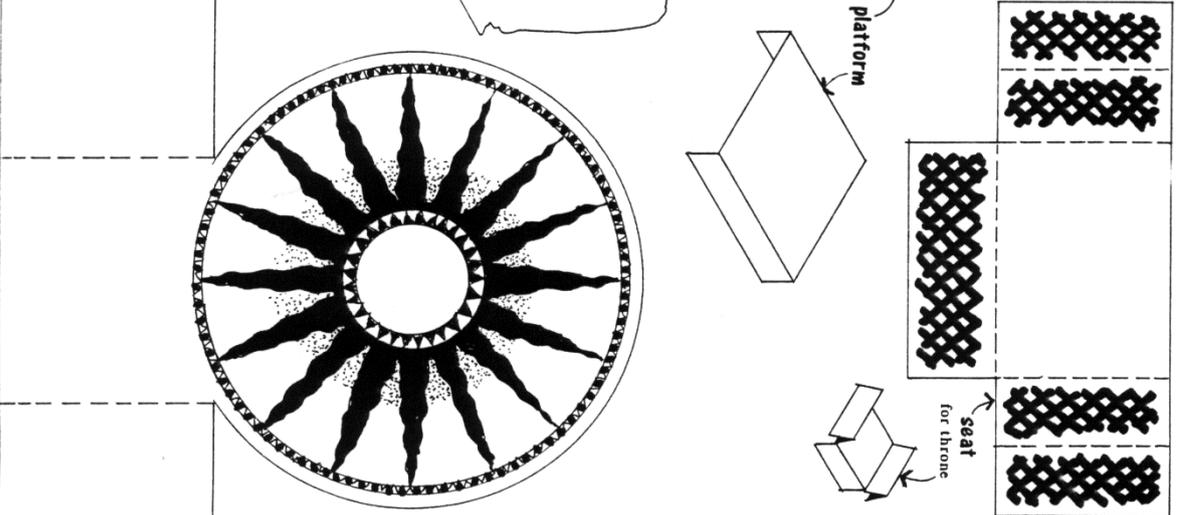
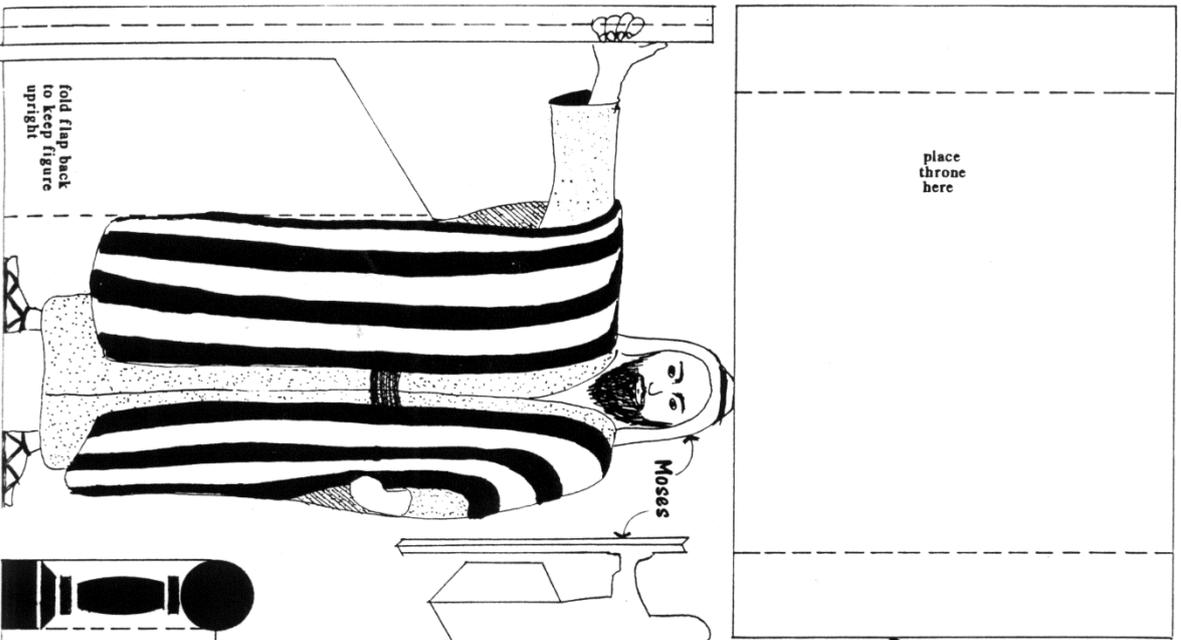
2. Construction

Use the template on the next page to make paper models.

3. Environmental cleanup: drawing, painting and collage

Draw or paint scenes of environmental cleanup, in different environments, e.g. cities, rivers, oceans and lakes, home environment, school yard

Draw the steps in the process of garbage disposal.



