

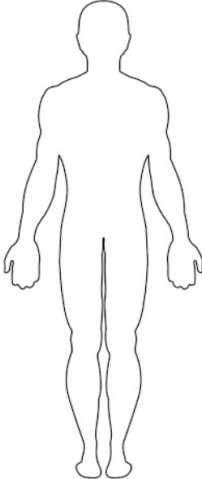
WATER IS LIFE (LEVEL 2)

Description	Explore the different uses and sources of water and understand the importance of clean water for living things.
Leading Question	How can we become more mindful of how we use water?
Total Time Required	4.4 hours over 4 days
Subjects	Science, Maths
Supplies Required	Paper, pencil, pen or color pens, two cups, sand, pebbles, water, bowl, string, marker (optional)
Learning Outcomes	<ol style="list-style-type: none"> 1. Understanding of the importance of water for living things 2. Understanding of the need to save water and steps toward that end 3. Understanding of the water cycle 4. Understanding water pollution 5. Multiplication within 10 6. Visualizing fractions 7. Number discrimination 8. Data handling (simple pictograms within 10)
Previous Learning	<ul style="list-style-type: none"> ● Addition and subtraction within 20 ● Fractions and percentage ● Sentence level reading and writing
Topics/Concepts Covered	<ul style="list-style-type: none"> ● Environmental Studies ● Importance of Water ● Water bodies and Sources of water ● Water consumption ● Water cycle and water pollution ● Fractions and percentage

DAY 1

Today you will find out the different ways we use water!

Suggested Duration	Activity and Description
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<p>20 minutes</p>	<ul style="list-style-type: none"> ● What happens when you don't drink water for a long time? Can you imagine not drinking water for days or weeks? Explain that all living things need water to survive. This means that humans, animals and plants cannot live without water. Most of the human body is actually made up of water. The human body is 60% or $\frac{3}{5}$ water. The learner will draw a human body silhouette as shown below and show $\frac{3}{5}$ of it as water using a blue color pen, pencil or crayon. ● We get $\frac{3}{5}$ from 60% by: <ul style="list-style-type: none"> - 60% can be expressed as a fraction as $\frac{60}{100}$ or $\frac{6}{10}$ - $\frac{6}{10}$ can be further simplified by dividing both the numerator and the denominator by 2 since 6 and 10 are both multiples of 2 - Because $6 \div 2 = 3$ and $10 \div 2 = 5$, the result is $\frac{3}{5}$ ● To show that $\frac{3}{5}$ of the human body is made up of water: <ul style="list-style-type: none"> - Start by visualizing $\frac{3}{5}$ by drawing a circle or other shape divided into 5 equal parts and coloring or shading only 3 parts. - Then try to do the same with the human figure above by dividing it into five parts and coloring three of those parts. - Draw lines to show different parts. One part, for example can be the area below the knees. The learner will draw a line below the knees, and this will be part 1. - Keep drawing lines across the body until she or he has 5 equal parts and will then proceed to color 3 of those in blue to denote $\frac{3}{5}$ water. <div style="text-align: center;">  </div>
<p>20 minutes</p>	<ul style="list-style-type: none"> ● Think about some ways water is used and draw images showing how water is used. For example, draw a bottle or glass of water to illustrate "drinking water".
<p>20 minutes</p>	<ul style="list-style-type: none"> ● Do an experiment to show what happens when something loses water:

	<ul style="list-style-type: none"> - The learner will place a piece of fruit, vegetable, bread, or cooked rice out in the sun and come back to it at the end of the day or in 2 days to see how it changed. Ask the learner what they think happened. - Explain that almost every living thing contains water and that the object placed in the sun became dry and hard because the heat of the sun caused it to lose water. - Draw a before and after image of the object to show changes. 						
15 minutes	<ul style="list-style-type: none"> ● Numeracy activities: <ul style="list-style-type: none"> - If you had 300 glass bottles and 12 plastic bottles in your house, what is the total number of bottles? - Imagine that your family drank 234 glasses of water last week. Draw a place value chart like the one below and round the ones place digit to the nearest number <table border="1" style="margin-left: 20px;"> <tr> <td style="width: 33%;">Hundreds</td> <td style="width: 33%;">Tens</td> <td style="width: 33%;">Ones</td> </tr> <tr> <td style="height: 30px;"></td> <td></td> <td></td> </tr> </table> - Draw a water bottle that is half full. Write half as a fraction - Draw a water that is one quarter full. Write one quarter as a fraction. 	Hundreds	Tens	Ones			
Hundreds	Tens	Ones					

