maitland
city council

Water: Our Life

A RESOURCE KIT FOR THE YOUNGER MEMBERS OF OUR COMMUNITY AND THEIR CARERS

Produced by Maitland City Council with financial support from Hunter Water

Acknowledgements:

This kit was developed by Maitland City Council with financial support through Hunter Water's Sustainability Grants Program. Maitland City Council and Hunter Water are committed to ensuring that water resources are used in a sustainable manner and that wherever possible water pollution is prevented. Both organisations see that they have important roles to play in engaging with and providing the community with educational information on water management issues.

Disclaimer:

This kit has been published to increase awareness of water management issues. No warranty or guarantee, whether expressed or implied is made with respect to the data reported or the information provided in the document. All reasonable steps have been taken to ensure that the information is accurate at the time of publication.

HOW TO USE THE KIT

It is in the early years of a child's life that they develop an appreciation and responsibility for the things around them. Through this kit Maitland City Council aims to provide children and their carers with information and an appreciation of water management for now and the future.

This kit has been developed with reference to the National Early Years Learning Framework for Early Childhood Educators, 2012 and the National Quality Standard for Early Childhood, 2013.

The National Early Years Learning Framework was developed to assist educators to provide young children with opportunities to maximise their potential and develop a foundation for future success in learning.

The vision of the Framework is that all children have the best start in life to create a better future for themselves and for the nation. Fundamental to the Framework is a view of children's lives as characterised by belonging, being and becoming.

As highlighted in the Framework children's learning is dynamic, complex and holistic. Physical, social, emotional, personal, spiritual, creative, cognitive and linguistic aspects of learning are all intricately interwoven and interrelated.

The Framework encompasses five learning outcomes:

1. **Children have a strong sense of identity**
2. **Children are connected with and contribute to their world**
3. **Children have a strong sense of wellbeing**
4. **Children are confident and involved learners**
5. **Children are effective communicators.**

Learning environments are welcoming spaces when they reflect and enrich the lives and identities of children and families and respond to their interests and needs. Environments that support learning are vibrant and flexible spaces that cater for different learning capacities and styles and invite children and families to contribute ideas, interests and questions.

The Framework recognises that play can expand children's thinking and enhance their desire to know and to learn. Play provides a supportive environment where children can ask questions, solve problems and engage in critical thinking. Play spaces in natural environments include plants, rocks, mud, water and other elements of nature. These spaces invite open ended interactions, spontaneity, exploration, discovery and connection to nature. They foster an appreciation of the natural environment, develop environmental awareness and provide a platform for ongoing environmental education. Materials enhance learning when they reflect what is natural and familiar and also introduce novelty to provoke interest and increase abstract thinking. Environments and resources can also highlight our responsibilities for a sustainable future and promote children's understanding about their responsibilities to care for the environment.

A key of the Framework is the recognition that children construct their own understandings and contribute to others learning. Viewing children as active participants and decision makers opens up possibilities for educators.

The National Quality Standard for Early Childhood sets a national benchmark for the quality of education and care services provided.

The Standard aims to see demonstrated educational programs and practices that stimulate, engage and enhance children's learning and development.

Through the development of this Kit, links with the following quality areas and elements have been made:

QUALITY AREA	QUALITY ELEMENT
QA1: Educational program and practice	1.1.1: Curriculum decision making contributes to each child's learning and development outcomes in relation to their identity, connection with community, wellbeing, confidence as learners and effectiveness as communicators.
	1.1.6: Each child's agency is promoted, enabling them to make choices and decisions and influence events and their world.
	1.2.2: Educator's respond to children's ideas and play and use intentional teaching to scaffold and extend each child's learning.
QA2: Children's health and safety	2.2.2: Physical activity is promoted through planned and spontaneous experiences and is appropriate for each child.
QA3: Physical Environment	3.2.1: The environment is inclusive, promotes competence, independent exploration and learning through play
	3.3.1: Sustainable practices are embedded in service operations
	3.3.2: Children are supported to become environmentally responsible and show respect for the environment.
QA5: Relationships with children	5.2.1: Each child is supported to work with, learn from and help others through collaborative learning opportunities.

WHO IS THE KIT DESIGNED FOR?

This kit has been developed for use primarily in pre-schools, long day cares, and family day cares, but could also be used for infant's students. The kit aims to provide carers/teachers with an aid to explore the issues of water pollution, water use and water conservation in a fun and interactive way suitable for younger children. The activities provided are all able to be easily incorporated into daily activities.

The kit is made up of six sections:

Part One: Information on why we need water, where our water comes from and how it gets to our tap, how we use water and what we can do to prevent water pollution and reduce everyday use

Part Two: Series of activities to engage children in thinking about water use and water pollution

Part Three: Information on conducting a Water Audit and developing a Water Action Plan

Part Four: List of books the centre may like to read to the children relating to water

Part Five: Snippets for use in your Centres newsletter

Appendix One: Templates

The kit can be used as a package or individual components of the kit can be pulled out and used on their own in a formal teaching situation or through informal small groups where the reading of one of the books could occur. The kit can also be used to educate the teachers in the centre themselves through staff meetings and parents and families of the centre through providing information from the kit in the centres newsletters.

1. INFORMATION ON WATER

WHY DO WE NEED WATER

Everywhere you look, and almost everything we do requires some level of water use. We ourselves could not survive without a daily intake of water.

The human body is made up of between 50 and 75 percent water and would only survive a couple of days if water was not available. Water removes waste from our body, carries nutrients around our body, helps us digest our food, to sweat, and helps control our body temperature. Water also plays an important part in protecting body tissue, keeping muscles and bones flexible and lubricating our eyes.

We require water for almost every aspect of our lives with the following list providing just a couple of examples:

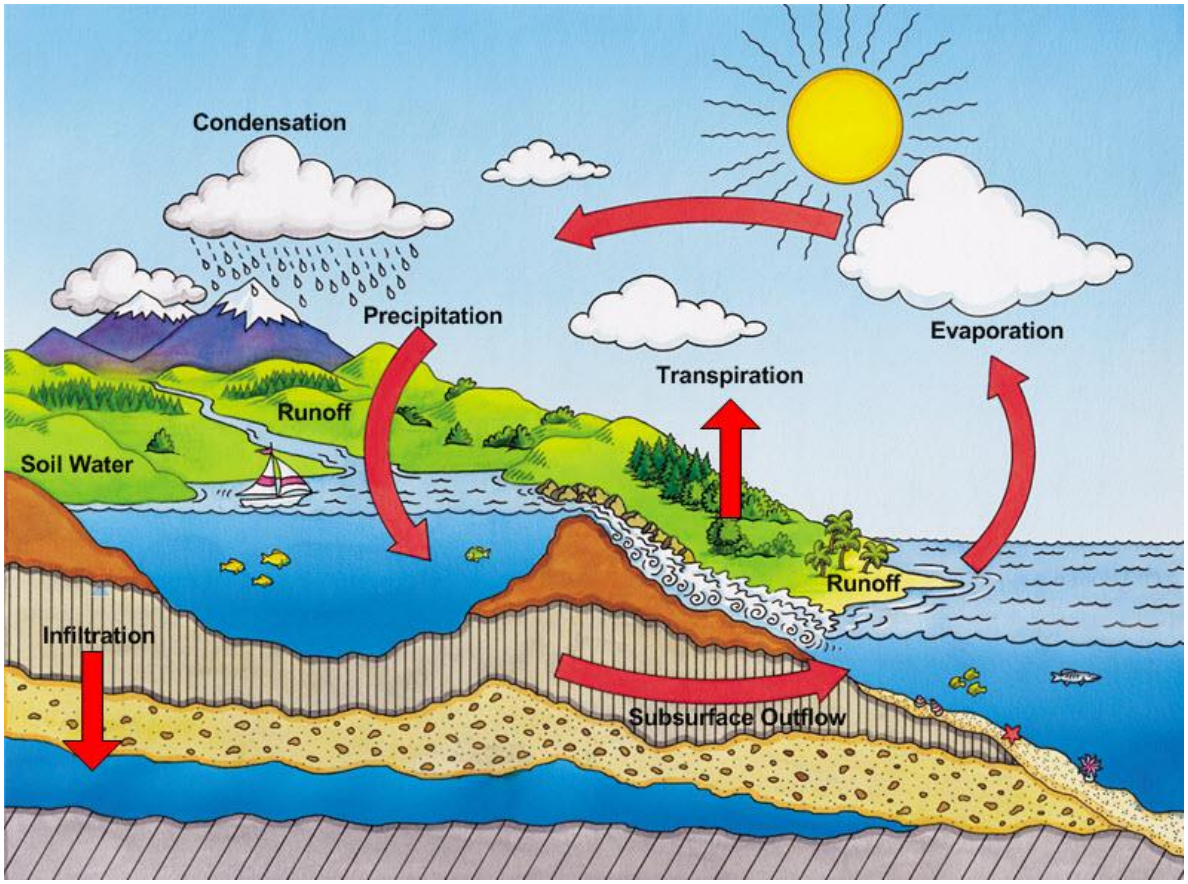
- Growing our food
- Cooking our food
- Drinking
- Transport of items on our roads
- Manufacture of items both large and small- from the construction of metals such as steel, to the paper we use to write on each day
- Provide us with Electricity
- Making our Clothes
- Watering our Playing Fields and Gardens
- For washing our clothes, dishes and ourselves
- For swimming and boating in

THE WATER CYCLE

More than two thirds of the earth's surface is water, but only a small amount of this water is freshwater which is usable for our daily needs. Most of the earth's water is saltwater found in the ocean. Much of the freshwater is locked in polar ice caps, glaciers, the atmosphere and soil.

The Water Cycle is so named as the water makes a journey from the ocean into the sky and back to the ocean again.