Moses and the Pharaoh

God is Creator Teacher's Topic Guide Year 4

Topic: Ecosystems / Endangered species

Duration: 5 weeks

Spiritual Awareness: *God is Creator*

- God's original creation was perfect. When God had finished the creation he stated that it was 'good'. A good and perfect creation cannot include killing and death. This means that in the Garden of Eden, the original perfect ecosystem, all animals ate plants, (Gen 1:29).
- The Fall brought about new types of ecosystems where some animals ate plants, but other animals ate animals for survival. The ecosystems in our world today are a result of a curse that came into the world because of man's sin. One day God will restore ecosystems to perfection, where the lion and lamb will graze peacefully together.

God is Protector

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

Values: Our response to 'God is a Powerful Creator'

- **Faith** in God's ability to supernaturally create and trust that He is in control of all He has made.
- **Environmental sustainability:** Care for and protect the living things that He has created.

Bible stories and passages

- Genesis 1 - The creation
- Genesis 2:19 – Adam named the animals
- Isaiah 11:6-9 – the restoration of the perfect Creation – the wolf and lamb will live peacefully together.
- Psalm 65:6 -13 – God is in charge of nature.

Bible verses

- Genesis 1:28 – God said, "I am putting you in charge of the fish, the birds and all the wild animals". (GNB)
- Psalm 150:6 - Praise the Lord, all living creatures!
- Psalm 148:9-10 – Praise Him, hills and mountains, fruit-trees and forests; all animals, tame and wild, reptiles and birds.
- 1 Chronicles 29:11 – You are great and powerful, glorious, splendid and majestic. You are king, supreme ruler over all. (GNB)

Key Questions

About God

What did animals eat in God's original creation?

How do we know that there was no killing?
How did the creation change after Adam and Eve sinned?
Today animals eat other animals. Is this part of God's perfect plan?
Will there be animals in Heaven? What are we told about these animals?
Who is responsible for caring for the creation?

About ecosystems

What is an ecosystem?
What do the animals eat?
Where do they live?
What is the name of where they live? (habitat)
How do they depend on the plants and other animals around them?
What would happen to these animals if their main food source no longer existed?
In what ways have people changed and destroyed the environment in which many animals live?
What is the result of destroying the places where animals live?
Which animals are endangered?
How can we help to protect God's creation?

Outcomes: Students will

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

Activities

ECOSYSTEMS

- Select an example of an ecosystem and draw up a flow chart showing chains of dependence within the ecosystem e.g. forest, sea life, pond, lake, African savanna
- List and classify plants and animals within the chosen ecosystem.
- Draw the chain of dependence. Draw and cut out drawings of items in a food chain, e.g. grass, insects, birds, bears. Then each item is glued to a large paper strip. Make an actual "chain" out of the strips by looping them together in a paper chain.
- Work in groups, giving each group 4 animal pictures or animal word cards. Ask students to decide the order of the animals in the food chain.
- Students can make up some food chains, e.g. a food chain that could be found in the sea, a rock pool or in the bush. Remind them that all food chains must start with plants. Create "thinking maps" to show the different levels of a food chain.
- Make a mobile with cut out labeled shapes as follows: the sun at the top, plants next, herbivores next, and predators at the bottom.

- Give the students about 8 different word/picture cards, e.g. grass, eagle, caterpillar, rabbit, cat, mouse, lettuce, pigeon. Ask them to see how many different food chains they can make.

ENDANGERED SPECIES / ENVIRONMENTAL CONSERVATION

- Look for signs of man's intervention, e.g. pollution
- Discuss the problems caused by man upsetting the balance, or damaging the homes of plants and animals.
- Discuss ways in which introduced species have upset the balance of nature in certain areas.

Values education Year 4

God is Creator

Environmental sustainability

God tells us that we are to care for His creation and the resources He has given us.

Environmental sustainability is ...

- looking after the plants, animals, soil and water in the environment
- thinking about the future and doing things that will keep the environment safe from destruction in the future
- acting responsibly when we use plants, animals, soil and water in our environment
- showing wisdom in using and preserving our nation's resources
- being wise stewards
- making wise use of the resources that God has provided
- recycling

What does the Bible say about environmental sustainability?

Genesis 1:28-31 God said, "Be fruitful, fill the earth and subdue it."

Genesis 1:29 "God said, Look I have given you all the plants that have grain for seeds in them. They will be food for you."

Genesis 2:15 God put man in charge of the creation

1 Cor 4:2 Stewards should be trustworthy

Proverbs 4:7 The beginning of wisdom is this: Get wisdom, and whatever you get, get insight.

Psalms 96:11-12 Let the heavens be glad and the earth rejoice, the sea and all that is in it...

Art Year 4

God is Creator

Topic: Ecosystems

Biblical connection: God created living things to live together. Living things are part of God's creation and depend on each other.

Bible art as a wall display: Make a large mural of an ecosystem.

Bible verse: Genesis 1:28 I am putting you in charge of the fish, the birds, and all the wild animals. (Good News Bible)

1. Collage

Draw, cut out and paste living things in a particular ecosystem.



