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
Psalm 104:5-18 – God's dealing with water during and after the Great Flood.
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 and don't feel pressured to own lots of material things that we don't really need.

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 it ……

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
Surface tension: make a paper clip float

http://www.sciencebob.com/experiments/paperclip.php

What you will need

- clean dry paper clips
- tissue paper
- a bowl of water
- pencil with eraser (rubber) on the end

What to do

1. Fill the bowl with water
2. Try to make the paper clip float...(don't worry – it doesn't work!)
3. Take a piece of tissue paper about 40 cm x 40 cm.
4. GENTLY drop the tissue flat onto the surface of the water
5. GENTLY place a dry paper clip flat onto the tissue (try not to touch the water or the tissue)
6. Use the eraser end of the pencil to carefully poke the tissue (not the paper clip) until the tissue sinks. With some luck, the tissue will sink and leave the paper clip floating!

How does it work?

How is this possible? It is possible because of SURFACE TENSION. Basically, it means that there is a sort of skin on the surface of water where the water molecules hold on tight together. If the conditions are right, they can hold tight enough to support your paper clip. The paperclip is not truly floating, it is being held up by the surface tension. Many insects, such as water striders, use this "skin" to walk across the surface of a stream.

Make it an experiment

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. How many paperclips can the surface tension hold?

2. Does the shape of the paperclip affect its floating ability?

3. What liquids have the strongest surface tension?

4. Can the surface tension of water be made stronger? (try sprinkling baby powder on the surface)

Practical Science 2: 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 in *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 3: 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 4: 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 5: 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 6: 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 of 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

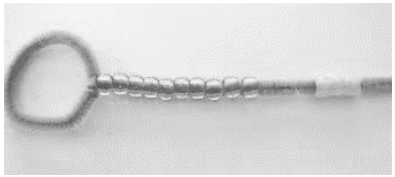
Instructions for bubble prints:

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.



Thinking Skills

Year 4 Provider

Water cycle 1 List 5 uses for water.	**Water cycle 2** Name 5 things that **a river** and **a car tyre** have in common.
Water cycle 3 Try to justify this statement: **"Children should be banned from swimming in rivers".**	**Water cycle 4** List 10 things that should NEVER be placed in water.
Water cycle 5 The answer is **"The water cycle".** Give 5 questions.	**Water cycle 6** Draw a water tank. Now redesign it by using the following steps: B – igger I – nstead of N – onsense G – et rid of O – ther uses

Water cycle 7 You are on a desert island and need to find drinking water. Work out three ways of getting water.	**Water cycle 8** **Find 5 uses for a plastic water bottle.**
Water cycle 9 You have to go away from home during the dry season. Work out 3 ways you could keep your plants watered while you are away.	**Water cycle 10** You are in a boat on a river, and your boat develops a leak. How can you solve the problem?
Water cycle 11 You have gone on a mission trip to Africa. the people in the village only have dirty water to drink. How can you help them?	**Water cycle 12** A student does not like to drink water. This student only drinks juice or fizzy drinks. What health advice would you give them?