Figure One: The Water Cycle



Source: www.hairstyle-pictures.feedio.net

The Maitland water supply journey begins in the hills surrounding the Barrington Tops. Rainwater flows into the may creeks and streams and also soaks into the ground.

Evaporation occurs when the sun heats up the water in our rivers, creeks and oceans. Water from the water bodies rise into the sky in the form of water vapour or steam which is almost invisible.

Transpiration occurs when water from plants rises into the sky in the form of water vapour which is almost invisible.

Condensation occurs when there is too much water vapour in the sky and it turns into tiny droplets of water and appears as fog, mist or clouds.

Precipitation occurs when water vapour droplets become too heavy and fall from the sky as rain, snow or hail. This water flows into the creeks and rivers and then into the ocean. Water can also soak into the ground (this is known as infiltration) and travel below ground back to the ocean.

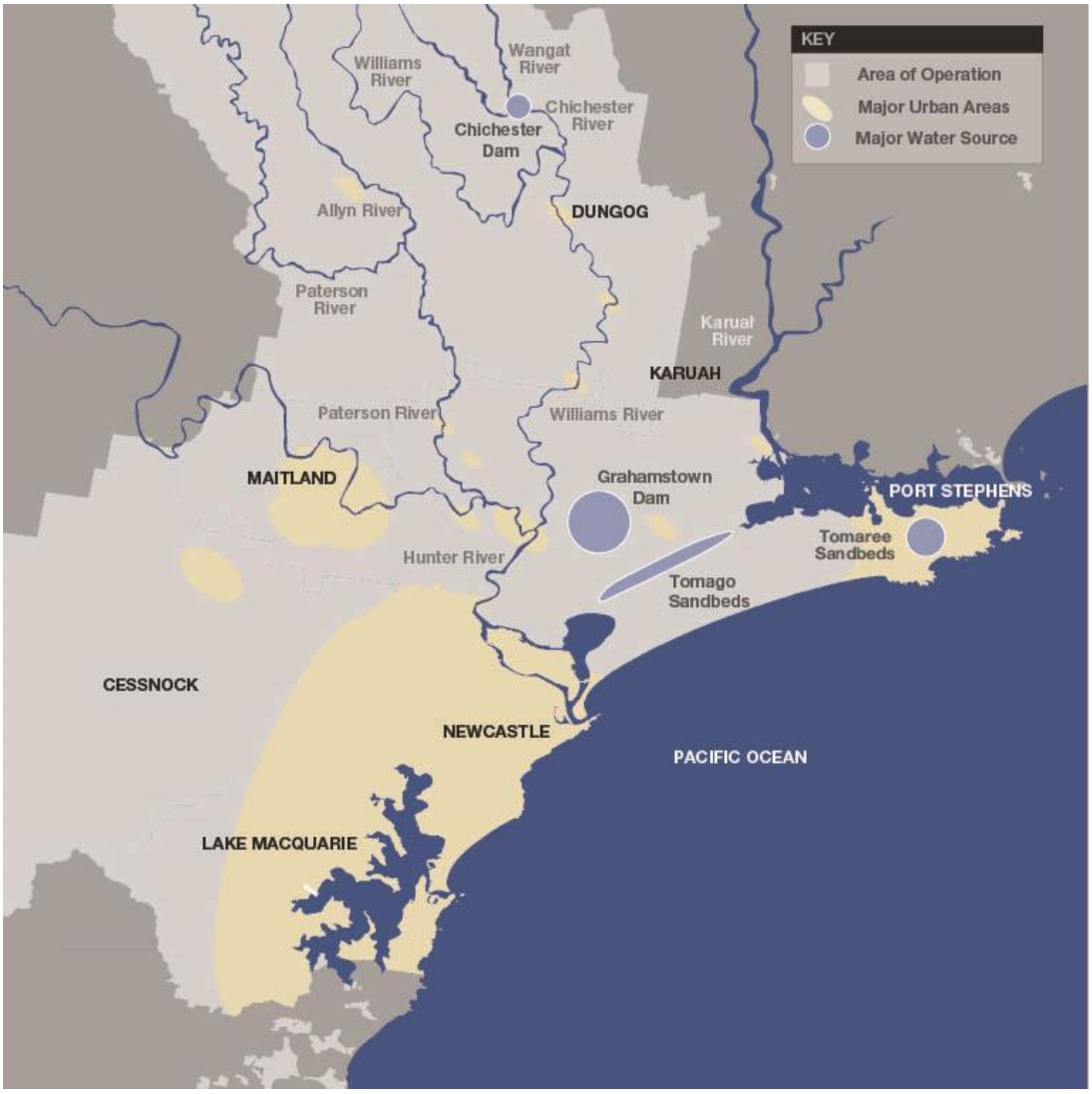
READER INCLUDED IN THE KIT WHICH IS RELEVANT TO THIS SECTION: THE DROP GOES PLOP

WHERE DOES OUR WATER SUPPLY COME FROM

Hunter Water is responsible for supplying water and wastewater services to over half a million people in the Lower Hunter.

Hunter Water has three main sources of water: Grahamstown Dam, Chichester Dam and Tomago Sandbeds, and one minor source: Tomaree Sandbeds.

Figure Two: Map of Hunter Water's Major Infrastructure



Source: Hunter Water

Grahamstown Dam is currently the largest storage, with an available storage of 190,000 megalitres. It is located north of Raymond Terrace. The dam has been in place since the late 1950's, having undergone a number of upgrades in its time. Half of the stored water in the dam is pumped from the Williams River with the remainder being runoff from the local water catchment. Grahamstown Dam supplies treated water to Newcastle, Lake Macquarie and Port Stephens, accounting for about 46% of the annual Hunter Water supply.

Chichester Dam is a concrete gravity fed dam constructed in the 1920s in the foothills of Barrington Tops on the Chichester River. The dam has a catchment area of about 200 square kilometres and an available storage capacity of 20,300 megalitres. Treated water from Chichester Dam is supplied to areas west of Maitland, with the balance to parts of Newcastle. Chichester typically supplies 38% of the total annual water supply.

Tomago Sandbeds are a groundwater resource about 100 square kilometres in area and about 18 meters deep. The sandbeds are located behind Stockton Bight and stretch from the Hunter River in the south to Birubi Point in the north. Water from the Sandbeds is extracted from bores and wells, with this water supplying 13% of Hunter Waters water resources.

Tomaree Sandbeds are a groundwater resource about 15 square kilometres in area and in places up to 60m deep. They are located between Nelson Bay, Shoal Bay, Fingal Bay and One Mile Beach, within Tomaree National Park. Treated water is supplied to the Port Stephens area.

All water from these sources undergoes treatment to make it safe and healthy to drink. Water is filtered to remove impurities and chlorine is added to kill any water borne organisms. Fluoride is also added to protect our teeth. To make sure the water is always healthy to drink, water samples are regularly tested by scientists.

WHERE DOES OUR WASTEWATER GO?

Once water is used in our daily lives it goes down the drain in our homes, schools and workplaces and becomes known as wastewater. Wastewater, also known as sewage is mostly water, with additional substances such as soaps and detergents, chemicals and fertilisers, leftover food scraps, grease and oils and organic material. Wastewater must be carefully treated to remove the unwanted wastes before it is returned to the environment. This is done at one of 18 wastewater treatment plants operated by Hunter Water.

At the wastewater treatment plant water, and its contents, are first screened to remove large objects such as paper and plastics, it then passes through the grit trap to remove particles such as sand and soil. The water is then treated to remove germs before being safely returned to waterways or reused.

NOTE: SECTIONS OF THIS DOCUMENT CONTAIN INFORMATION FROM HUNTER WATER'S WEBSITE AND ITS ASSOCIATED RESOURCES. FOR FURTHER INFORMATION ON WATER USE AND MANAGEMENT IN THE HUNTER VISIT HUNTER WATER'S WEBSITE AT HUNTERWATER.COM.AU

HOW MUCH WATER DO WE USE AND HOW CAN I REDUCE MY WATER USAGE?

Each person in the Hunter uses about 200 litres of water everyday for washing, cooking and drinking. Fact Sheet 1 which follows breaks down our usage by everyday items in the home/at care.

FACT SHEET ONE: WATER USE IN YOUR HOME/CENTRE How much water do our water appliances use:	
Leaking Tap	45L per day
Dishwashing by hand	12 to 15L per wash
Dishwashers	20 to 60L per load
Washing machine front loader	23L per kg dry clothing
Washing machine top loader	31L per kg dry clothing
Standard Shower Head	20L per minute
Water Efficient Showerhead	10L per minute
Hand basin	3L per minute
Tap running while cleaning your teeth	5L
Bath half full	60L
Bath full	120L
Single flush toilet	12L per flush
Dual flush toilet – Half fliush	4.5L
Dual flush toilet – Full fliush	9L
Hand watering the garden	600 to 900L per hour
Washing the Car	150 to 300L of water
Sprinkler	Up to 1500L per hour

In order to reduce this usage follow some of the simple steps below in care/at school:

- Report all dripping taps, hoses and pipes to carers/teacher (or your parents if at home)
- Use the half flush button on the toilet when able
- When watering the gardens water the roots of plants not the leaves
- Only use the washing machine and dishwasher when they have full loads

- Plug the sink when washing fruit and vegetables
- Use brooms and rakes to clean paths rather than a running hose
- Choose native plants over exotic plants as they will require less watering
- Water plants longer less often. This will encourage plants to grow deeper roots to search out moisture in the soil.
- Use mulch on the garden as it will reduce evaporation by up to 70%
- Install a rainwater tank to water gardens. Also consider plumbing the tank to flush toilets and for use in the centres laundry.
- Use tap timers to ensure you do not forget to turn off a sprinkler or irrigation system when watering the garden
- Water gardens early in the morning and late in the evening. Watering the garden by hand will use 600-900L of water every hour while using a sprinkler will use up to 1500L of water every hour.
- Install AAA-rated water appliances when they need to be upgraded
- Never undertake water play with a running hose. Instead use buckets filled with water or a water trough.