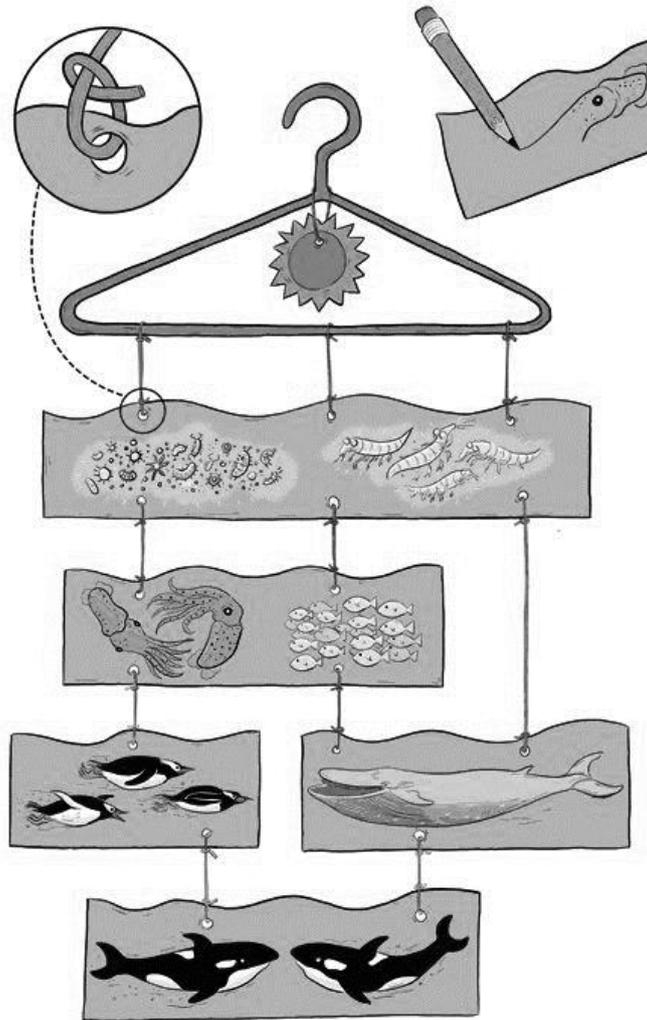
2. Construction

Make a model of an ecosystem. This could be inside a cardboard box.



3. Mobiles

Make mobiles of an ecosystem. with the sun at the top and the order of dependence of living things underneath. Example:



God is Wise Teacher's Topic Guide Year 4

Topic: Safe and Healthy

Duration: 4 weeks

Spiritual Awareness

Our bodies are temples of the Holy Spirit. Each individual is extremely valuable. It is therefore our responsibility to look after ourselves, to think ahead and act wisely for our own protection. Wisdom involves listening to wise advice and obeying rules for safety and good health.

Values: Our response to 'God is Wise'

- **Integrity:** Ask God and find out from the Bible: What is the right thing to do? Put this into practice
- **Wisdom:** Learn from people who are wise
- **Trust** in God to be a guide for the journey of life
- **Responsibility**

Outcomes for safety:

Students will gain an understanding of principles for safety:

- In the home
- In outside play
- On the internet
- In the case of strangers
- In a storm
- In the water

And learn what to do in the case of an emergency.

Outcomes for health:

Students will gain an understanding and put into practice the following health principles:

- Drinking water
- The importance of eating fruits, vegetables and foods from nature
- The importance of minimizing sugar in the diet
- Eating a healthy breakfast and lunch
- Eating a healthy meal together with the family

Bible passages

The wisdom of discipline: *The Bible tells us that athletes must discipline their bodies in terms of training. We can discipline ourselves through exercise and healthy eating; but also discipline ion prayer and Bible reading, as we are training in the Christian life.*

1 Cor 9:24-27 (Good News Translation)

Surely you know that many runners take part in a race, but only one of them wins the prize. Run, then, in such a way as to win the prize. Every athlete in training submits to strict discipline, in order to be crowned with a wreath that will not last; but we do it for one that will last forever. That is why I run straight for the finish line; that is why I am like a boxer

who does not waste his punches. I harden my body with blows and bring it under complete control, to keep myself from being disqualified after having called others to the contest.

The wisdom of following good advice:

Proverbs 19:20 (Good News Translation) If you listen to advice and are willing to learn, one day you will be wise.

Proverbs 15:31-32 (Good News Translation) If you pay attention when you are corrected, you are wise. If you refuse to learn, you are hurting yourself. If you accept correction, you will become wiser.

Discuss the good advice we should follow in terms of keeping safe and keeping healthy.

Key Questions

What is wisdom?

Why should we take care of our bodies?

Why does God want us to follow rules?

What rules can we make for keeping safe?

What rules can we make for keeping healthy?

Activities

Make posters:

- **safety and hygiene posters.** Show different situations, e.g. hand washing, road safety
 - the eight “NEW START” principles for good health:
- **Nutrients** – are the parts of food that makes us grow, and stay healthy. Only healthy foods do this.
 - **Exercise** – at least half an hour every day
 - **Water** – 6 glasses a day, (not fruit juice or fizzy drink)
 - **Sunlight** – for vitamin D for strong bones.
 - **Toxin-free** – avoid artificial food additives and avoid toxic chemicals in the environment
 - **Air** – get fresh air every day
 - **Rest** – don’t stay up late
 - **Think happy thoughts and trust in God**



Some definitions

Natural food: Also called ‘unprocessed food’. These are foods directly from nature, such as fruit, vegetables, nuts, meat, fish and eggs.