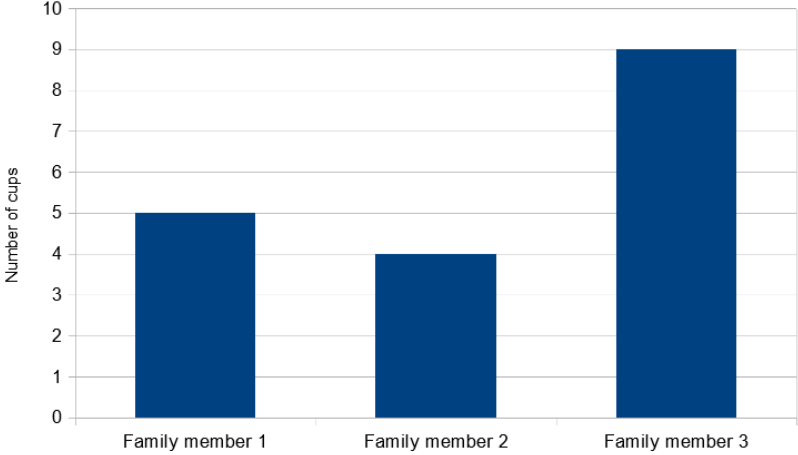
DAY 2

Today you will continue to explore how water is used and learn about the different sources of water.

Suggested Duration	Activity and Description
20 minutes	<ul style="list-style-type: none"> ● Think about some examples of water bodies and other sources of water in their home, neighborhood, city, and the world. ● There are different ways we get water - through water bodies like rivers and oceans, through underground drinkable water and through rain. ● Draw some of these sources in your notebook and label them, e.g. river, sea, lake, rain etc.
30 minutes	<ul style="list-style-type: none"> ● Find out how much water is being consumed by her or his household daily. Create the following table to track daily water consumption by writing down how many glasses of water each member of the family drinks in a day. Ask each family member or observe their water consumption throughout the day

Name	Number of glasses on Sunday
Family member 1	5
Family member 2	4
Family member 3	9

● Represent this in a bar graph:



- Who drinks the least amount of water?
- Who drinks the most amount of water?
- How many glasses of water do all family members drink in total?
- Subtract the lowest number of cups from the highest
- Multiply the results of any two family members together

DAY 3

Today you will explore the water cycle and water pollution.

Suggested Duration	Activity and Description
20 minutes	<ul style="list-style-type: none"> ● Reflect on where all the water he or she drinks and uses comes from with the help of probing from the parent or teacher. If he or she says the tap,

	<p>ask about the source that supplies tap water through the pipes. Explain that one source is rainwater that we get through the water cycle:</p> <ul style="list-style-type: none"> - Just like the sun dried up the object we placed outside from our day 1 experiment; the sun causes water from water bodies like the sea to evaporate (this is also what happens when we boil water). The parent or teacher can boil water in a kettle or stove top to demonstrate - What happens when we boil water? Do you see the steam going up? This is what happens when water from water bodies evaporates, it goes up as water vapour or steam. - When water vapour goes up, it starts to cool down because the higher we go, the colder the temperature gets. When they cool down, they form clouds! Clouds are made of cooled down water vapour that is floating in the atmosphere. This cooling down of water vapour is called condensation. - When too many of these water vapour clouds are created in the sky, they become too heavy and fall down as rain! This is called precipitation. - We call this a cycle because the water that falls lands on seas and other water bodies, which again evaporate, condensate and fall as rain.
<p>20 minutes</p>	<ul style="list-style-type: none"> ● Do an experiment to demonstrate the water cycle: <ul style="list-style-type: none"> - You will need a pen or marker, plastic bag or saran/plastic wrap, plastic or glass cup or mug, water, and a large bowl or container - Place the cup at the bottom of the large bowl and fill the bowl with water AROUND the cup so that it submerges two-third of the cup. Make sure that no water gets inside the cup - Mark where the water reaches on the side of the cup with a pen or marker. - Cover the bowl tightly with the plastic bag or wrap. You can fasten with tape, rubber band or string to hold it tightly in place. Make sure that the setup is placed in a warm location or at room temperature - You can also draw a cloud with your pen or marker at the top of the plastic bag right above the cup. Can you guess why? What do you think will happen in this experiment? - Wait for a few hours and observe what happens. Write a few sentences about your observations. You should see that water drops have formed on the top of the plastic wrap (due to condensation) and that there is less water in the bowl (because of evaporation). The condensation droplets represent clouds. You will see that they are dripping back into both the bowl and cup demonstrating precipitation!