In addition to the things we can all do whilst in care, we can also do the following at home:

- Turn the tap off when brushing your teeth
- Take shorter showers and shallow baths
- Install water efficient shower heads
- Use a bucket of water rather than a running hose to wash your car and wash your car on the lawn.

How to Prevent Water Pollution?

Following is a list of everyday actions we can all implement to prevent water being impacted upon by our everyday activities:

- Pick up after your pets to ensure their droppings do not end up in the stormwater system
- Ensure leaves and grass clippings are not allowed to enter the stormwater system by sweeping them up
- Never use fertilisers and pesticides on the garden when rain is predicted and only use them in the recommended quantities.
- Never allow oils from motor vehicles to travel into the stormwater system
- Never wash a motor vehicle or boat where there is the potential for the water to travel into the stormwater system
- Never tip paint or allow paint containing water to travel into the stormwater drain
- Ensure litter is disposed of appropriately so that it is not carried with stormwater into the stormwater system
- Provide off-stream watering for stock

2. EXPERIMENTS AND ACTIVITIES

ACTIVITY ONE: HOW DO WE USE WATER

This activity will provide the children with the opportunity to think about the many ways that we use water in our daily lives.

WHAT YOU WILL NEED

- A copy of Worksheet One
- Old Magazines/Pamphlets
- Scissors
- Glue

TO BEGIN

To begin sit the children in front of you and explain to them that we use water for many different things, whether it be whilst in care, outside when we are playing, or inside our homes. Then give each child a copy of an old magazine or pamphlet and ask them to have a look through it to find a picture of people using water or something that requires water to work. Depending on the age of the children ask the children to cut out the picture they have found. Using Worksheet One ask each child to bring the picture they have found to the front of the room and make a collage of the way we use water at care, inside different rooms of our house, and outside of our homes by sticking the pictures under the various locations we use water.

Note: If you do not have and cannot access magazines or brochures that the children can cut up, or only have a short time to conduct this activity, use Worksheet 1 and ask each child to name a way water is used and simply write the answers under each heading.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA3: PHYSICAL ENVIRONMENT, AND QA5: RELATIONSHIPS WITH CHILDREN .

WORKSHEET ONE: HOW DO WE USE WATER

IN THE KITCHEN

IN THE BATHROOM

OUTSIDE

WHILST IN CARE

IN THE LAUNDRY

ACTIVITY TWO: WATER USE AROUND THE HOME

This activity will provide the children with the opportunity to use visual tools of the different rooms in their house to identify how water is used

WHAT YOU WILL NEED

- Activity Pack One: Contains pictures of a kitchen, laundry, bathroom and garden as well as small information cards that relate to water use in each of the rooms.

TO BEGIN

To begin hang each of the room pictures on a notice board/wall and have the children sit in front of them. Hand each of the children an information card.

One at a time have each child come up to the front and read out their information card with the help of the carer/teacher. The information card will either have a green or red water drop next to it. Green water drops relate to a water saving action, while red water drops represent the wastage of water and require the children to think about an action they could implement to save water. Once a card has been read have the children attach the information card to one of the pictures of a room in their home to which the card relates.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA3: PHYSICAL ENVIRONMENT, AND QA5: RELATIONSHIPS WITH CHILDREN.

ACTIVITY THREE: HOW MUCH WATER IS BEING WASTED

This activity will provide you with the opportunity to show the children how much water can be wasted through a dripping tap or by leaving a tap running when it should be turned off.

WHAT YOU WILL NEED

- A copy of Worksheet Two
- A pen/pencil
- A map of the centre/school with each tap location highlighted and given a unique identification number
- A container/ bucket with readable markings
- A stop-watch

TO BEGIN

Begin by explaining to the children what you will do:

1. **Using the map of the centre/school we will assess each tap to ensure that it is not left running and does not have a drip**
2. **At each tap indicate whether the tap is running (R), dripping (D) or turned off (O) on Worksheet One.**
3. **Where the tap is running or dripping use the bucket and stopwatch provided in this kit to record how much water is collected over a set period. This can then be multiplied to indicate how much water would have gone down the drain and been wasted in an hour, in a day or even over a week.**

Example: tap dripping with 230mL recorded in the bucket for a 15 minute period. When multiplied out this would be 920mL in an hour and 22080ml (22 litres) in a day.

Where a tap is identified as dripping a work order should be placed to have it repaired. Where it is found that a tap has been left running it may be necessary for education of the children to remind them to turn off taps or even implement a water monitor to check taps at certain times of the day to ensure no taps are left running.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA3: PHYSICAL ENVIRONMENT, AND QA5: RELATIONSHIPS WITH CHILDREN.

WORKSHEET TWO: HOW MUCH WATER IS BEING WASTED

Date and Time	Tap ID number	Whether Running (R), Dripping (D) or Turned Off (O)	Water collected/per time interval	Equates to water wasted/per hour	Equates to water wasted/per day

ACTIVITY FOUR: ARE YOUR ACTIONS IMPACTING ON OUR WATER QUALITY

This activity will provide you with the opportunity to demonstrate to the children what impact everyday activities have the potential to have on local water quality.

WHAT YOU WILL NEED

- A large clear fish tank or plastic container that will allow the children to see what is happening to the water inside
- ¼ cup of cooking oil
- 1 cup of soil
- A handful of various litter. To make it relevant for the children consider items such as chip packets, lolly wrappers, drink bottles, popper containers, drink straws, plastic bags etc.
- A handful of leaves and/or grass clippings (this could be collected by the children from around the centres play areas
- A couple of squirts of washing up detergent or car wash detergent
- ¼ cup paint

TO BEGIN

Begin by reading the following summary of the activity to the children:

Today we are going to undertake an activity to look at what impact our actions can have on water in our local creeks and rivers. One at a time each of you will be asked to come up the front and place an item into the container. Each of these items represents an item that could cause water pollution. Water pollution occurs when items are washed down the drain and into our creeks or rivers.

As each child comes up the front ask them to pick an item and then explain to the children what the item represents

1. **Cooking Oil: represents oil that could leak onto our driveway or the road from our cars**
2. **Soil: represents the dirt that could wash from our gardens or ungrassed lawn or off our cars in heavy rain**
3. **Litter: represents items that we drop on the ground instead of putting them in the bin**
4. **Leaves: represents the leaves left in the gutter when they fall off our trees**
5. **Grass Clippings: represents the grass clippings left in the gutter when the lawn is mown or wiper snipped**
6. **Washing Up Detergent/Car Wash Detergent: Represents a car being washed on the driveway or on the road**
7. **Paint: represents someone pouring paint down the gutter**

As each child takes a turn placing their item into the container continually talk to the children about how the colour of the water is changing and how yucky the water now looks. Talk about how you would not like to have a picnic near the river that was this colour or could not swim in the ocean if it looked like this.

Once all items have been placed in the container you then have the opportunity to revisit each of them and look at what should have been done with the item to prevent the water pollution:

1. Oil from our car: take the car to the mechanic to ensure oil leaks are repaired. In the meantime park the vehicle on a grassed area or with a container under the leak so that the oil does not run directly into the stormwater system or have the potential to be washed into the stormwater system during rain
2. Dirt from our gardens and cars: ensure garden beds are mulched and have an edging to prevent soil being washed off them during period of rainfall. Ensure motor vehicles are washed on the grass to prevent dirt being washed into the gutter.
3. Litter: ensure rubbish is always placed into the nearest bin or taken with you if there is no bin in sight.
4. Leaves: rake or sweep leaves before they have the opportunity to be washed into the gutter and into a local creek or river
5. Grass clippings: rake or sweep up grass clippings after mowing and wiper snipping before they are washed down the drain
6. Car Wash Detergent: wash your car on the grass as this will ensure detergents, dirt, oils and greases can be captured before they reach the gutter and are washed into local creeks and rivers
7. Paint: never tip unwanted paint down the drain. Instead dispose of the paint through chemical recycling programs.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA2: CHILDREN'S HEALTH AND SAFETY, QA3: PHYSICAL ENVIRONMENT, QA5: RELATIONSHIPS WITH CHILDREN.

ACTIVITY FIVE: WHO IS USING WATER

This is a simple quick activity where by the children circle the activities shown that use water.

WHAT YOU WILL NEED

- Kit Reader: 'I am Water' by Jean Marzollo
- Copies of Worksheet Three
- Pencils

TO BEGIN

Ensure you have a pencil and worksheet for each child.

Read the book 'I Am Water' by Jean Marzollo. Then have the children use Worksheet Three to circle the many activities that use water.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, AND QA5: RELATIONSHIPS WITH CHILDREN.

WORKSHEET THREE:

Circle the activities that require water to undertake them

WORKSHEET THREE ANSWERS:

YES	NO
Someone washing their car	Someone reading a book
Pet fish	Someone using a computer
Someone driving a car/truck	Someone watching TV
Someone swimming	Someone riding a bike or skateboarding
Someone washing up	Someone playing with a ball
Someone eating	Someone going for a walk
A garden being watered	Someone playing with their toys
Person/animal having a drink	
A fire fighter putting out a fire	
A washing machine	
Someone brushing their teeth	
Someone having a bath	
Someone in a boat	
Someone Painting	

Please note, although we say water is not used directly in the undertaking of a number of these activities it is recommended that where any physical activity is carried out that water be available for hydration if required.

ACTIVITY SIX: WATER MATCH

A quick activity where the children match the pictures

What You Will Need

- Copies of Worksheet Four
- Pencils

To Begin

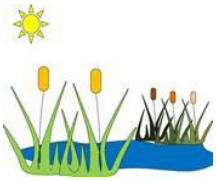
Ensure you have a worksheet and pencil for each child.