Fast food: Convenience food from outlets. Ready-to-eat foods such as hamburgers, hot dogs, fried chicken and chips. Should be eaten rarely.

Food additives: Chemicals added to give artificial colour or flavour, or to preserve the food.

Processed food: These are foods that are changed from their natural state and sold in packets, cartons and cans.

Junk food: food with no nutritional value and food that may be bad for our health. These include sweets, sugary foods, savoury snacks such as potato crisps, and soft drinks or imitation fruit drinks. Should be consumed rarely.

Values education Year 4

God is Wise

Making wise choices

God is wiser than anyone in the whole universe. We can ask God for His wisdom.

Wisdom is...

- knowing the right thing to do, and doing it
- listening to people who are more experienced than we are
- listening to parents and teachers, and doing what they say
- doing what Jesus would do
- making right choices and decisions
- making right choices about the use of time and money

Activities: Two scenarios for acting with wisdom

1. Imagine that you are at secondary school, and have to choose subjects that will be important for your future career. Explain how you would go about choosing your subjects. Who would you ask for advice?
2. Imagine you are given \$10 for a birthday present to spend on art materials. What would you choose and why?
 - paint set \$4
 - coloured markers \$2
 - coloured pencils \$2
 - coloured paper pack \$3
 - glue \$1
 - art paper pad \$3
 - cardboard sheets 50 cents each

What does the Bible say about wisdom?

Proverbs 13:10 Wisdom is found in those who take advice.

James 1:5 Ask God for wisdom.

Proverbs 2:6-10 The Lord gives us wisdom.

1 Corinthians 3:18-19 The wisdom of this world is foolishness to God.

Matthew 7:24-27 The wise and foolish builders.

The wisdom of following good advice:

Proverbs 19:20 (Good News Translation) If you listen to advice and are willing to learn, one day you will be wise.

Proverbs 15:31-32 (Good News Translation) If you pay attention when you are corrected, you are wise. If you refuse to learn, you are hurting yourself. If you accept correction, you will become wiser.

Discuss the good advice we should follow in terms of keeping safe and keeping healthy.

God is A Servant Teacher's Topic Guide Year 4

Topic: Serving through gifts and talents

Duration: 4 weeks

Spiritual Awareness: Be faithful in little things

Jesus is the greatest servant who ever lived, and He gave us the example to follow in serving. God has given each one of us different gifts and talents. It is our responsibility to develop these gifts and talents so that we may use them to serve God and others. Using our gifts and talents for God is being faithful to the One who gave us these abilities in the first place. It is important to use our gifts and talents with humility.

Values: Our response to 'God is a Servant'

- **Service:** follow the example of Jesus, the greatest servant
- **Helpfulness:** being willing to help others and put others before our own
- **Appreciation** of people who serve through their occupations
- **Humility:** thanking God for our gifts and realizing that we are not better than anyone else; we all have different gifts

Outcomes: Students will

- identify occupations within the community and the way in which these occupations serve us
- identify particular skills and talents displayed by people working in professions
- identify personal strengths and weaknesses and to list ways of developing or improving these
- identify strengths in others and to encourage others in their abilities
- understand the importance of encouraging those who lack skills in certain areas
- identify ways of using personal gifts and talents for God, with humility

Bible stories and passages

- 1 Peter 4:10 As each has received a gift, use it to serve one another, as good stewards of God's varied grace.
- Matthew 25:14-29 Parable of the talents
- Luke 12:35-47 Be faithful in doing what Jesus wants us to do.
- 1 Corinthians 12:4-8 Our God-given gifts
- Matthew 5:15 Don't hide your light under a bushel.
- Luke 18:9-14 The rich man and the tax collector, (pride versus humility).
- Luke 14:7-11 Don't make yourself important.
- Matthew 20:20-28; Mark 10:35-45 A servant of all

Bible verses

- Luke 6:10 Whoever is faithful in small matters will be faithful in large ones; whoever is dishonest in small matters will be dishonest in large ones.
- Matthew 20:26 If someone wants to be great he must be the servant of the rest.

- Luke 13:30 Those who are now last will be first, and those who are now first will be last.
- Matthew 16:24 Jesus said, "If anyone wants to come with me, he must forget self, carry his cross and follow me."

Key Questions

What does it mean to serve?

How do people in the community serve us in the jobs they do?

What is a talent? Can you think of a job that requires a talent?

What talents has God given me? What talents has God given my friends / family?

What should I do if I am good at something?

What should I do if I am not good at something?

How can I use my gifts and talents for God?

What is humility? Should I boast about the things I can do well?