20 minutes	<ul style="list-style-type: none"> ● Now we will learn about pollution. Explain that if we don't save water, we will not have enough of it, and that although so much of the earth is covered in water, not all of it can be used for drinking because it is salty seawater and it is dirty or polluted. Discuss how pollution from human activity makes water bodies like rivers, seas, lakes etc. dirty and how it is important to make sure that water is saved and kept clean.
10 minutes	<ul style="list-style-type: none"> ● Do an experiment to learn about clean water: <ul style="list-style-type: none"> - The learner will fill a cup with water then find objects to put inside the cup to "pollute" the water. The learner can also make "beach water" by adding dirt/sand and little rocks to the cup. Note: do not use clean water for this experiment. Use water that was already used to wash dishes or clothes so that you do not waste clean water - The learner will examine the cup. Ask the learner if she or he can drink it? What would happen if you drank it? Explain that dirty water can make us sick and that it is important to drink clean water.
15 minutes	<ul style="list-style-type: none"> ● Try to get clean water: <ul style="list-style-type: none"> - The learner will bring an empty cup. The learner will stir the cup with dirty water and notice how the dirt settles to the bottom. The learner will allow all the dirt to settle for a few minutes then transfer the water from the dirty cup to the clean cup. - Next the learner will try a different method of water purification. Pour the water back into the dirty cup and place a piece of light cloth (like nylon stockings) on top of the other empty cup. Now, pour the dirty water into the empty cup and watch it pass through the cloth filter to become clean. - The learner will reflect on which method worked best
10 minutes	<ul style="list-style-type: none"> ● Name and draw some examples of animals that live in different water bodies. ● Reflect on why it is important to keep water bodies clean for ourselves and these animals. Alternatively, reflect on how pollution affects animals in their natural habitat and draw an image of the "sea after pollution". ● Also do a side-by-side comparison of the sea with and without pollution.

Day 4

Today you will reflect on different ways water is used that might be wasteful or unnecessary.

Suggested Duration	Activity and Description
10 minutes	<ul style="list-style-type: none"> ● Reflect on different ways water is used that might be wasteful or unnecessary. Suggestions: <ul style="list-style-type: none"> - Do you think we need to keep the tap on while we brush our teeth? - Do you think it is ok to throw away water bottles that still have some water in them? - How do you think we can use less water in washing, showering, cleaning etc.? (examples: keep taps turned off when you are not using them, take quick showers that are less than 5 minutes etc.)
10 minutes	<ul style="list-style-type: none"> ● Think about steps to reduce pollution (such as using glass bottles instead of water bottles, not littering beaches etc.). ● Design a poster containing: <ul style="list-style-type: none"> - 3 steps to reduce water use or water wastage - 3 steps to reduce water pollution ● The steps must be both illustrated in an attractive drawing and written down as a sentence. ● You can also come up with a week or month-long challenge for his or her family to save water based on the steps. Examples include: <ul style="list-style-type: none"> - Use buckets to clean your body instead of shower - Recycle water used in washing vegetables and use it to water plants - Keep the tap turned off when you are brushing your teeth, lathering your hands with soap to wash them, or scrubbing the dishes.
5 minutes	<ul style="list-style-type: none"> ● Share with his or her family the poster and challenge. ● Carry out the challenge for a week or month and reflect with your family at the end of the week or month to discuss what they learned and challenges they faced.

Additional enrichment activities:	<ul style="list-style-type: none"> - Learners can track water consumption habits for several days and calculate daily consumption for those days - Learners can create a daily, weekly or monthly plan to save water and reduce pollution for their family
Modifications for simplification	<ul style="list-style-type: none"> - The learner can reduce the number of experiments done. - Learners can write down a few steps to save water or reduce pollution in their notebook for the final outcome instead of the poster and challenge

ASSESSMENT CRITERIA

A majority of my learners were able to:

- Complete the table tracking water consumption with the correct use of tally marks.
- Complete the poster with suggested steps to reduce water consumption and pollution.
- Challenge their family to reduce water waste and pollution.
- Execute all experiments properly.