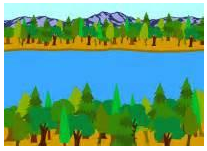
Ask the children to match the picture on the left with a picture on the right to indicate the two things that go together.

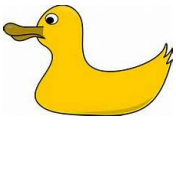
BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, AND QA5: RELATIONSHIPS WITH CHILDREN.

WORKSHEET FOUR:

Match the picture on the left with the picture on the right to indicate the things that go together.







ACTIVITY SEVEN: OUR WEATHER

Use simple pictures to create a summary of the weeks, fortnights or months weather

What You Will Need

- A3 laminated Our Weather Chart
- Laminated weather discs
- Blue-tac for discs

To Begin

This activity can be undertaken over a short or long term period. Sit the children down and introduce them to the Weather Chart. Explain what you will be doing in terms of placing a weather disc with either a sun, clouds or rain picture on the chart at a certain time of each day, and how long the activity will be undertaken for.

At the specified time each day ask a volunteer to go to the window/outside and assess the days weather. The volunteer then chooses the disc relevant to the days weather and places it on the weather chart.

Once the chart has been completed for the desired period, sit the children down and look at how many days of rain, cloud and sun have occurred over the specified period.

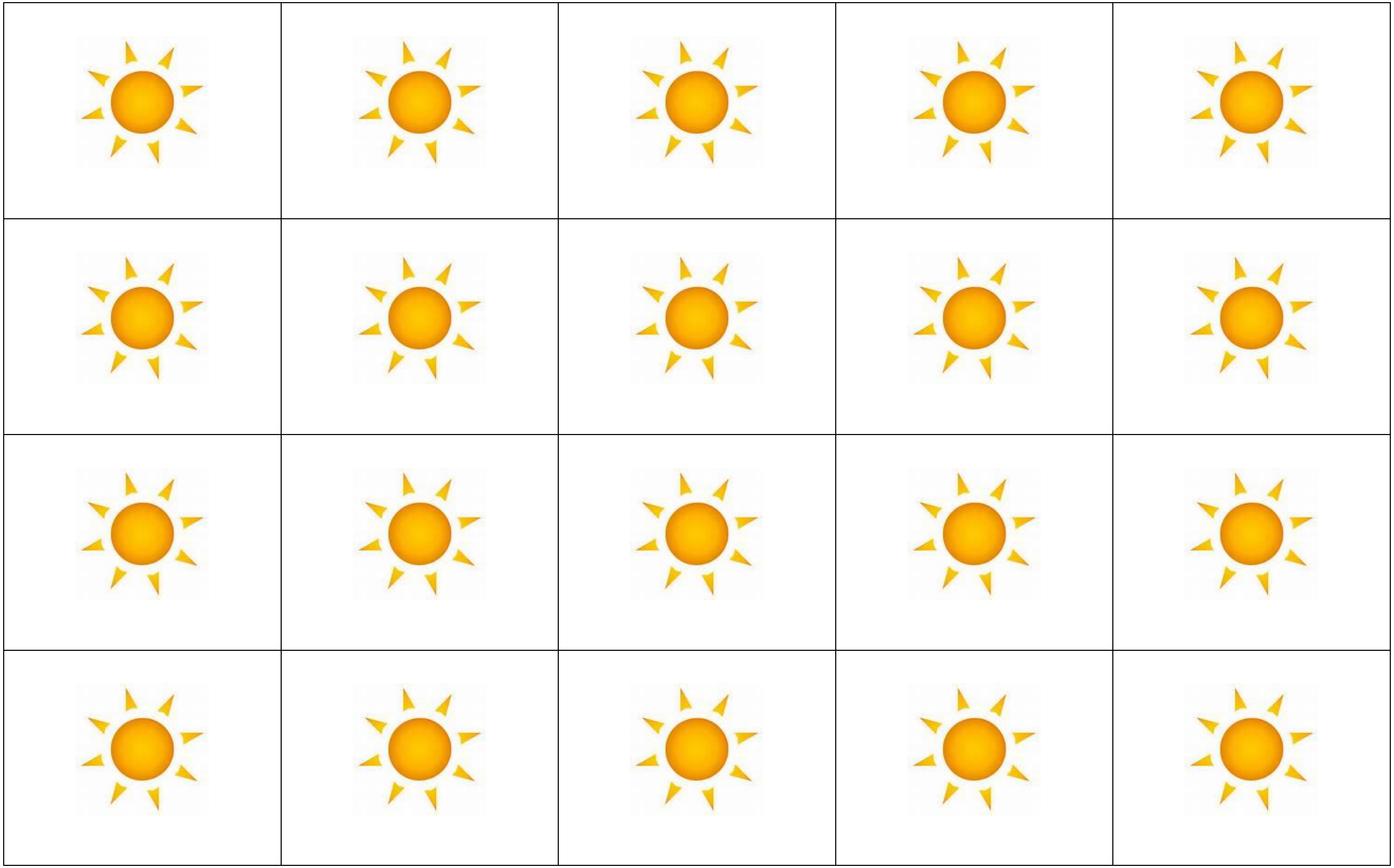
Note: To expand the activity you could talk about how we still need water even if we do not get rain and thus link the importance of water conservation to your discussions.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA3: PHYSICAL ENVIRONMENT AND QA5: RELATIONSHIPS WITH CHILDREN.

OUR WEATHER CHART

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

WEATHER CHART DISCS



ACTIVITY EIGHT: LET'S RHYME

Water Related Rhymes to Share with the Children in Your Care

What You Will Need

- A3 and A4 Laminated Copies of Words as Supplied in Kit

To Begin

Using the sheets supplied teach the children some of the many rhymes that include water as a theme.

Note: You might like to expand this activity by printing each of the rhymes and having the children colour in the pictures. A copy of each rhyme page for printing is provided on the following pages.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE

FIVE LITTLE SPECKLED FROGS

Five little speckled frogs,

Sitting on a hollow log,

Eating some most delicious bugs,

Yum, Yum

One frog jumped in the pool,

Where it was nice and cool,

Now there are four speckled frogs,

Glub, glub.

Four little speckled frogs,

Sitting on a hollow log,

Eating some most delicious bugs,

Yum, Yum

One frog jumped in the pool,

Where it was nice and cool,

Now there are three speckled frogs,

Glub, glub.

Three little speckled frogs,

Sitting on a hollow log,

Eating some most delicious bugs,

Yum, Yum

One frog jumped in the pool,

Where it was nice and cool,

Now there are two speckled frogs,

Glub, glub.

Two little speckled frogs,

Sitting on a hollow log,

Eating some most delicious bugs,

Yum, Yum

One frog jumped in the pool,

Where it was nice and cool,

To make this song a little more exciting why not make your own speckled frog finger puppets. Great designs can be found online.

Now there is one speckled frog,

Glub, glub.

One little speckled frog,

Sitting on a hollow log,

Eating some most delicious bugs,

Yum, Yum

One frog jumped in the pool,

Where it was nice and cool,

Now there are no speckled frogs,

Glub, glub.

RAIN IS FALLING DOWN

Rain is falling down,

Rain is falling down

Pitter, patter, pitter, patter.

Rain is falling down, splash!

I'M A LITTLE TEAPOT

I'm a little teapot short and stout,

Here is my handle, here is my spout,

When I get all steamed up hear me shout,

Tip me over and pour me out.

The Incy Wincy Spider

The incy wincy spider went up the water spout,

Down came the rain and washed the spider out.

Out came the sunshine and dried up all the rain,

So incy wincy spider climbed up the spout again.

THE INCY WINCY SPIDER

The incy wincy spider went up the water spout,

Down came the rain and washed the spider out.

Out came the sunshine and dried up all the rain,

So incy wincy spider climbed up the spout again.

JACK AND JILL

Jack and Jill went up the hill,

To fetch a pail of water.

Jack fell down,

And broke his crown;

And Jill came tumbling after.

Then up Jack got, and home did trot,

As fast as he could caper.

They put him to bed,

And plastered his head,

With vinegar and brown paper.

RAIN

Rain, rain, go away,

Come again some other day.

Little _____ wants to play.

RUB-A-DUB-DUB, THREE MEN IN A TUB

Rub-a-dub-dub, three men in a tub,

And who do you think they be?

The butcher, the baker, the candlestick maker,

Turn them out, one, two, three.

DRIP DROP

Drip Drop Drip Drop, the rain is falling down.

Drip Drop Drip Drop, splashing all around

Let's all put on our gum-boots, our raincoats and our hats

And jump in all the puddles with a splish splosh splash.

ACTIVITY NINE: WHERE DOES OUR WATER COME FROM

This activity will provide the students with the opportunity to follow a water drop from source to tap.

What You Will Need

- Activity Pack Two: Contains pictures of different points as water moves from the mountains, through storage and treatment, through our pipes and out of our taps.

To Begin

To begin spread the various pictures where all children can see them. Explain that the aim of this activity is to put the diagrams in the correct sequence so that the water drop travels from the hills of the Barrington Tops to the taps of our daycare centre or the taps in our home.

This activity will demonstrate pictorially where our water comes from in a manner the children will understanding and be able to relate to.

1. Rain on a hill
2. The flowing river
3. Evaporation from a creek
4. Transpiration from plants
5. Storage at Chichester Dam
6. Water Treatment at the Hunter Water Treatment Plant
7. Pipes to properties
8. Tap into your facility/house

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, AND QA5: RELATIONSHIPS WITH CHILDREN.

ACTIVITY TEN: CREATE YOUR OWN WATER CYCLE

This activity will provide the students with the opportunity to see the water cycle in action through a simple yet effective model that they can make themselves.