Activities

- List personal gifts and talents and gifts and talents of others.
- Discuss steps we can take in improving in the areas in which we are not gifted.
- Discuss the problem of looking down on people who are not good at the things you are good at.
- Discuss ways in which we can use gifts and talents in serving others and in serving God.
- Identify people in the community who use their gifts and talents in work situations.
- Make a chart showing gifts and talents of every child in the class. Class members can make suggestions.
- Each child can make a card for another child in the class to show appreciation. Use a 'hat' to distribute names. The card can mention gifts and talents of the individual.../ *appreciate you because...*
- Discuss importance of accepting each person, and accepting ourselves, for the way God made us; not complaining about our weaknesses; remembering that we can't be good at everything; not boasting about our strengths.
- Discuss gifts and talents in the Bible. Look up the Fruit of the Spirit in Galatians 5:22-23. Discuss how these fruits can be gifts to use for others. Also look up the gifts that God gives to us in 1 Corinthians 12:4-8. Discuss personality strengths and special abilities.
- Read the beacon Media "On Safari" stories about gifts and talents.

Assessment

Use a personal gift or talent to help someone in the community. Present a report on what you did and give an oral presentation to the class.

Beacon Media resource: "On Safari" literacy resource, Level 26

This is a teaching series on special gifts that we can observe in the animal kingdom, and the examples that we can apply to our own lives.

Biography: Joel Bulu

God is Protector Teacher's Topic Guide Year 4

Topic: Taste and Smell

Duration: 3 weeks

Spiritual overview

God has created foods for us to enjoy that not only smell and taste delicious, but also provide nourishment for our bodies. God has provided us with the sense of taste and smell, not only for pleasure, but also as a way of protecting us from foods and gases that may be harmful. If we smell gas from the gas stove, then we know there is a gas leak and we must get away from it, into fresh air. We can taste and smell when food has gone off, and we should not eat it. Spoiled food contains bacteria that can make us sick.

Outcomes: Students will

- understand the role of taste and smell in protection.
- understand the role of taste buds and their ability to adapt to tastes.
- classify, compare and identify tastes of foods – sweet, salty, bitter, sour.
- identify smells.
- explain the different areas of the tongue responsible for different tastes.
- explain the connection between taste and smell.
- understand the protection in the ability to smell.
- Understand that we can protect ourselves from sickness by eating healthy food.

Bible references

Exodus 15:22-27 Bitter water made sweet. As the Israelites were crossing the desert, God provided water for them by turning the bitter water to sweet, drinkable water. Their sense of *taste* told them that the water was bitter or sweet.

James 3:5-6 The tongue not only detects taste, but can be responsible for sweet words or bitter words.

Psalm 34:8 Taste and see that the Lord is good.

Discussion:

What is a 'main meal' and when do we eat it?

What do you like about family meal times?

Why is it better to eat at the table rather than in front of the TV?

What do we mean by a balanced meal?

What are your family favourites?

What are 'processed' and 'unprocessed' foods?

Activities

Sweet, salty or sour?

Ask the students how they would describe the tastes of these foods: lemon; soy sauce, mango?

Play the taste game

Prepare a plate of different fruits. Include both sweet and sour fruits. Cut the fruit into pieces and put a toothpick into each piece. Ask a few students to volunteer to taste and identifying the fruit while blindfolded. Ask how the fruit tasted: sweet or sour?

Classify tastes

Make a list of sweet fruits (most fruits) and sour fruits (lemon, lime, grapefruit) Think of other foods that taste: salty and bitter. Bitter foods are sometimes hard to think of. They include coffee, black tea, unsweetened dark chocolate, some bitter herbs.

Make a taste chart

Children cut an A4 piece of paper into the shape of a tongue. Then fold the piece of paper into quarters. Label the sections: sweet, sour, salty, bitter. Different foods can be drawn or cut and pasted into the right taste sections.

Play the smell game

Collect samples of things that smell – e.g. perfume, vinegar, disinfectant, lemon, orange. Children take turns of guessing the smells while blindfolded.

Play the taste-smell game

While blindfolded, children taste some fruits or salad vegetables while holding their nose. Ask:

“Can you taste the food?”

“What does this show us?”

“Why do you sometimes lose your sense of taste when you have a cold?”

Try a new vegetable

Encourage children to try a vegetable that they have not tried before. Perhaps they could visit the market with their parents on the week-end.

Draw your vegetables

Children can draw/write the names of all the vegetables they have tried, and write about the tastes and smells.

1. My new vegetable is.....It tastes...
2. My favourite vegetable is.....

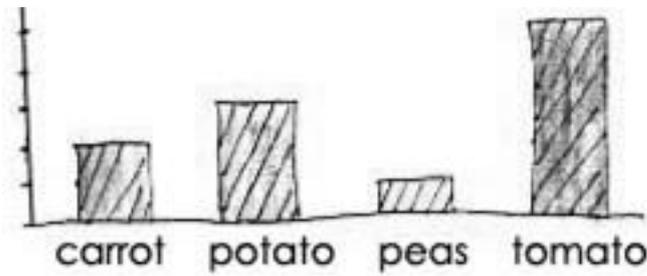
Take a survey of favourite vegetables. Graph the results.

You can do the same with fruits.

To make a bar graph:

- Ask children to choose their favourite vegetables or fruits.
- Go through the class list and record favourite fruit next to each name.
- Collate data. e.g. 5 children chose apples, 6 children chose oranges etc.
- Record data in graph form by drawing a large grid.
- Write the names of favourite fruits across the bottom of the page, one fruit/vegetable per square.