What You Will Need

- A clear large jar with tightly fitting lid
- Plants
- A bottle cap or small jar lid
- Potting Soil
- Sand
- Small rocks
- A small amount of water

To Begin

Collect all the components listed in the What You Will Need List and have the children sit around a central point where they can see components being added to the jar. Then follow the steps below:

1. Take the lid off the jar
2. Place a layer of small rocks in the bottom of the jar
3. Add a layer of sand to cover the rocks
4. Add a layer of potting soil to cover the sand and ensure it is to a depth to allow for the planting of plants. Steps two to four replicate the ground of the Earth with its various layers.
5. Plant a couple of small plants into the soil ensuring that they are firmly rooted and water them with a small amount of water.
6. Using the bottle cap or small jar lid, fill it with water and sit it on the soil next to the planted plants.
7. Replace the jars lid (which will represent the sky). Note, if you would prefer that the children can see what is happening on the jars lid use cling wrap and a tightly fitting rubber band instead of the lid.
8. Place the jar in a sunny position to observe the processes of evaporation, condensation and precipitation.

Note: Should your model become mouldy remove the lid to allow the excess moisture to evaporate and then replace the lid for the water cycle process to commence once again.

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA3: PHYSICAL ENVIRONMENT AND QA5: RELATIONSHIPS WITH CHILDREN.

ACTIVITY ELEVEN: COLOUR-IN PAGES

For when you want a quick or quiet activity, use these colour-in sheets to remind the children of what lives in our water and how we use our water.

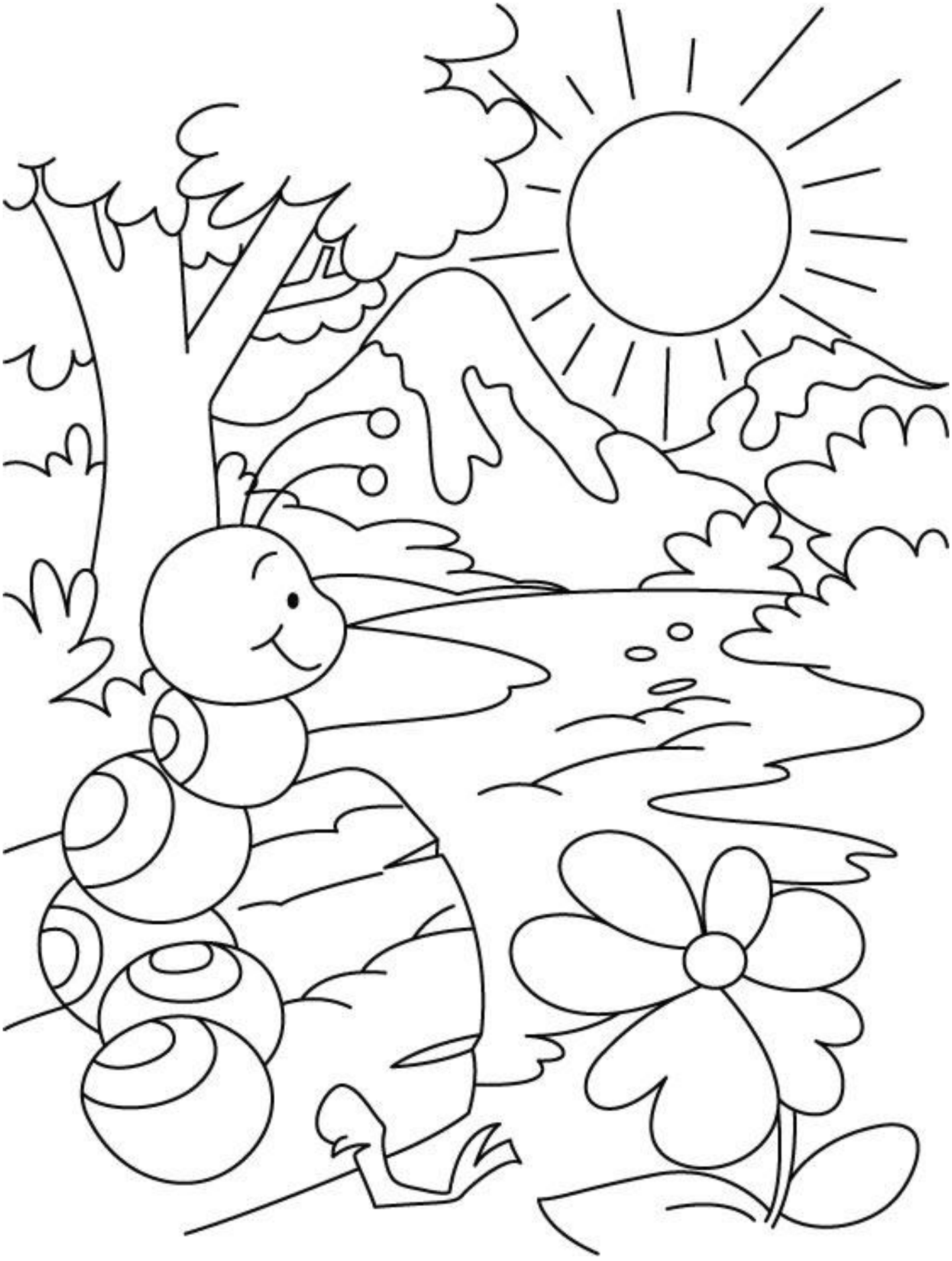
What You Will Need

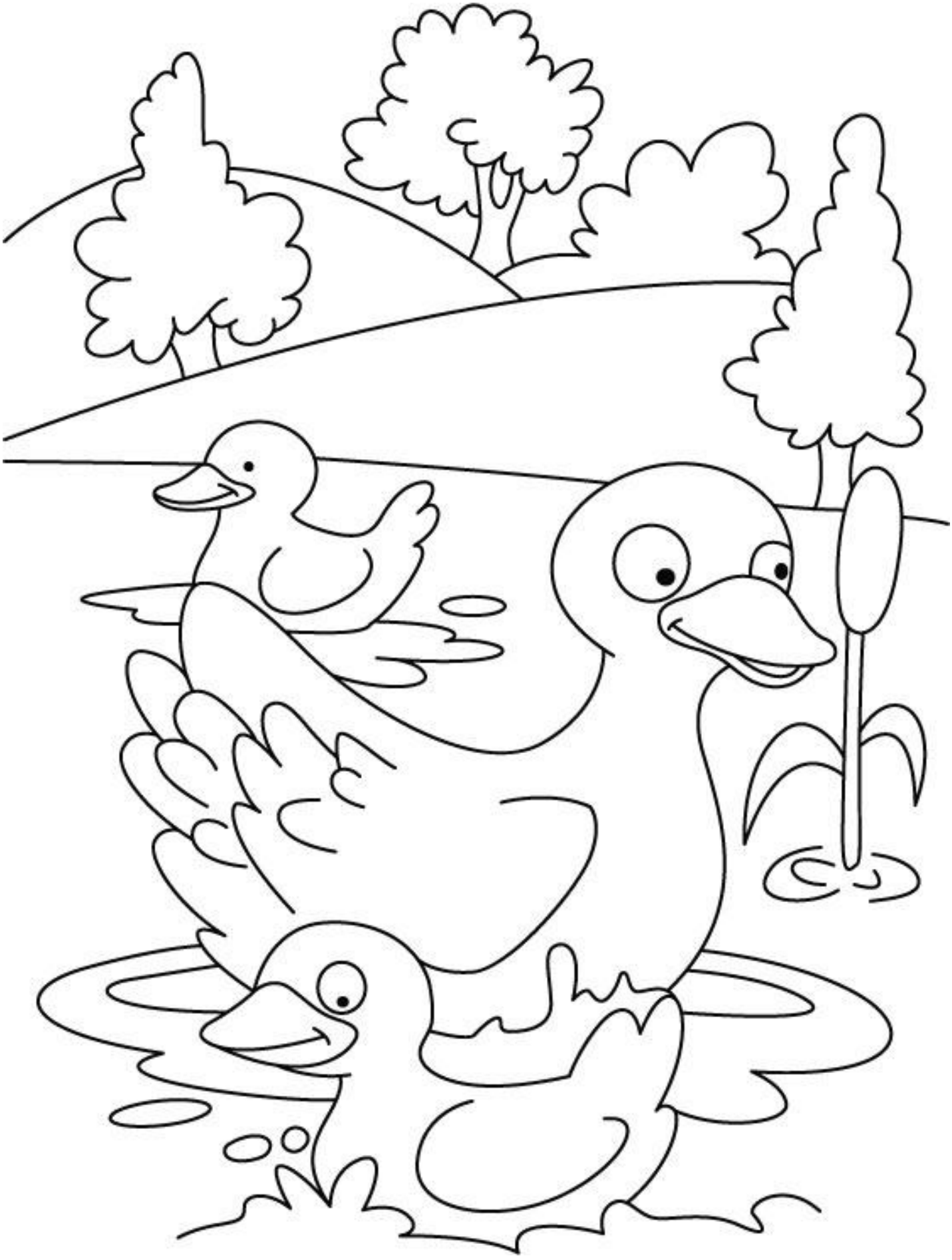
- Copies of Worksheet Five
- Coloured Pencils and Crayons

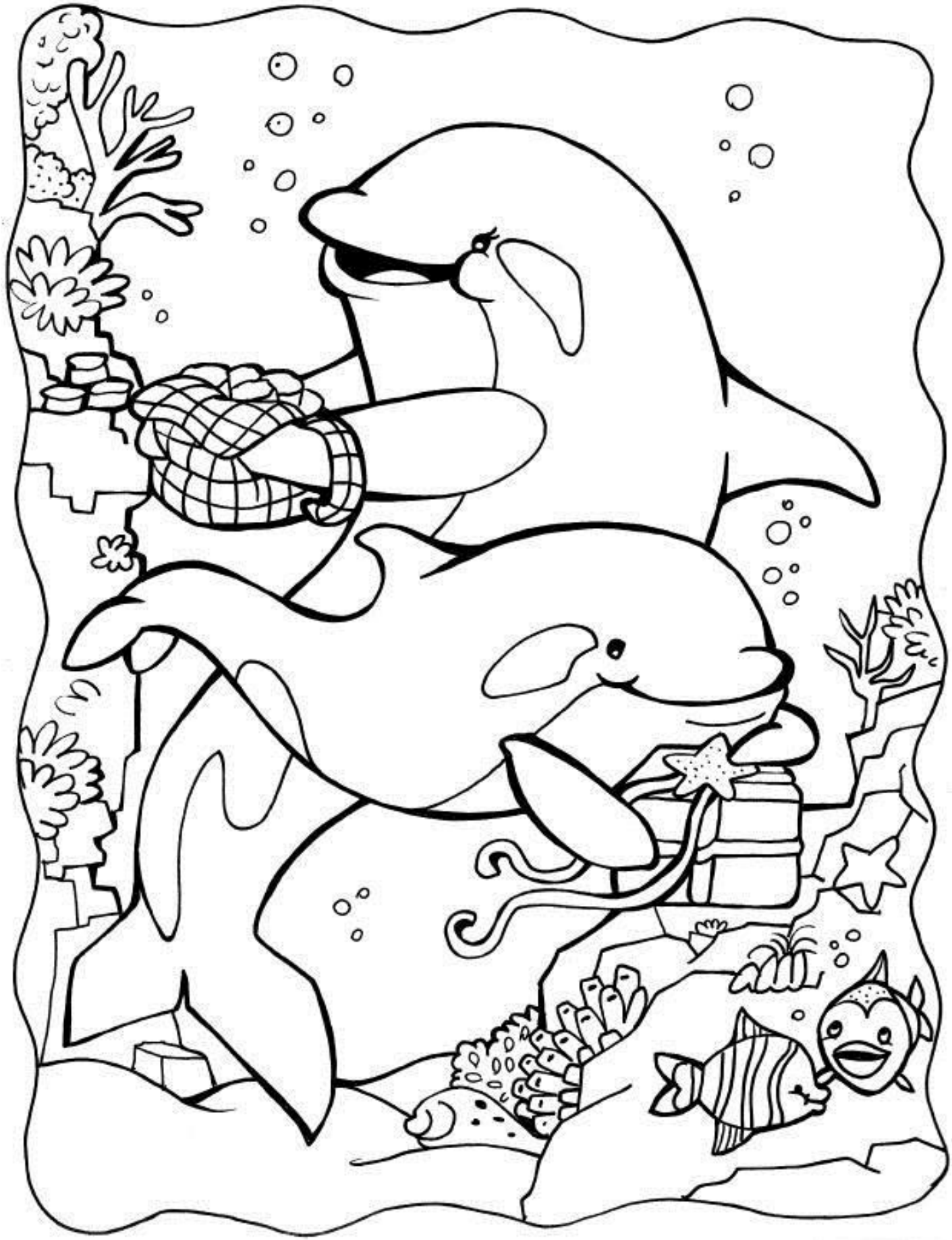
To Begin

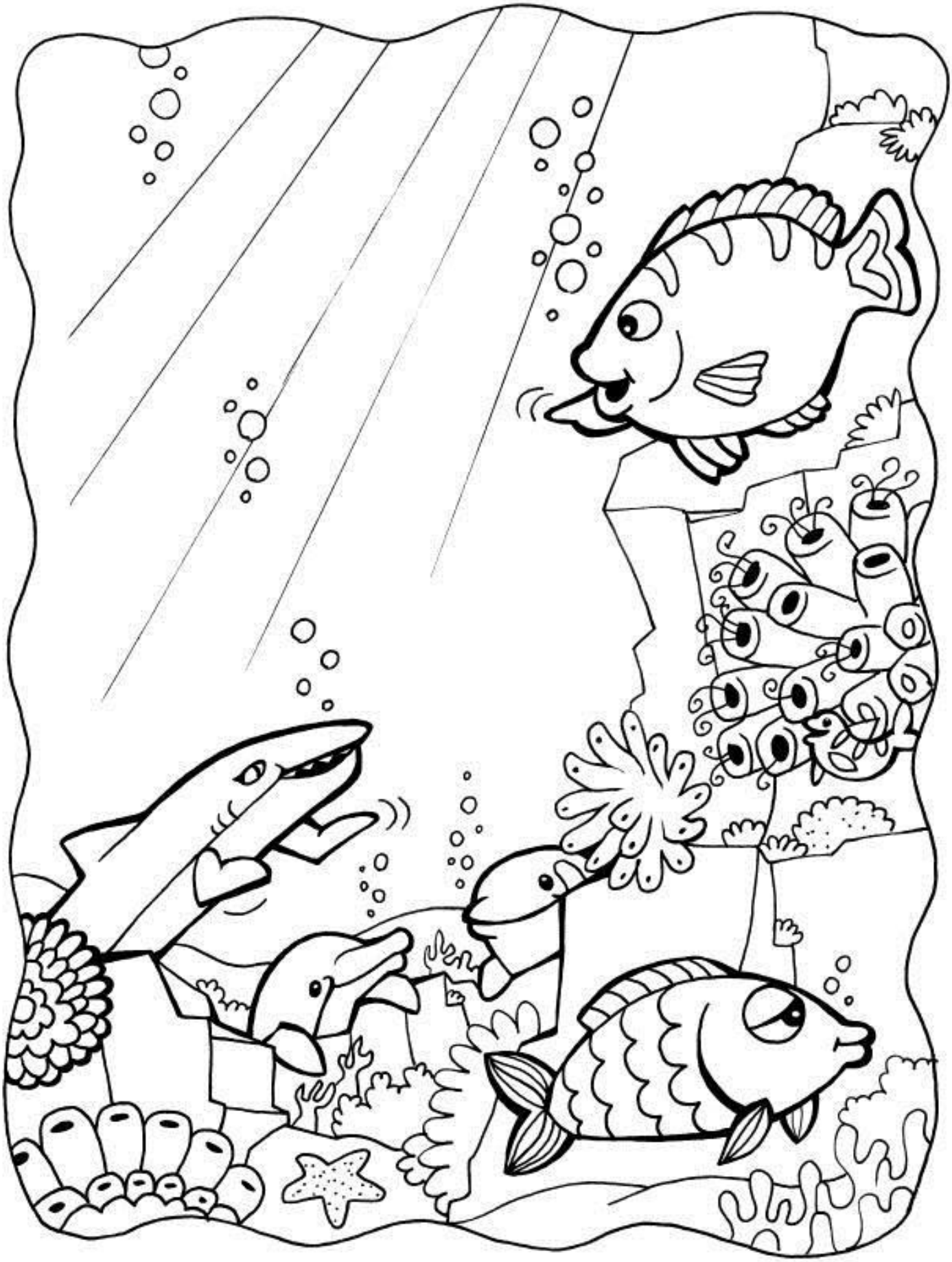
Use just one or a variety of the colour-in pages to remind the children how we use water and what lives in our water.