- Write numbers going up the left-hand side of the page.
- Draw a bar to show how many children chose the favourite fruits/vegetables.



Our favourite vegetables

Classify foods according to plant or animal

Take a piece of paper and make two columns: food from plants and food from animals. Make a list of healthy foods in each group.

Draw a healthy main meal

Children can draw around a dinner plate and draw a healthy meal inside the circle or alternatively, draw a meal on a paper plate.

List and draw a healthy breakfast

Children can divide the paper into two columns. On one side, list or draw their usual breakfast. On the other side, they list or draw their ideal breakfast. (What changes could be made to make the breakfast healthier or more balanced?)

Make a place mat with a healthy food design.

Design a healthy school lunch

Discussion: snack foods

What are some healthy snack foods? What are some not-so-healthy snack foods? When should we snack, and what is wrong with snacking for a long time? e.g. watching TV.

Values education Year 4

God is Protector

Keeping safe

To keep ourselves safe we need to ...

- ask God to protect us every day.
- show wisdom in behaving safely.
- care about the safety of others.

Discussion and activities

1. Who helps you to keep safe? (parents, teachers, police, government laws)
2. How can you help yourself to keep safe?
3. Make a list of safety rules for keeping safe:
 1. at home
 2. walking in a place where there is traffic
 3. when swimming

Bible passages

Proverbs 28:26 Those who walk in wisdom are kept safe.

Proverbs 18:10 The name of the Lord is a strong tower; the righteous run into it and are safe.

Bible stories: Daniel in the Lion's den; Shadrach, Meshack and Abednego were kept safe in the fiery furnace.

Practical Science Year 4

Taste Testing Without Smell

<http://www.sciencekids.co.nz/experiments/smelltaste.html>

We all know that some foods taste better than others but what gives us the ability to experience all these unique flavours? This simple experiment shows that there's a lot more to taste than you might have first thought.

What you'll need:

- A small piece of peeled potato
- A small piece of peeled apple (same shape as the potato so you can't tell the difference)

Instructions:

1. Close your eyes and mix up the piece of potato and the piece of apple so you don't know which is which.
2. Hold your nose and eat each piece, can you tell the difference?

What's happening?

Holding your nose while tasting the potato and apple makes it hard to tell the difference between the two. Your nose and mouth are connected through the same airway which means that you taste and smell foods at the same time. Your sense of taste can recognize salty, sweet, bitter and sour but when you combine this with your sense of smell you can recognize many other individual 'tastes'. Take away your smell (and sight) and you limit your brains ability to tell the difference between certain foods.

Practical Science Year 4

Topic: Taste and smell

Test your taste buds

What you need

- 4 cups of water
- ice-block sticks (or cotton buds)
- Lemon juice
- Salt
- Sugar
- Someone to do the taste test

Instructions

1. Dissolve sugar crystals into one cup, salt into another cup and pour lemon juice into a third cup.
2. Leave the fourth cup as a 'control', i.e. something you can compare against.
3. Mix a wooden ice-block stick through one solution and place it on the tip of your tongue.
4. Record the taste i.e. salty, bitter, sweet, no taste. Wash your mouth out with pure water.
5. Now repeat steps 3 and 4 for the back, sides and middle of your tongue.

Were there areas of the tongue that didn't strongly sense the taste?

Now repeat the steps 3, 4 and 5 for the other solutions.

What were your results?

Extension activity:

Now try blind folding a friend. Can they tell which solution is which?

God is Truth Teacher's Topic Guide Year 4

Topic: Geology

Duration: 3 weeks

Spiritual Overview:

God uses the symbol of a rock to describe something strong and immovable, He is that rock. Jesus told the story of the wise and foolish builders, where we are instructed to build our lives upon the rock.

God's word is a rock of truth, dependable and totally reliable. Because many geologists believe that the Earth has existed for billions of years they have a bias when dating the age of rocks. Their dating methods start from a basis that the Earth is billions of years old. But rocks and fossils do not have dates stamped upon them. The date must be interpreted, and this depends on the scientists' belief about the past. Every dating method relies on many assumptions about the past that cannot be proved. Many dates given by geologists have been proved wrong, e.g. when creation scientists submitted rocks formed by lava flows of 50 years ago, conventional dating methods came up with a date of thousands of years.

Our response to 'God is Truth'

Because God is truth I will...

- Trust Him in times of trouble
- Depend on Him
- Build my life on Him
- Believe and obey His word
- Believe that God created the Earth as recorded in Genesis

Biblical references

About rocks

Matthew 7:24 the man who built his house on the rock

Psalm 18:2; 19:14; 40:2; 61:2; 92:15 God is our rock

About salt/crystals

Job 6:6 Salt for preserving food.

Ezekiel 16:4 Salt as an antiseptic.

Leviticus 2:13; Ezekiel 43:24 Salt as an offering.

Numbers 18:19; 2 Chronicles 13:5 Covenants made with salt.

Matthew 5:13 You are the salt of the earth. But if the salt loses its saltiness, how can it be made salty again? It is no longer good for anything except to be thrown out and trampled by men.