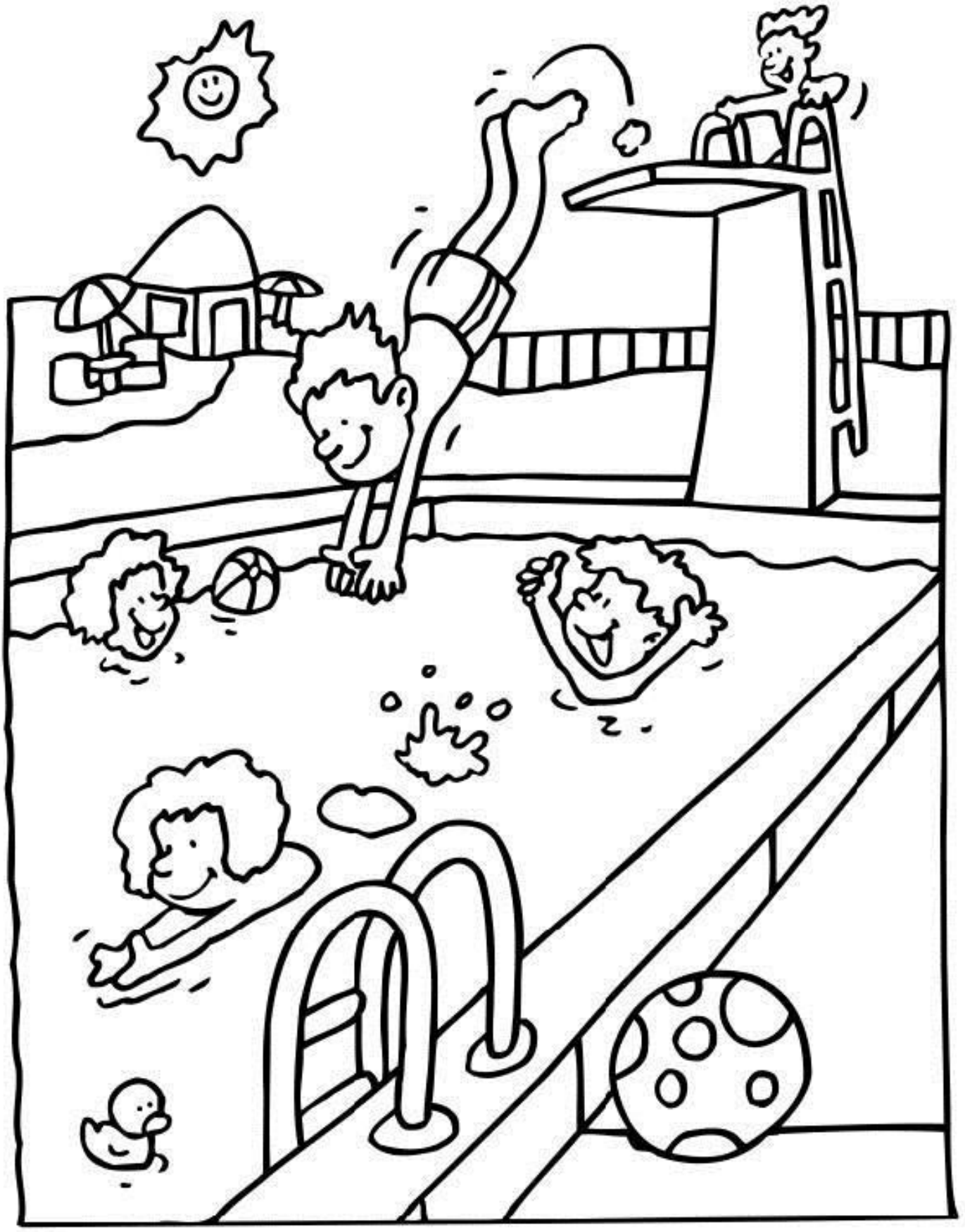
WORKSHEET FIVE: COLOUR-IN PAGES











3. INFORMATION ON CONDUCTING A WATER AUDIT AND DEVELOPING A WATER ACTION PLAN

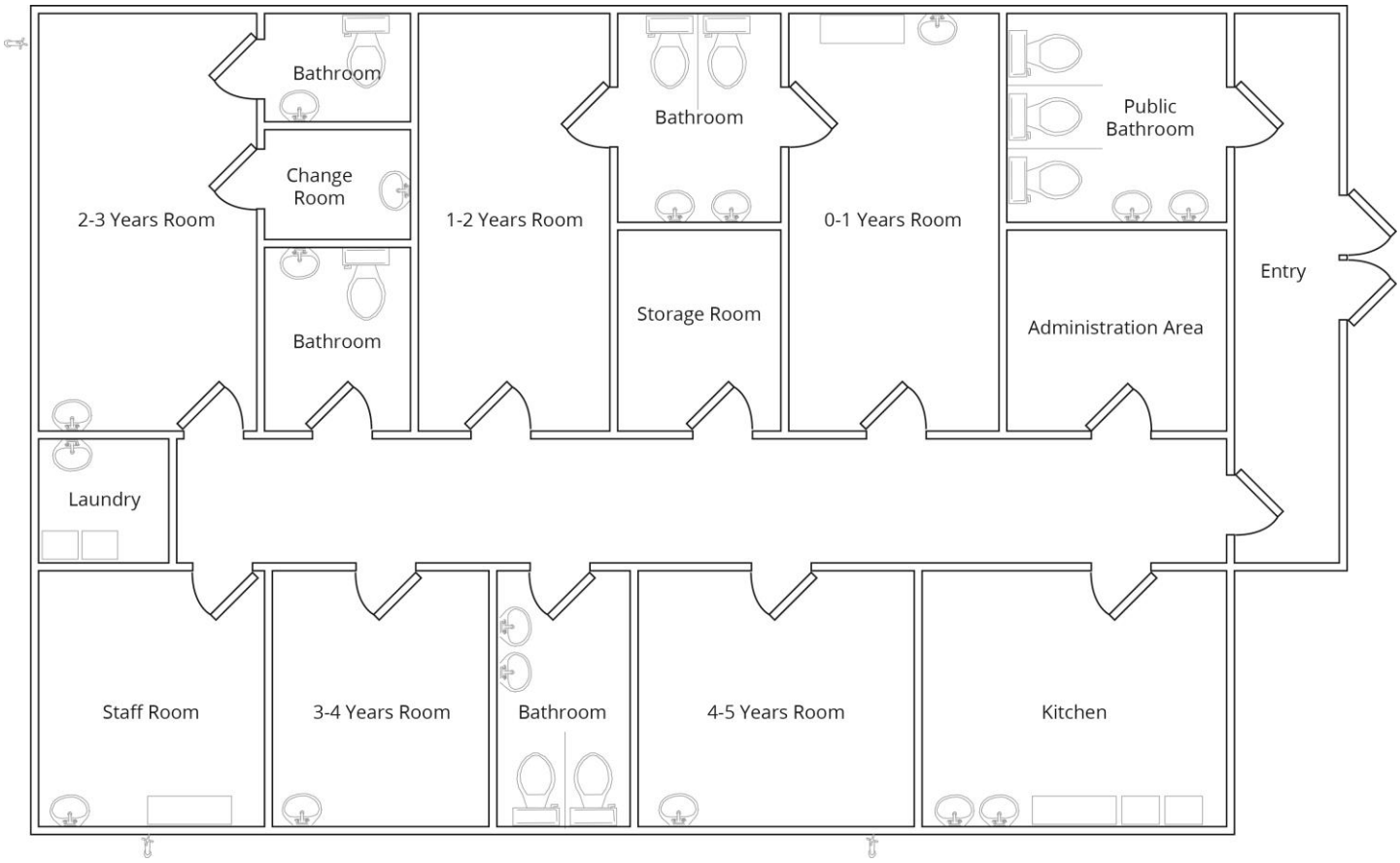
What is a Water Audit?

A Water Audit aims to identify the manner in which water resources are currently used and managed. It allows you to look at each water use zone at your centre/school to see when and how water is used and to assess where water savings could be made for the future.

Where to Begin

To begin, you will need to identify every water outlet in the centre/school. Using a map of the centre/school mark where toilets, handwashing facilities, kitchens, laundry, classroom sinks, staffroom sinks, and outdoor water points are located. An example is shown below.

Figure Three: Example of a Centre Map with Water Fixtures Identified



Once you have established where each of the water points are, fill out the following Worksheets to identify how water is used at each of these points and to determine where water savings could be made. The worksheets have been split into the following areas:

- Water Meter Readings
- Toilet Facilities
- Classroom Water Use
- Kitchen Facilities
- External Water Use
- Water Use Problems Identified
- School Water Action Plan

Please note: A worksheet should be completed for each toilet facility, each kitchen/kitchenette, etc in the centre

BY COMPLETING THIS ACTIVITY YOU WOULD BE ON YOUR WAY TOWARDS MEETING NATIONAL QUALITY STANDARD FOR EARLY CHILDHOOD QA1: EDUCATIONAL PROGRAM AND PRACTICE, QA2: CHILDREN'S HEALTH AND SAFETY, QA3: PHYSICAL ENVIRONMENT, QA5: RELATIONSHIPS WITH CHILDREN.

WORKSHEET 1: WATER METER READINGS

Meter Reading- Weekly school water use

Meter Number:_____

DATE	TIME (AM)	READING (AM)	TIME (PM)	READING (PM)	TOTAL DAILY USE

Meter Reading- Weekend water use

Meter Number:_____

FRIDAY (PM)	MONDAY (AM)	TOTAL WEEKEND USE

Please note: If your results are showing that water is being used within the centre between the Friday afternoon and Monday morning when no one has been onsite this will show that there is a water leak present somewhere or that someone is accessing the site unlawfully to use your water

Total weekly centre water use:_____

Idea: Where possible it is also useful to obtain past water bills to create a summary of usage over time. This will come in useful when determining your water usage pre water saving actions and post water saving actions.

WORKSHEET 2: TOILET FACILITIES

THIS WORKSHEET SHOULD BE USED FOR EACH BATHROOM IN THE FACILITY WITH EACH TOILETING ROOM HAVING A SEPARATE WORKSHEET COMPLETED FOR IT. THIS WORKSHEET SHOULD ALSO BE COMPLETED FOR THE STAFF BATHROOM AND PUBLIC BATHROOM

Location Description:

Number of toilets and type	Single Flush	Dual Flush	
Number of leaking/running toilets			
Number of urinals and type	Pull Chain	Motion Sensor	Continuous flush and fill
Number of leaking/running urinals			
Number of hand washing basins and type	Twist	Spring loaded	Motion Sensor
Number of leaking/running hand basins			
Are tap aerators fitted? (Yes/No)			
How many times a week are the toilet facilities hosed out?			
How many times a week are the toilet facilities cleaned?			
Other (include showers here)			

WORKSHEET THREE: CLASSROOM WATER USE

USE THIS WORKSHEET FOR EACH CLASSROOM/ADMINISTRATION SPACE WITH A WATER FIXTURE. A SEPARATE WORKSHEET SHOULD BE COMPLETED FOR EACH CLASSROOM

Location Description:

Number of handwash basins	Manual Operation	Spring Loaded	Motion Sensor
Number of leaking/running basins			
Are tap aerators fitted? (Yes/No)			

WORKSHEET FOUR: KITCHEN FACILITIES

USE THIS WORKSHEET FOR THE CENTRES KITCHEN AND STAFFROOM

Location Description:

Number of handwash basins	Manual Operation	Spring Loaded	Motion Sensor
Number of leaking/running basins			
Are tap aerators fitted? (Yes/No)			
Is a dishwasher installed? If so how many?			
How many times a day is the dishwasher used and is it full each time it is used?			
Is a hot water unit/urn installed?			
Other			

WORKSHEET FIVE: EXTERNAL WATER USE

USE THIS WORKSHEET FOR ALL EXTERNAL WATER FIXTURES					
Location Description:					
Number of bubblers and type	Twist	Spring loaded	Push button	Lever	Other
Number of leaking/running bubblers					
Number of outdoor taps					
Number of leaking/running taps					
Are these taps vandal proof? Yes/No					
Do any of the taps have hoses attached? Yes/No					
Do the hoses have trigger nozzles attached to the end of them? Yes/No					
Dominant garden vegetation type eg: natives/exotics/vegetable gardens					
How are gardens watered?	Hose	Portable sprinkler	Automatic sprinkler system		
How often and at what time of day are the outdoor areas watered?	Grass	Gardens			
Any current reuse options for water from water play containers					
Other					

WORKSHEET SIX: WATER USE PROBLEMS IDENTIFIED

LOCATION	PROBLEMS IDENTIFIED

Worksheet Seven should now be used to formalise an Action Plan. This Plan will identify the works to be completed, who is responsible and when works are expected to be completed by.

MEASURING THE FLOW RATE OF TAPS

When assessing the use of water, it is useful to determine the flow rate of taps prior to fitting tap aerators or flow restrictors. To do this choose a tap in each area of the centre assessed (it is not necessary to do every tap. Where the taps are the same model as each other they will generally have a very similar flow rate). Using a measuring jug and stop watch, turn the tap on fully and put the jug underneath for 5 seconds. Turn the tap off. Multiply the volume in the jug by 12 to record the millilitres of flow per minute.

Generally external taps have a much higher flow rate than internal taps so it is more important that these taps are managed wisely.

WORKSHEET SEVEN: SCHOOL WATER ACTION PLAN

Issue	Goal		Strategy
Priority (High, Medium or Low)	Location and Action to be Taken	Who is responsible?	Expected completion Date?	Estimated Cost?

EXAMPLE OF ACTIONS TO REDUCE CURRENT WATER USE

- Nominate water monitors for each room/centre to ensure taps are not left on and to ensure dripping and running taps, bubblers and toilets are reported immediately. A template for a certificate and a special badge design are included in Appendix One should you wish to use them to recognise the children's role in helping conserve water.
- Replace twist taps and bubblers with spring loaded or sensor models
- Replace single flush toilet cisterns with dual flush cisterns
- Replace continual flush urinals with motion sensor or pull chains
- Install aerators/flow restrictors to hand wash basins and all taps
- Plant native and drought tolerant gardens and use mulch. Free native plants are available through Council by contacting Council on 493498700.
- Use a broom or rake rather than a hose to clean hard play surfaces
- Where sprinklers are used, ensure timers are installed to prevent over watering and only water early in the morning and late in the afternoon.
- Use trigger nozzles on hoses.
- Only water gardens when they need it, not because it has been a couple days since they were last watered. Native and drought tolerant species do not require watering every couple of days for their survival. Using a soil moisture meter will also allow you to determine if the garden or lawn needs watering.
- Replace above ground sprinkler systems with drip or sub-surface systems that will reduce the amount of evaporation and over-spray.
- Have students provide their own drink bottle, or provide cups for students to refill from a container rather than using bubblers or taps
- Where bubblers are in use consider diverting the water from the bubbler drain to tanks or garden beds
- Use signage around the centre to encourage the children to think about their water use. Signage could include:
- Use the half flush button for wees (number 1's) and full flush only for pooh's (number 2's). Use a sticker next to the half flush button so that it is easily identified by younger children. An example is shown in Appendix One but a simple star on the half-flush button would also suffice.
    - Only flush the toilet once
    - Do not turn the tap on until you are ready to wash the soap off your hands
- Replace outdoor taps with vandal proof taps- a special handle is required to operate this style of tap.
- Only use the washing machine and dishwasher when there is a full load for washing.
- When replacing washing machines and dishwashers replace them with appliances with high water efficiency ratings.
- Purchase a rainwater tank for water use on gardens and turf areas and for water play. Also consider plumbing toilets and washing machines with water from rainwater tanks.
- Once plants and lawns are established, water them less often as this will establish deeper rooting plants and lawn.

- Only water the roots of plants and not the leaves.
- Monitor water use by reading the water meter regularly. This is especially useful of a weekend when no one will be using the centre. This will clearly indicate if there is a leak somewhere in the centre.
- Make it practice that all water used in water play is placed onto the garden at the completion of activities. Children will love to grab a small watering can and water the gardens around the centre instead of you tipping the water down the drain.

4. READING RESOURCES

READING RESOURCES

We Need Water

By Charles Ghigna (Picture Window Books, 2012)

A fun poem portrayed in book format that explores the wonderful world of water, reminding readers that it is important to keep water clean.

I Am Water

By Jean Marzollo (Scholastic Inc., 1996)

Learn about water and how we use it every day of our lives.

Water Everywhere

By Christine Taylor-Butler (Scholastic Inc., 2011)

Did you know that the Earth is mostly water? Learn about the many ways water is used and the places it can be found.

The Drop Goes Plop

By Sam Godwin (Wayland, 1998)

Mama and baby seagull follow the journey of a drop of water. Learn about the water cycle by following the drop when it falls from a cloud as rain, lands in a river, and eventually returns to the clouds.

Water Goes Round- The Water Cycle

By Robin Koontz (Capstone Press, 2011)

In graphic novel format, text and illustrations describe the key stages of the water cycle.

The Water Cycle

By Bobbie Kalman (Crabtree Publishing Company, 2006)

All life on Earth depends on the water cycle! The Water Cycle is a fascinating book that introduces children to this important cycle using a clear, step-by-step approach.

What Makes It Rain- The Story of a Raindrop

By Keith Brandt (Troll Communications, 2002)

Follows the journey of a raindrop through the water cycle and briefly discusses the characteristics and importance of water.

Something About Water

By Penny Mathews (Scholastic Australia, 2011)

Learn with Robbie about the importance of water and how our small changes in the way we use water can make a big difference.

Why Should I Save Water

By Jen Green (Barron's Educational Series, 2005)

Through this book children will learn ways they and their families can avoid wasting water.

Bear Loves Water (Board Book)

By: Ellen Weiss (Simon Spotlight, 1999)

Bear teaches readers about water in all it forms.

Splish, Splash, Splosh

By: Mick Manning and Brita Granstrom (Franklin Watts Ltd, 2004)
With a boy and his dog take an adventure through the water cycle and learn about the importance of water.

What a Waste

By: Jill McDougall and Martin Smith (Era Publications, 2003)

This book shows you how we waste water and why we should not.

I Can Help Save Water

By: Viv Smith (Franklin Watts Ltd, 1999)

This book looks at the problem of water pollution and shows how we can all help to alleviate the problem by starting with ourselves, our families and our friends.

Save Water

By: Kay Barnham (Crabtree Publishing, 2007)

In many parts of the world, the supply of clean, safe drinking water is running low. This important book explores where the water we use comes from, how water can become polluted, and why we should save water. Tips on saving water at home and at school encourage kids to think about conservation and caring for our environment.

Let's Save Water (Board Book)

By: Andrew Hopgood (Windmill Books, 2009)

A book to encourage the younger reader to think about the way we use water and how we can save water.

Water: Discovery Starts with a Single Word

By: Penguin Books (Penguin Books, 2006)

Flip the flaps, and find out all about water with a special surprise on every page.

5. SNIPPETS FOR USE IN YOUR CENTRES NEWSLETTER

SNIPPETS FOR USE IN YOUR CENTRES NEWSLETTER

The following snippets have been designed as short simple messages that can be used by your centre to fill in spaces in your family newsletters and on notice boards. They will reinforce the water conservation and management messages the children are learning whilst in care and will provide family members with ways they too can conserve and protect water resources at home and in their work places.

- Only use the dishwasher and washing machine when you have a full load of dishes or clothes to wash. It uses as much water to wash a half load as it does to wash a full load
- When you only have a couple of dirty dishes to wash, wash them by hand. Dishwashing by hand only uses 12 to 15 litres of water per wash compared to 20 to 60 litres if you used a dishwasher.
- When purchasing a new washing machine purchase a front loader. Front loaders use just 23 litres per kg of dry clothing compared to a top loader which uses 31 litres per kilogram of dry clothing.
- Always use a bucket and sponge to wash your car rather than using a running hose
- Always choose water efficient appliances when purchasing a new washing machine or dishwasher. The more water stars an appliance is rated, the greater your saving of water will be over the life of the appliance
- Never hose your garden in the middle of the day. Always water gardens early in the morning or late in the evening when the chance of evaporation is at its lowest.
- Plant native and water tolerant plant species in your garden to reduce the amount of watering required.
- Only water the roots of plants and not the leaves.
- Never hose garden paths to remove dirt, grass clippings or leaves. Always use a broom or rake. This will prevent the materials being carried into the stormwater system and our local waterways and save you water also.
- Instead of using a running garden hose for water play fill a bucket or small pool.
- Use a timer on garden irrigation equipment to prevent it being accidentally left on for longer than is necessary
- Install a water tank to collect usable rainwater for watering the garden, flushing toilets and use in the laundry
- Wash fruit and vegetables in a plugged sink rather than letting the tap run while water runs over them and down the drain.
- Always keep a jug of cold water in the fridge to prevent taps being run until cold water becomes available.
- Never fill a bath to the top. Just as much fun can be had with a half full bath.
- Do not take longer than necessary showers. For every minute between 10 and 20 litres of water comes out of your shower
- Always use the half flush button on the toilet when appropriate. To help younger children distinguish the appropriate button to press, use a sticker on the half flush button.
- Never leave the tap running whilst brushing your teeth. This will save around
- 5 litres of water per brush.
- Ensure leaking taps are repaired quickly. A leaking tap can waste up to 45 litres of water per day.

5. APPENDIX ONE

Template for water monitor certificate

maitland city council

CERTIFICATE

THIS CERTIFICATE IS PRESENTED TO

_____

I'M A WATER WARRIOR

HAS SUCCESSFULLY MONITORED, PROTECTED AND SAVED OUR CENTRE FROM WASTING WATER.

YOUR EFFORTS, ENTHUSIASM AND PRIDE HAVE NOT GONE UNNOTICED AND WE CONGRATULATE YOU.

_____ _____

DIRECTOR CENTRE

HUNTER WATER

Template for water monitor badge

maitland city council WATER WARRIOR

I'M A WATER WARRIOR

_____

AS A WATER WARRIOR I WILL ADVISE MY CARER OF ANY LEAKS, DRIPS OR WATER WASTING I OBSERVE IN ORDER TO ENSURE OUR CENTRE DOES NOT WASTE OUR PRECIOUS WATER RESOURCES.

HUNTER WATER

Template for Half Flush Toilet Stickers

HUNTER WATER

Use me to flush away your wee's