Luke 14:34-35; Mark 9:49-50 Salt of the earth

Colossians 4:6 Salted conversation

Ezekiel 47, especially 47:11 Salt is retained

About gemstones and precious metals

Exodus 25 Materials for building the Ark: Metals including pure gold; gemstones; only the best for the most holy God.

Malachi 3:3 God is a judge who refines like a fire that refines metal.

Revelation 21 & 22 The purity of Heaven; a holy city made of pure gold, with gates of pearls and foundations of precious jewels.

Key Questions

What is geology?

What is a geologist?

Why did God create rocks and soil?

How long ago did God create rocks?

What would we say if we heard that a rock was billions of years old?

How do rocks remind us of God's strength?

How can salt change the taste of food?

We could say that the world has 'good flavour' and 'bad flavour'. What does this mean?

How can Christians help the world to have 'good flavour'?

What would happen if a Christian stopped following Jesus?

Outcomes

Students will

Knowledge

- Classify various kinds of rocks
- Understand ways in which rocks were/are formed
- Understand the problems with dating methods carried out by scientists who believe in evolution
- Identify rocks in the local environment
- Understand the Biblical symbol of salt as sign of purity.
- Understand that through surrendering our lives to Christ we can be changed to become more like Him.
- Observe and describe the formation of crystals.
- Understand the uses for salt
- Understand the way in which crystals develop into gemstones.
- Understand that metals are minerals and found in rocks
- Identify different metals
- Make a study of fossils and identify different kinds of dinosaurs

Skills

- Collect and classify rocks according to qualities and formation processes.
- Measure, weigh and test rocks for hardness.
- Investigate salt through dissolving, preserving and evaporating experiments.

Values

- Develop a desire to live pure lives as Jesus would want them to live.
- Trust in God as our rock.
- Develop a desire to share God's love, and be salt and light to those around them.
- Believe God's word.

Activities

ROCKS

- Make a class collection of rocks. Classify according to colour and shapes, e.g. rounded or sharp edges.
- Identify igneous, sedimentary and conglomerate rocks.
- Explain how these were formed.
- Discuss the problems with dating methods and dates given for the age of rocks by geologists who believe in evolution. Decide how old the oldest rock in the world could be according to the Bible.
- Identify and classify rocks according to the following three groups:
 1. granite, basalt, scoria, quartz, (formed by cooling of molten material)
 2. sandstone, mudstone, conglomerate, coal, limestone (formed by sedimentary deposition).
 3. marble, quartzite, slate (formed by effects of heat and pressure on previously existing rock).
- Classify rocks according to size, shape, weight, density, colour, texture, layer formation.
- Record weights and sizes of rocks.
- Test rocks for hardness / softness / brittleness using a hammer.
- Try writing with rocks on hard surfaces.
- Compare freshly broken surfaces with weather-worn surfaces.
- Visit a road cutting if possible, or an area where rock layers can be seen.
- Demonstrate some of the principles of rock formation by making toffee, firing clay, allowing layers of mud to dry out, throwing pebbles into a cement-sand-water mixture.
- Test for limestone in rocks by pouring on lemon juice, vinegar or other diluted acid. Limestone rocks will effervesce or bubble in the presence of acid.
- Identify rocks used in local buildings or monuments.
- Identify man-made rocks including bricks, tiles and concrete.
- Make some cement using 4 cups of sand, 4 cups of water and some Epsom salts. Mix sand and water together with Epsom salts and dump it in a hole made in a bucket of dirt. Pat it down and wait 2 days.

CRYSTALS

- Use a microscope and hand lens to examine table salt.
- Describe and draw the shape of the crystals. Are they all regular?
- Grow crystals: Take a glass jar, salt, sugar or washing soda, a long piece of thread and a paper clip. Fill jar with very hot water from the hot tap. Stir in lots of washing soda. Keep stirring until no more will dissolve in the water. Tie a paper clip on to the end of a piece of thread. Tie the other end around a pencil. Drop paper clip into the jar. Wind up the thread until the paper clip is suspended in the mixture. Leave in a place where it will not be moved. After a few days crystals will form. They will grow along the thread. To make coloured crystals, add food colouring.
- Using a magnifying glass, study rocks such as quartz, and observe crystal formations.
- Evaporate a volume of seawater and measure the mass of salt remaining.
- Explain the difference between rock salt and sea salt.
- Research the formation of stalagmites and stalactites in limestone caves.

GEMSTONES

- Draw and label gemstones.
- Describe how gemstones are cut to reflect light.
- Study the precious minerals that will form the Holy City, (Revelation 21).

Assessment

What have I learned from studying geology...

- about rocks, crystals and gemstones? about fossils?
- about God?
- about the Bible?
- about the age of the Earth?
- about doing what God wants me to do?

Learning Connections

Social Studies:

- Observe uses of rock as a building material.

Health:

- Investigate the salt content of processed foods.
- List the uses for salt - as a preservative; as an antiseptic; as a cleansing agent.

Biography: Mary Jones and her Bible

Values education Year 4

God is Truth

Commitment to truth

Commitment is...

- following through on what you say you will do
- finishing something you start
- being firm about what you believe
- being loyal to a person or a belief
- no turning back

Activities and discussion

Discuss the following types of commitments that people make:

Playing in a sports team

Singing in a choir

Doing jobs at home

Looking after a pet

What would happen if you decided one day that you didn't feel like doing your part?

What commitments do you have? Make a list.

What does the Bible say about commitment?

Luke 9:62 Jesus replied, "No one who puts a hand to the plow and looks back is fit for service in the kingdom of God."

Practical Science Year 4

Geology: Rocks and crystals

Grow Crystals (1)

You will need:

A glass jar

Sugar or washing soda

A long piece of thread

A paper clip

1. Fill jar with very hot water from the hot tap.
2. Stir in lots of washing soda or sugar
3. Keep stirring until no more will dissolve in the water.
4. Tie a paper clip on to the end of a piece of thread.
5. Tie the other end around a pencil.
6. Drop paper clip into the jar. Wind up the thread until the paper clip is suspended in the mixture.
7. Leave in a place where it will not be moved. After a few days crystals will form. They will grow along the thread. To make coloured crystals, add food colouring.

Art Year 4

God is Truth

Topic: Geology – rocks, fossils, dinosaurs

Biblical connection: The truth about the landforms, rocks and fossils of the earth is found in the account of the Great Flood, when there was upheaval of the earth's surface and volcanic eruptions from the deep. This happened about 4,000 years ago.

Bible art as a wall display

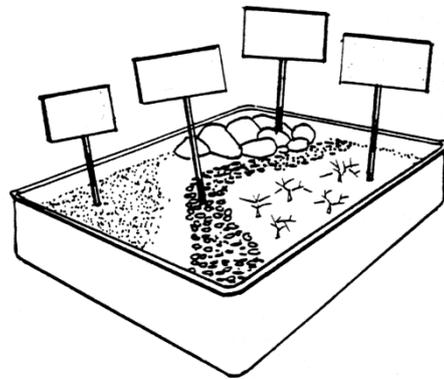
The House on the rock

Caption: Build your life on the Truth

Proverbs 30:5 Every word of God is flawless

Modelling

Make models of the house on the rock and the Sower and the seed.



Make models of rocks from paper mache or dough.

Make a sand collage with different coloured sands.

Make dinosaur footprints in a lump of dough.

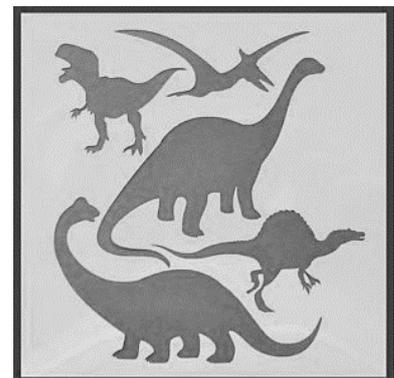
Painting

Paint rocks in landscape scenes using visual texture and graduation of colour.

Printing

Make stencil prints of fossils.

Example: students draw and cut out dinosaur shapes. They use these as stencils by applying paint over the cut-out. This works well with a roller.



Other ideas:

- Make a wall mural of the Holy City according to the Biblical description in Revelation 21. Use sequins and glitter to indicate the precious gemstones and metals. Include the tree of life and river of life.
- Make rock creatures by gluing attachments to a stone.
- Construct dinosaur models from recycled boxes

God is Lord and King Teacher's Topic Guide Year 4

Topic: Christmas

Duration: 3 weeks

Spiritual Awareness

At Christmas we celebrate Jesus who God sent into the world to save us. Through His birth and death, we have eternal life and peace with God. He is our redeemer.

Our response to 'God is Lord and King'

Because God is Lord and King I will...

Ask Jesus to forgive me for my sin

Invite Him to live in my life

Make Jesus Lord of my life

Live with Him forever

Thank Him for what He did on the cross

Thank Him that I am His child

Tell others that they can have eternal life

Bible references:

Bible stories and passages

Matthew 1:18-25; Luke 2:1-40 – The Birth of Jesus

Matthew 2:1-12 – The Visit of the Magi

Luke 2: 8-20 – The shepherds and the angels

Matthew 1 – Descendants of David through Jesus Christ

Numbers 24:17 – Star of Jacob, Star of David

Memory verses

Luke 2:11 – For unto you is born this day, in the city of David, the Saviour, who is Christ the Lord.

Matthew 1:21 – “Mary will give birth to a son, and you are to give Him the name Jesus, because He will save His people from their sins.”

Isaiah 9:6 – A child is born to us! A Son is given to us! And He will be our ruler. He will be called “Wonderful”, “Counselor”, “Mighty God”, “Eternal Father”, “Prince of Peace”.

Isaiah 26:3 You, Lord, give perfect peace to those who keep their purpose firm and put their trust in you.

Art Year 4

God is Lord and King

Topic: Christmas

Biblical connection: God sent His son, Jesus into the world to be Lord and King in the lives of people.

Bible art as a wall display: The Christmas story

Make Christmas cards

Examples:

