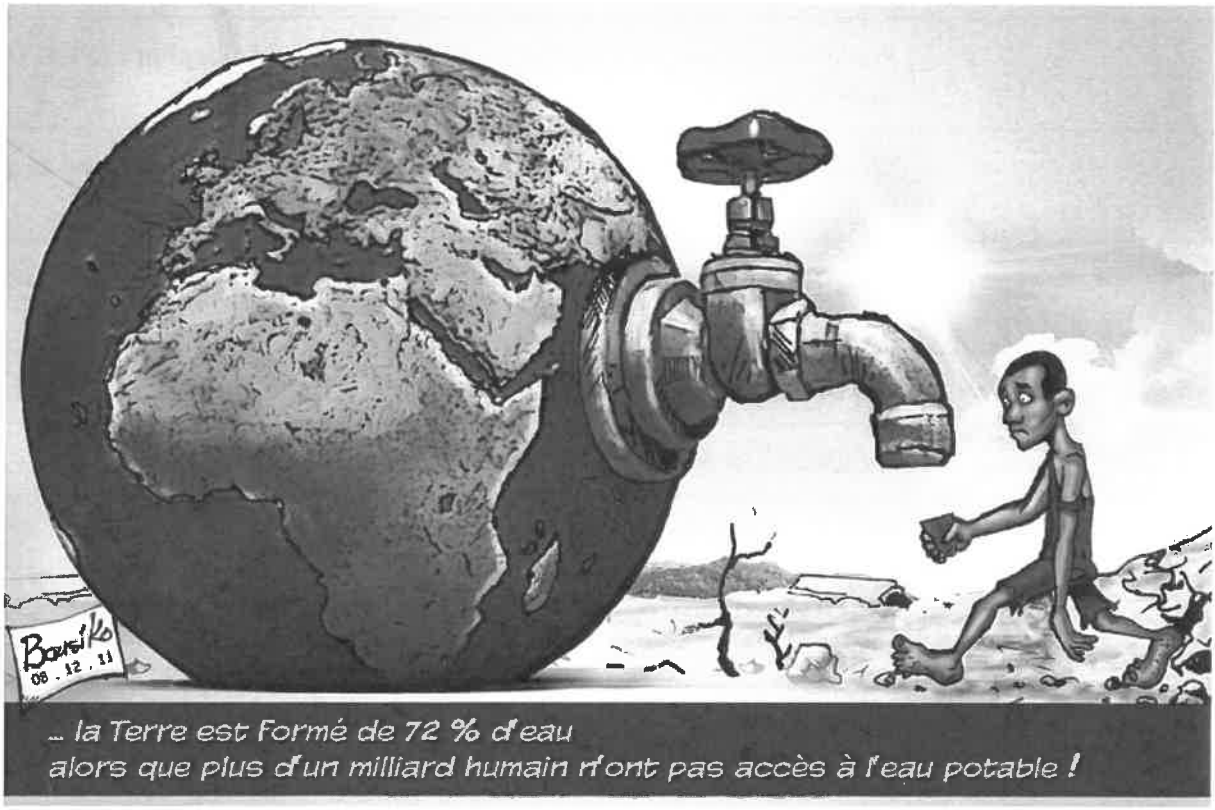
Water in the world

Name: _____

Why bother? https://www.youtube.com/watch?v=Fvkzjt3b-dU\

https://www.youtube.com/watch?v=QJMm9kz7VKo



ACTIVITY: Analysing a cartoon

1. What do you think this cartoon is trying to say?

_____

_____

_____

2. Use Google Translate to discover what the captions say. Were you close in your interpretation of the image?

_____

_____

_____

Glossary – Water in the World

ACTIVITY: Find the meanings of the words below in the glossary list.

- Aquifer
- Artesian Basin
- Catchment
- Climate
- Environmental resources
- Evaporation
- Groundwater
- Orographic rainfall
- Precipitation
- Renewable
- Runoff
- Sustainability
- Synoptic chart
- Water cycle
- Weather

	Area of land where rainfall/precipitation flows to a lower elevation, such as a river, lake or ocean; also referred to as a drainage basin
	Process whereby the suspended droplets in the atmosphere fall as rain, hail, sleet or snow
	Weather map showing atmospheric conditions at a certain place at a certain time. Used to predict short term weather
	Long-term record of atmospheric conditions, such as precipitation and temperature
	Continuous movement of water on Earth
	Moisture lost to the atmosphere from open water bodies
	Rocks and sediments that contain groundwater
	When winds push moist air over mountains, condensation and precipitation occur on the windward side
	When some precipitation remains in the surface and feeds into streams, rivers, wetlands and lakes
	Water stored beneath the Earth's surface
	Short-term changes in atmospheric conditions
	Groundwater confined and pressurised within an aquifer
	Replenished in a relatively short period of time
	Resources occurring natural within environments: atmosphere (air), lithosphere (land, soil and minerals), hydrosphere (rivers and oceans) and biosphere (plants and animals)
	Balancing social, economic and environmental needs for current and future generations

How many words did you already know?

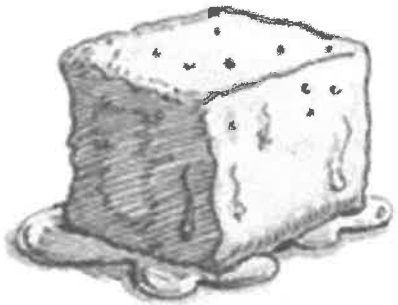
Water resources

Key questions:

1. Where is water found?
2. Why is water found in different amounts in different locations?

ACTIVITY: Brainstorming

1. Make a list of all the uses we have for water.
2. Use the table below to classify water into its different states and list where these are mainly found.

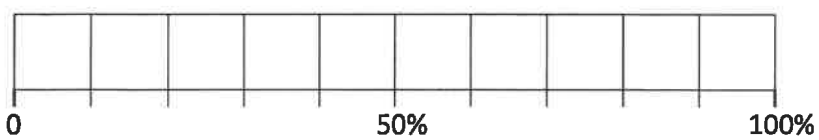
		

3. Research different examples of the form water takes in each state e.g. rain, fog, ice, and add these to the table.

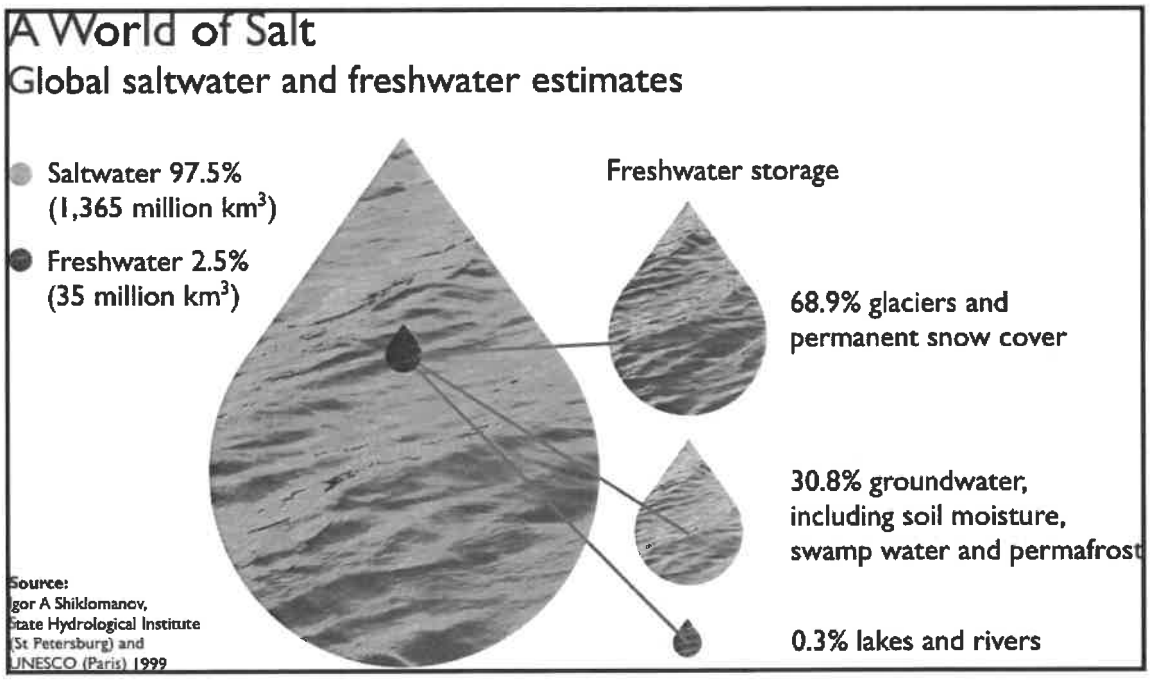
4. Estimate how much of the world's water is salty and how much is fresh.
   Before you make your estimation, turn to the person next to you and discuss whether there is more salty or fresh water, or, if there are even amounts. Try and give reasons for your point of view.
   - Percentage of the world's water that is salty _____ %
   - Percentage of the world's water that is fresh _____ %

   Total _____ % (should be 100%)

5. Construct a composite bar graph to show your estimate:



6. Identify the *type* of source below



7. Does your estimate of the world's level of salty and fresh water match? Were you close?

8. The storage of fresh water is listed in the source. Where is most of the world's fresh water stored?

9. Do you think this is easily used by humans? Why/why not?

10. Where is the world's saltwater stored?

11. The source uses estimates. Why do they not have an exact figure?

12. Do you think this makes the source less reliable?

Where is water found?

Measuring the amount of water in a location is an important skill for meteorologists, farmers, urban planners and many other people who rely or keep track of water.
A good way to keep track of long term variations in rainfall and temperature is to use climate graphs.

ACTIVITY: write your own definition for climate in the space below.

_____

_____

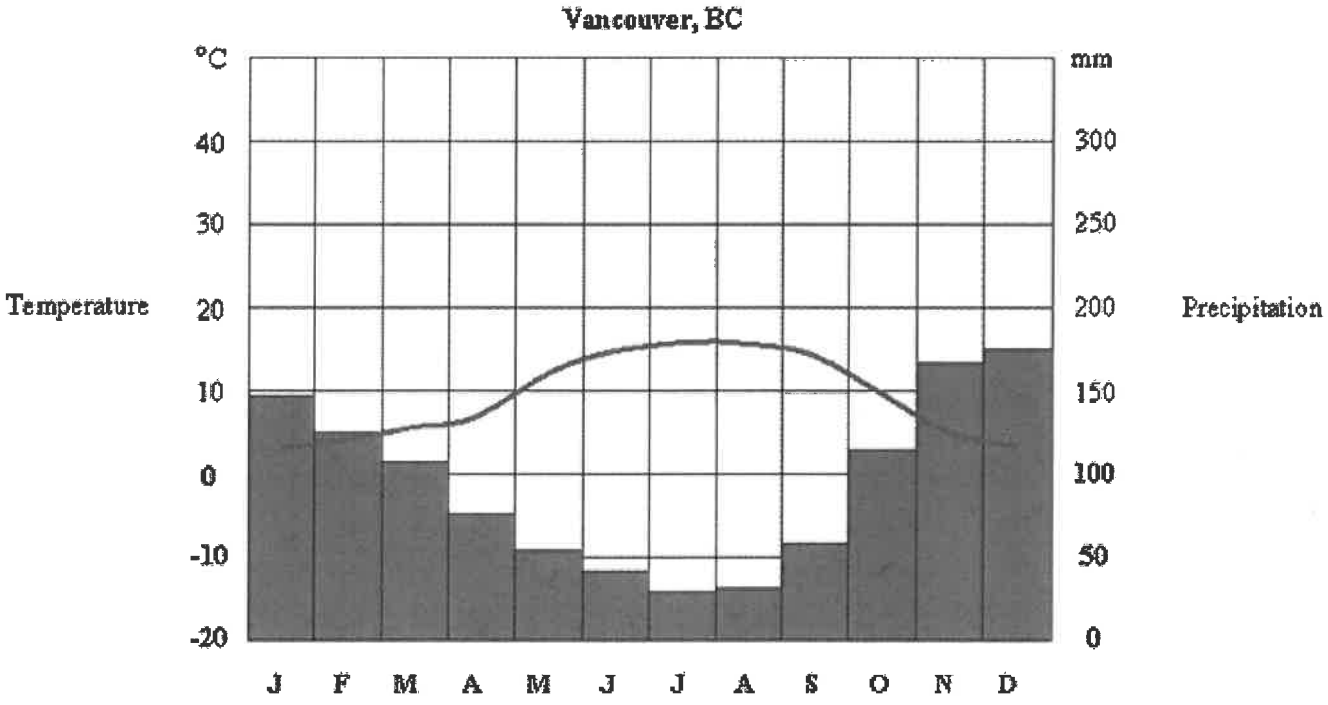
_____

_____

Talk to the person next to you about what they wrote and share ideas. Add any further details to your definition.

ACTIVITY: Climate graphs

A climate graph is a summary of the long term trends in rainfall and temperature of a particular location. It is calculated as an average of data collected over several (sometimes hundreds of) years, for each month of the year.



In the space below write what you notice about the climate graph:

Climate graphs use temperature, in , and precipitation (_____), in mm, data and graph these in one space.

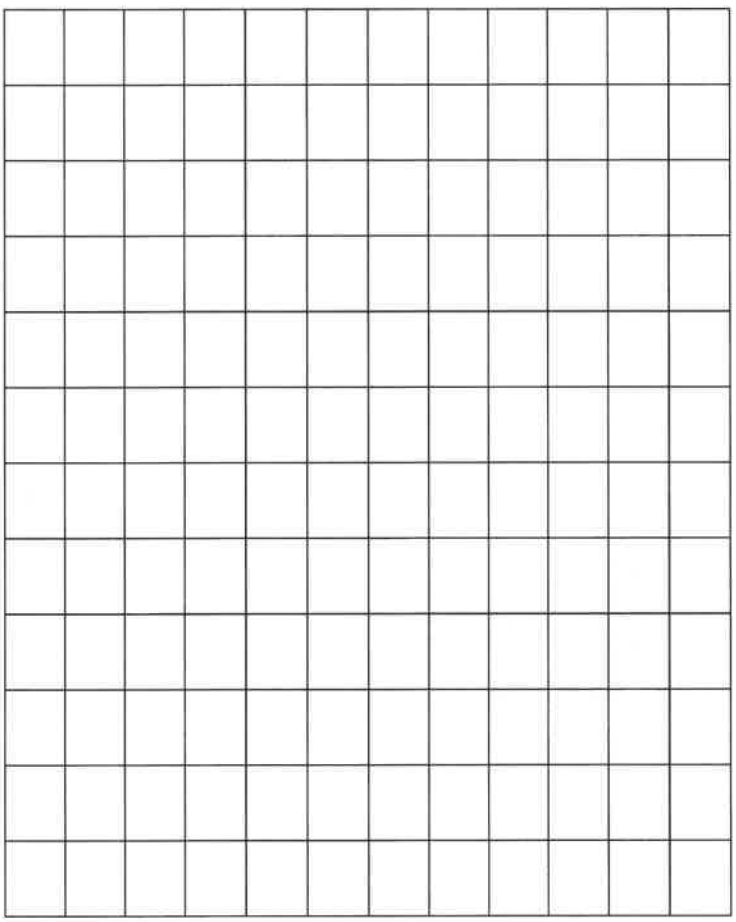
Temperature is graphed in the colour _____ with a freehand line graph. Firstly the data for each month is plotted with red dots in the centre of each month's column and then each dot (start from the first and ending at the last) is joined together with a freehand red line.

Precipitation is graphed in the colour _____ as columns. Firstly the data for each month is plotted as columns (as wide as the graph column for each month) and are then coloured in blue.

Sometimes the data will overlap if there are high temperatures and low rainfalls.

ACTIVITY: Construct a climate graph for Kathmandu using the data table and the graph space below.
HINT: Start by shading the data in the table red (temp.) and blue (precip.) as well as the axis on the graph – once you have labelled them, and graph one data set at a time.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperature (°C)	10	12	16	20	23	24	25	24	23	20	15	11
Precipitation (mm)	15	41	23	58	122	246	373	345	155	38	8	3



ACTIVITY: Match the climate graph to the following descriptions
HINT: use the clues in the boxes below to help you match the correct climates to their descriptions

Temperature range	**Precipitation**	**Location**

is calculated as:

You would say that a climate has a large temperature range (difference in temperatures) if there was a large different in the hottest temperatures throughout the year.
If there is a small difference in the high and low temperatures throughout the year for a location it is said to have a small temperature range.

When referring to precipitation you may be asked to calculate:
- average annual rainfall
- yearly precipitation

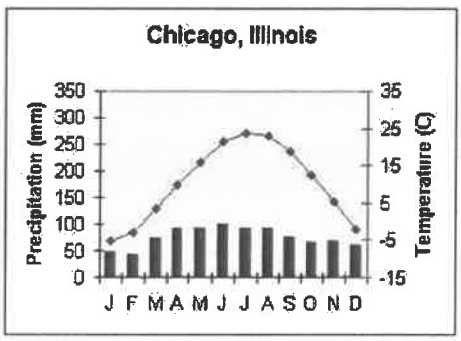
They are saying the same thing, which is: What is the **TOTAL** rainfall for the year?
The average tis for the whole year – remember that each month is already an average.

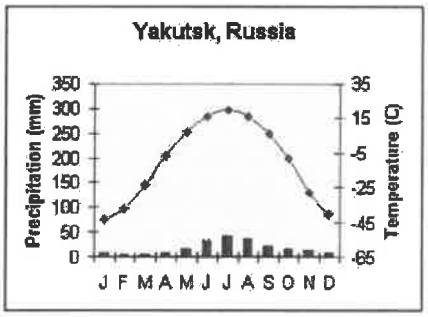
(Hemispheres)

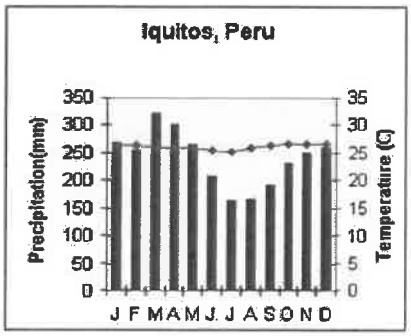
If a temperature line is flat, this usually means the location is close to the equator.
If there is a bump up in the middle of the line, it means this is a northern hemisphere location.

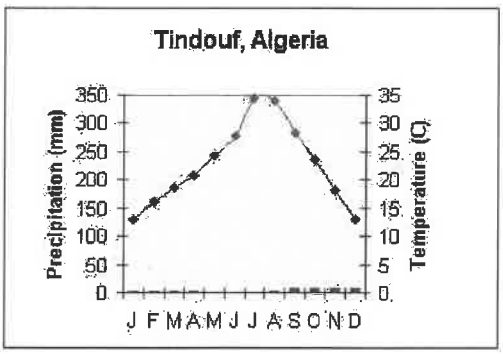
Similarly if there is a dip down, it suggests a southern hemisphere location.

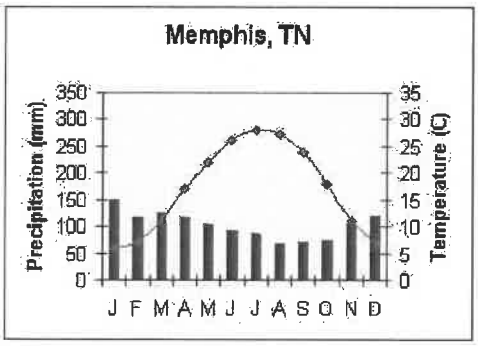
1. Lowest annual precipitation
2. Largest average annual rainfall
3. Locations in the northern hemisphere
4. Location nearest to the equator
5. Location with the highest summer temperature and low summer rainfall
6. Largest temperature range
7. Smallest temperature range











The water cycle

Key questions:

1. What are the processes in the water cycle?
2. What influences water flows and the availability of water in different places?

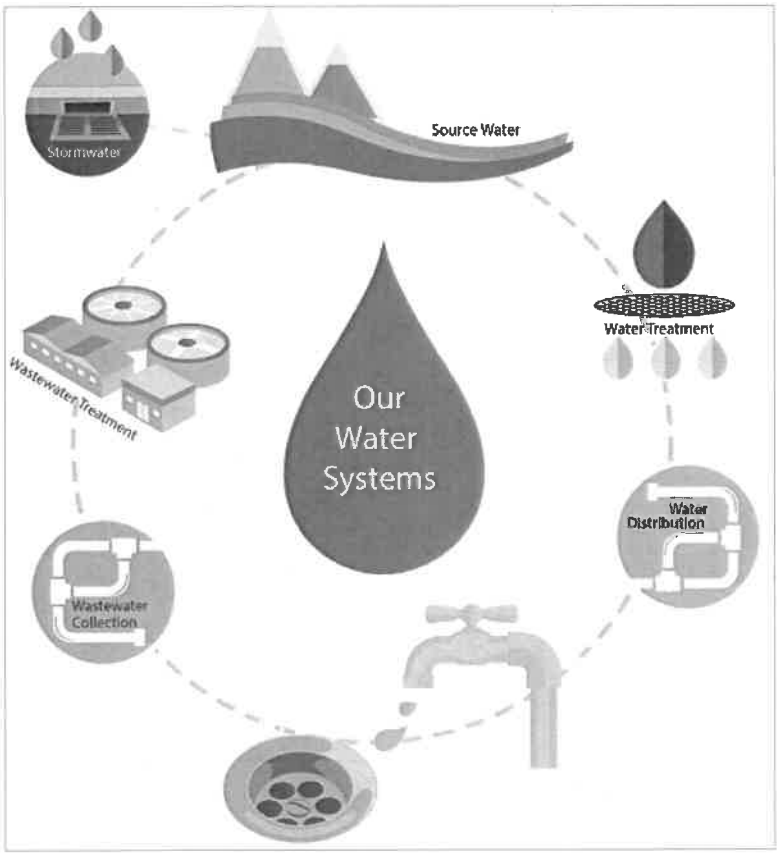
ACTIVITY: Diagrams

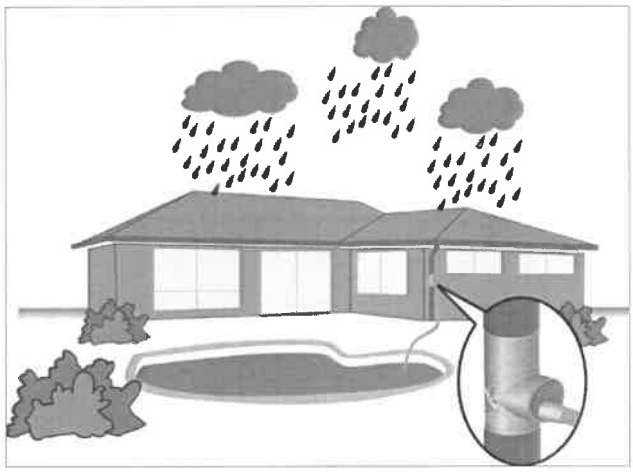
It may be surprising to learn that there are people who would get offended if you mislabelled a map, infographic, illustration or computer graphics as a diagram.

Diagrams are different from these in a few key ways:

- Generally, diagrams do not show numerical data (only ideas and relationships)
- They tend to use shapes rather than real world pictures, and lines and arrows to show the relationships between the ideas

1. Look at the two sources below. Decide which is the better example of a true diagram.





2. Listen to your teacher describe the water cycle and try and draw it as a diagram in the space below.

Remember to use shapes e.g. circles for ideas, and lines or arrows to show a relationship or

The Water Cycle

Fill in the blanks below with words from this box:

✓ evaporation	✓ sunny	✓ precipitate	✓ condenses
✓ evaporates	✓ clouds	✓ vapor	✓ atmosphere
✓ heating	✓ heavy	✓ oceans	✓ lakes
✓ droplets	✓ plants	✓ hail	✓ glaciers
✓ runoff	✓ snow	✓ cycle	✓ crystals
✓ rain	✓ rivers	✓ streams	

Evaporation

On a warm, _____ day, water in a glass of water seems to slowly disappear. This is because the energy from the sun is _____ the water up and turning the liquid water into water _____. This process is called evaporation. When the water _____, it becomes an invisible gas in the _____. Evaporation takes places all over the earth, but especially in the _____ and _____ where there is lots of water.

Condensation

As the water vapor rises, it cools off and _____ into water _____. If the water vapor becomes extremely cold, it will form ice _____ instead of water droplets. As the water droplets or ice crystals grow bigger and more numerous, they form _____.

Precipitation

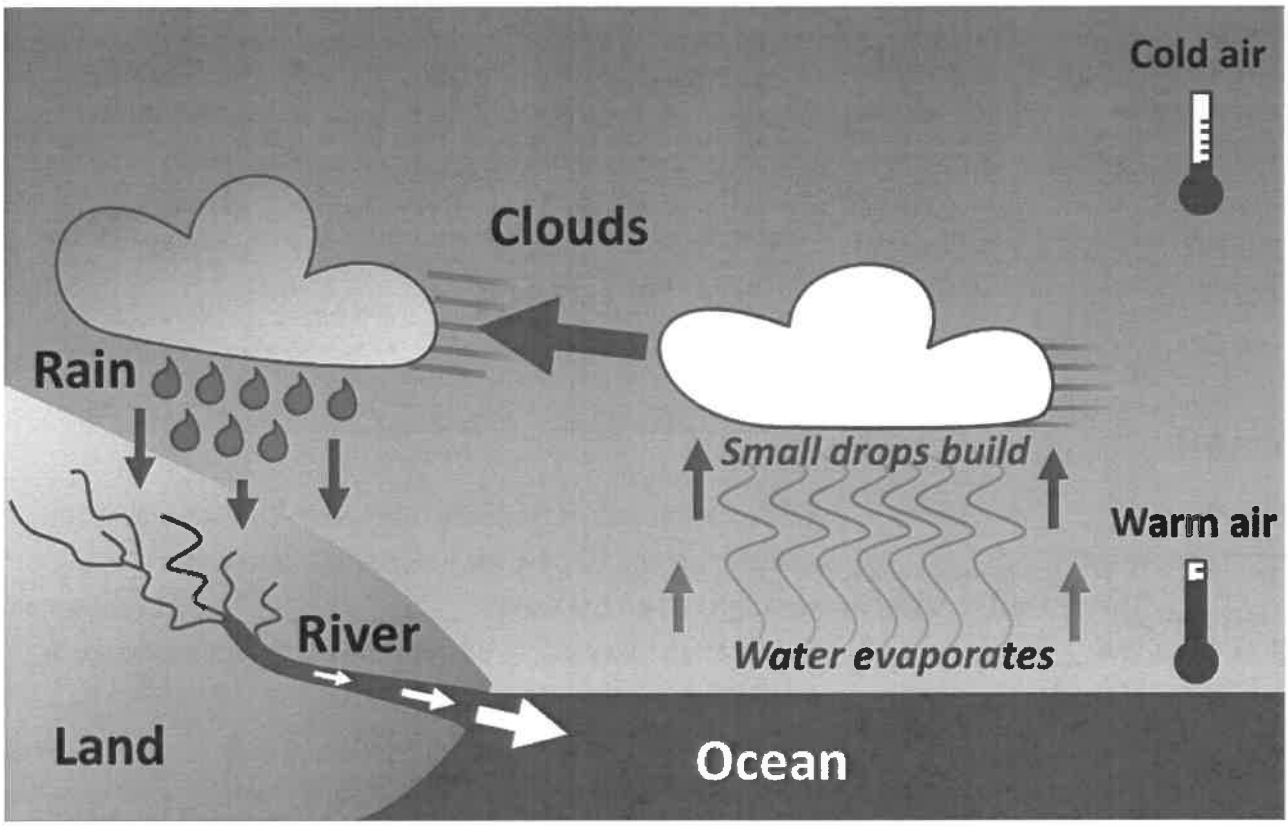
If water droplets or ice crystals become too _____, they can't stay in the air. They _____. Water droplets precipitate as _____ and ice crystals precipitate as _____. Sometimes, the rain freezes before it hits the earth and precipitates as _____.

Runoff

This precipitation gathers into _____ and _____ that flow down to the lakes and oceans. This is called _____. Not all of the water makes it back to the oceans and lakes right away. Some of it is used by animals and _____. Some is frozen into _____. Eventually, the animals and plants breathe the water out and the glaciers melt, releasing the water back into the water _____.

ACTIVITY: The following diagram of the water cycle is missing the key geographic terminology. Use the word bank below to annotate the diagram so that it reflects correct terminology.

Precipitation	Condensation	Runoff	Evaporation



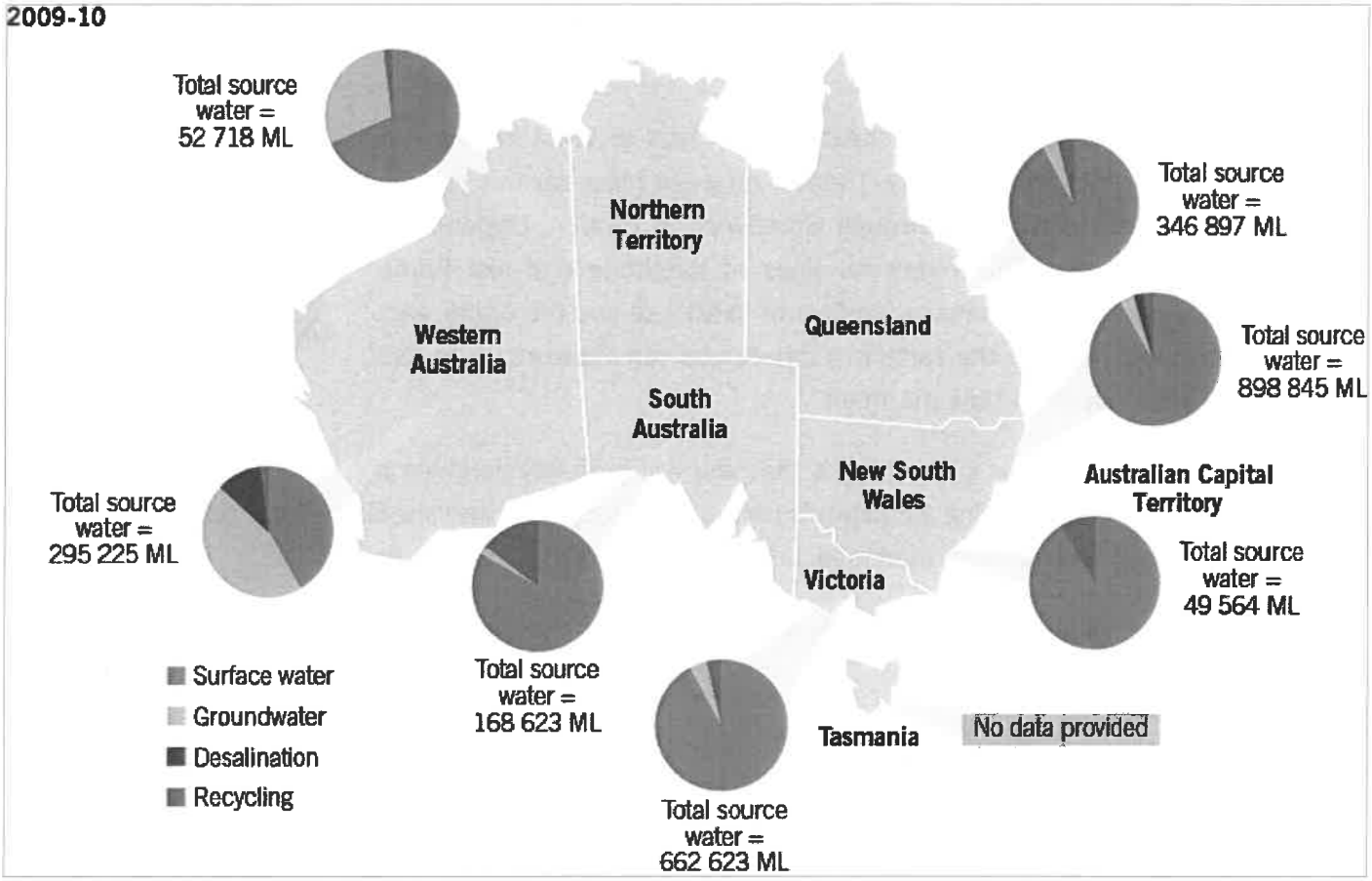
Australia's water sources

Key questions:

1. Where is water found in Australia and why?

Australia is mostly an arid nation. In many areas in the Western Desert Regions there is a higher rate of evaporation than precipitation. Areas which receive large levels of annual rainfall are coastal, whereas areas which receive low levels of rainfall each year are often inland and to the west of the continent.

ACTIVITY: use the source below to respond to the questions.



1. What are the different water source types in Australia?

---

2. Which state or territory uses the most surface water? _____
3. Which state or territory has the greatest total source water usage? _____
4. Justify why this is occurring.

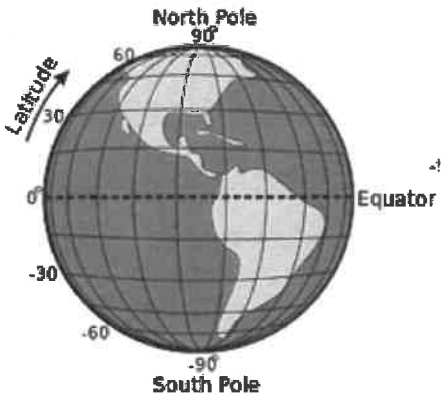
---

5. Provide an appropriate title for this map.

---

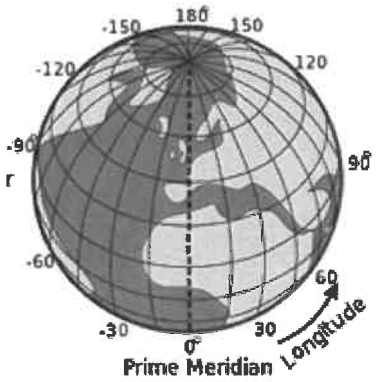
6. What are the positives and negatives of using the pie graphs to show water usage?

ACTIVITY: Latitude and Longitude



Latitude and Longitude are a system of coordinates that measure where something is on the Earth's surface. They use angles to measure how far a location is from a main point on the Earth.

Latitude is a measurement North or South from a line which cuts the Earth in half called the Equator. The Equator and all lines of latitude (parallels of latitude) are flat or horizontal. You can measure up to 90 North of the Equator to the North Pole and up to 90 South to the South Pole.

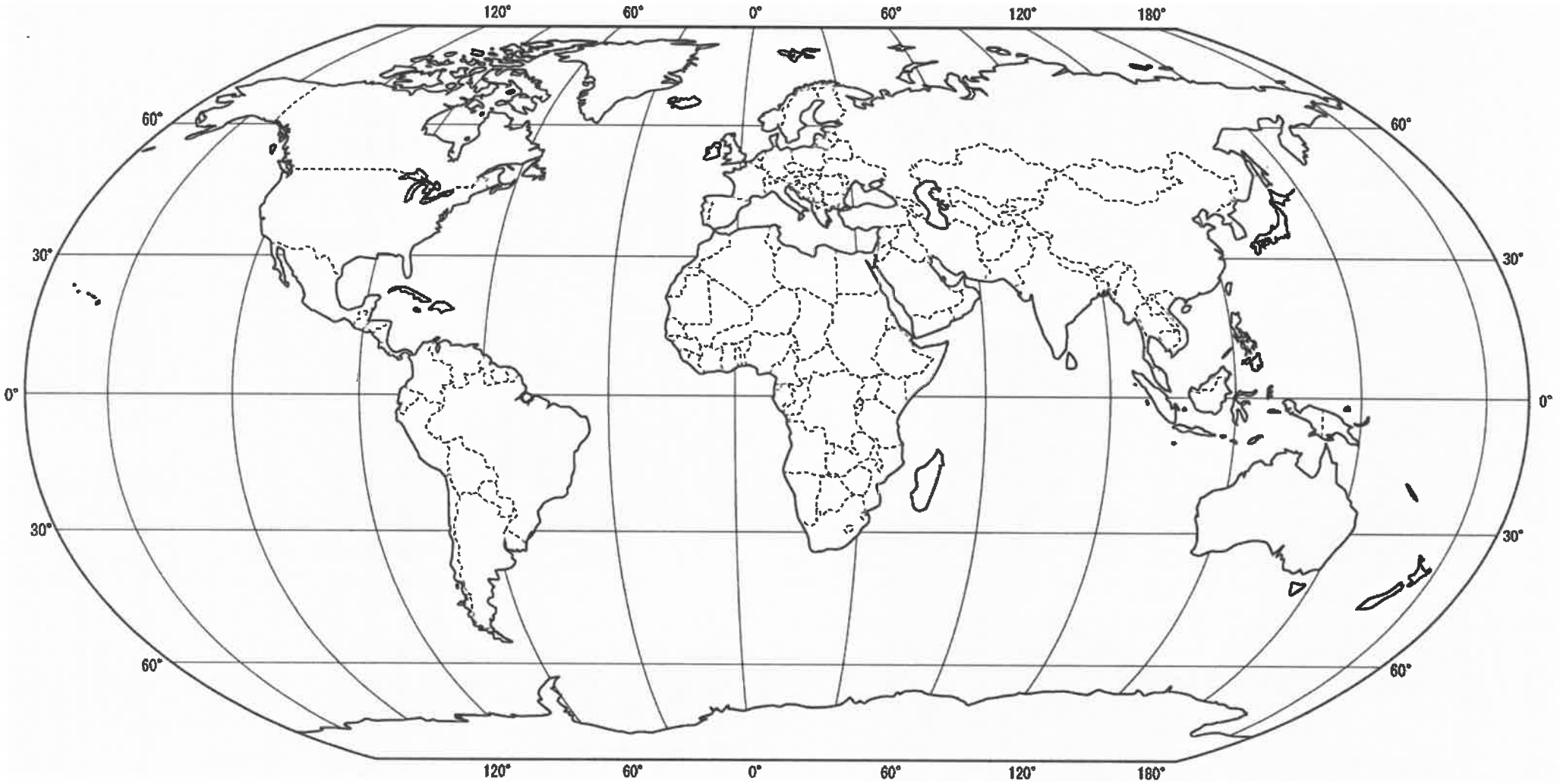


Longitude is a little different. It is a measurement East or West from a line which cuts the Earth in half vertically. There is no great place for this line, so it was decided that it would go through Greenwich in London, England. So the Greenwich meridian (the name for lines of longitude and aka Prime meridian), is where we start measuring East or West - so you are either east or west of London. Because the earth is a sphere you can measure up to 180 East or 180 West from the Prime meridian.

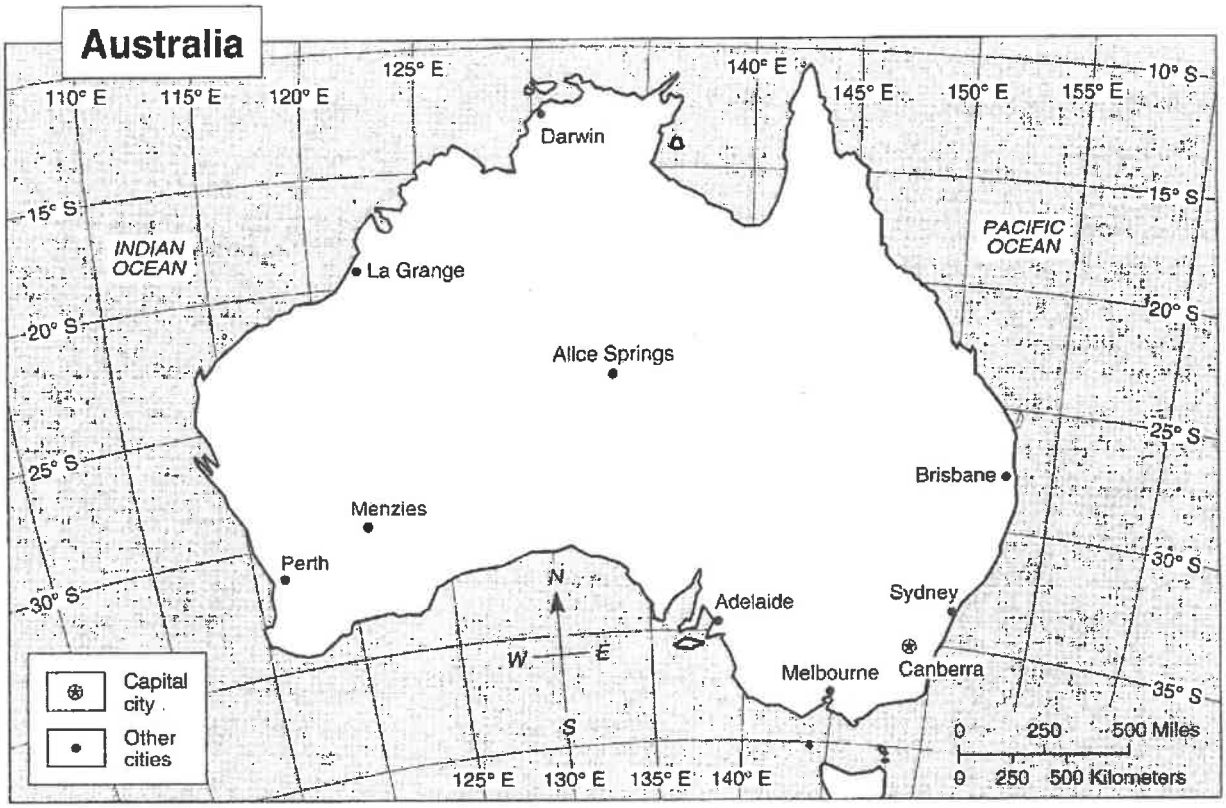
If that sounds confusing, the great thing is that you will probably be given a flat map to use when calculating a location's latitude and longitude and should use the coordinates on the edge of the map to make an informed measurement of where it sits on the Earth.

Try and calculate the latitude and longitude of the places on the map below.

ACTIVITY: Label the continents, oceans, hemispheres and important lines of latitude and longitude on the map below.



ACTIVITY: Using the map below find the latitude and longitude of different cities.



	Latitude	Longitude
1. Canberra	_____	_____
2. Melbourne	_____	_____
3. Darwin	_____	_____
4. Perth	_____	_____
5. Brisbane	_____	_____

6. Which is the northern most city labelled on the map? _____
7. Which is the southernmost city labelled on the map? _____
8. What is the direction from Sydney to Perth? _____
9. What is the direction from Adelaide to Brisbane? _____
10. Which city is south-west of Menzies? _____
11. Predict which parts of Australia you think will be the driest and wettest. Use the cities on the map in your answer e.g. the area around Perth will be....

_____

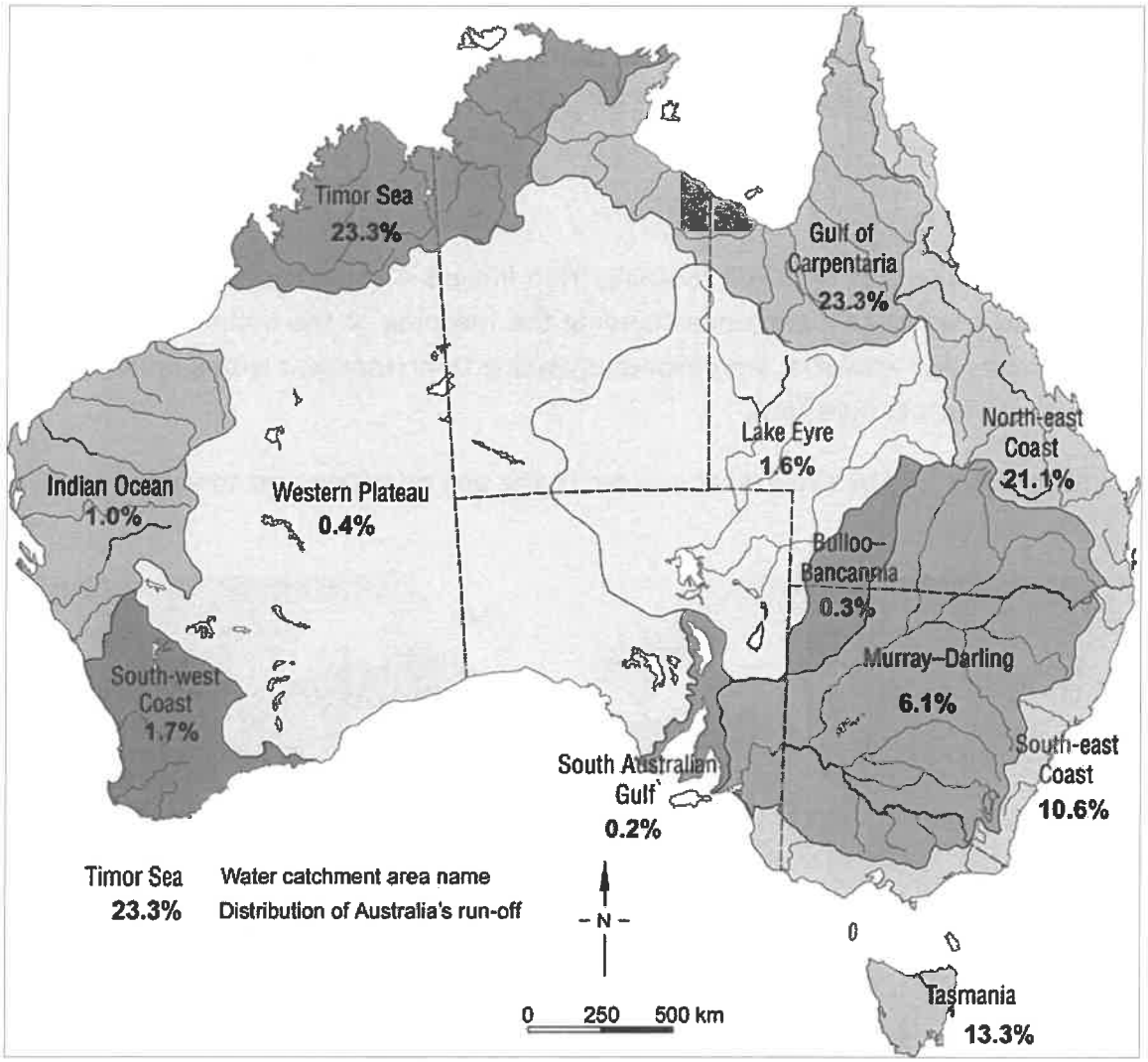
_____

12. Can you justify (provide reasons) for your predictions above?

_____

_____

ACTIVITY: Using the map below and the previous map of Australia respond to the questions.



1. What is a water catchment area?

2. Which catchments collect the most run-off?

3. Do these areas relate to latitude? (use evidence from the previous map)

4. What other factors play a role in determining how much water is collected in a catchment area?
   HINT: look at the amounts each catchment area recieves and find trends.

Water scarcity and water management

Key questions

1. What is water scarcity and what contributes to it?
2. How can we overcome water scarcity?

ACTIVITY: Visual literacy

Being able to decode messages or gain a meaning from images is called visual literacy. Basically it is like being asked to read a bit of text and understanding the meaning of the author. Often images, such as cartoons, photographs and artworks, are deliberately trying to provide you with a point of view, message or even make you ask further questions.

Look at the image below and describe what you see to the person sitting next to you. Then fill in the table below.

Somebody	Wanted	But	So	Then

Visual literacy continued

Using the image in the previous page, respond to the following questions:

1. What are two questions you would like to ask the person in the image?

2. What would the rest of the day be like for this person?

3. What in the image relates to the topic of water scarcity?

4. What message is being communicated from the photographer?

5. Why do you think the photographer chose not to use the person's face? What was the purpose of not using it?

6. Would it have made a different message or more/less powerful image?

ACTIVITY: Health and water.

Respond to the following questions about the newspaper article in your workbook/laptop.

The Himalayan Times, November 21, 2007

Waterborne diseases kill 13,000 kids a year

Himalayan News Service

Kathmandu, November 19

Over 13,000 children die of waterborne diseases in Nepal every year. The root cause of these casualties, equivalent to 65 plane crashes, is lack of toilets in the homes of these children.

"As many as 13,000 children die every year in our country because of waterborne diseases. These deaths can be curbed by building a toilet in every household. The government and non-governmental organisations have not made enough efforts towards this end," said Umesh Pandey, coordinator of the Nepal chapter of the Water Supply and Sanitation Collaborative Council.

He was addressing an interaction organised to mark the World Toilet Day (WTD). The practice of celebrating the WTD started from Singapore in 2001.

We keep dreaming of cutting to half the number of people, who lack basic sanitation, by 2015, but we don't pay attention to small things that can make a difference, he said. Citing government data, he said only 49 per cent of total schools in the country have toilets.

Senior comedian Madan Krishna Shrestha said infrastructure building and awareness campaign should go side by side.

1. What are the Himalayas?
2. In which country are the Himalayas located?
3. Describe the location of this country.
   (Latitude/Longitude, Region, Neighbouring countries, Continent)
4. What is a waterborne disease?
5. What item (that you probably have in your home) could save the lives of people in the Himalayas?
6. Explain how good sanitation can help prevent disease.
7. What evidence is used that you think is reliable?
8. What evidence is used that you think may not come from an authoritative source?

HOMEWORK FOR LIFE!

NEVER share drinking containers (e.g. cups and bottles), and NEVER drink from what might be a contaminated water sources.

ACTIVITY: Cause and effect chains – explaining impacts

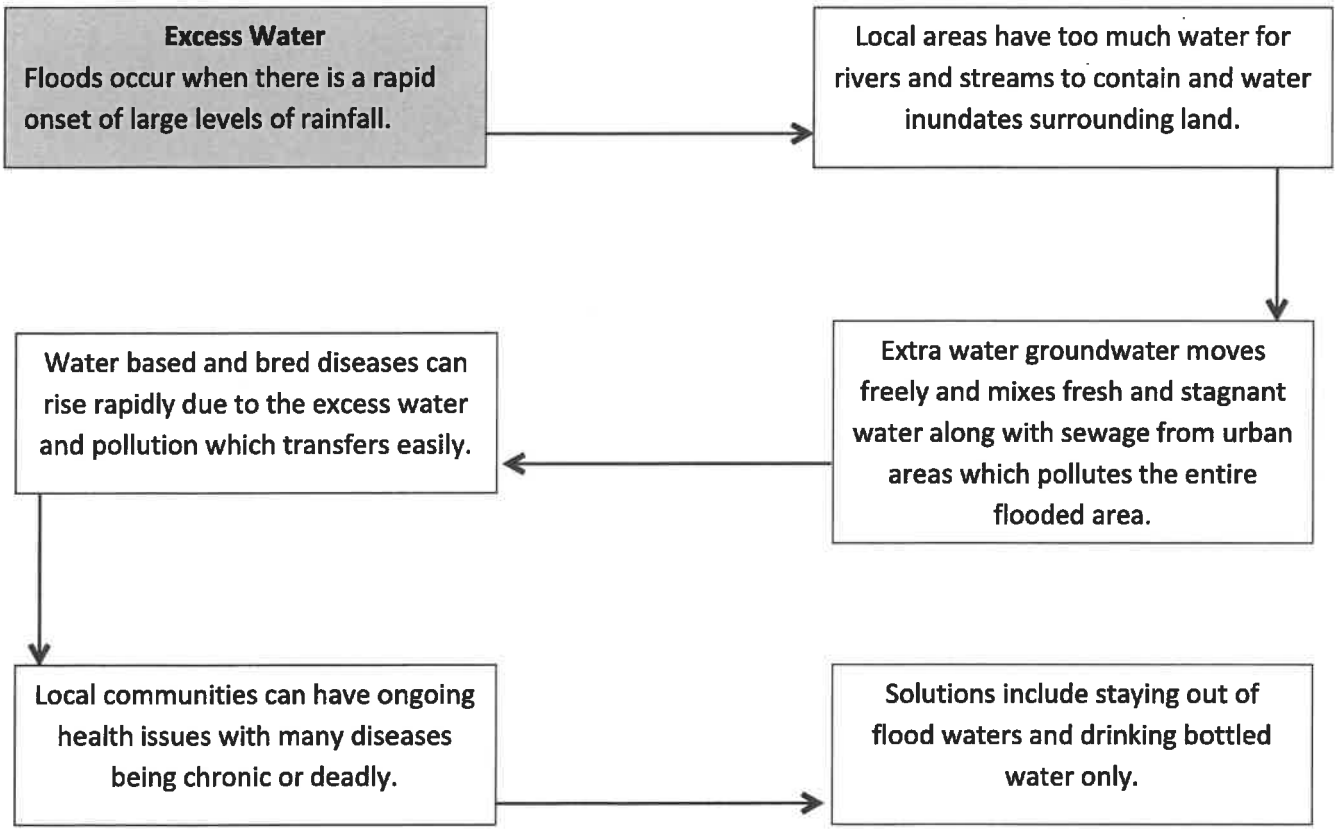
A cause and effect chain is a good way to visualise how ideas are connected to one another. This is a fundamental way of thinking in Geography – because everything is connected! in the sample cause and effect chain below you will see the negative impacts of having too much water in an area.

Between each of the ideas we should connect them with linking phrases. Your job is to write linking phrases in the spaces between the boxes so that each idea is connected to the next.

Linking phrases:

Leads to | results in | has the effect of | will cause | as a result | as a consequence

Thus | consequently | therefore | so | due to this



Do you think these ideas are in a logical or sequential pattern?

ACTIVITY: Use the information boxes in this page to create your own explanation to show the effects of having too little water in an area.

Remember:

- The ideas should be organised into a logical flow (what happens next?)
- There should be linking phrases to connect ideas

Water Scarcity
Droughts occur when there are long periods of below average rainfall leaving areas with very harsh conditions.

With water scare and unsafe to collect, people are unable to wash or drink regularly.

Dry conditions leave people without fresh water and drink dirty groundwater and can promote disease.

Solutions include washing faces regularly especially areas around the eyes, even with a lightly damp cloth.

Water borne diseases are concentrated in the limited groundwater supplies and many people may fight for the limited resources.

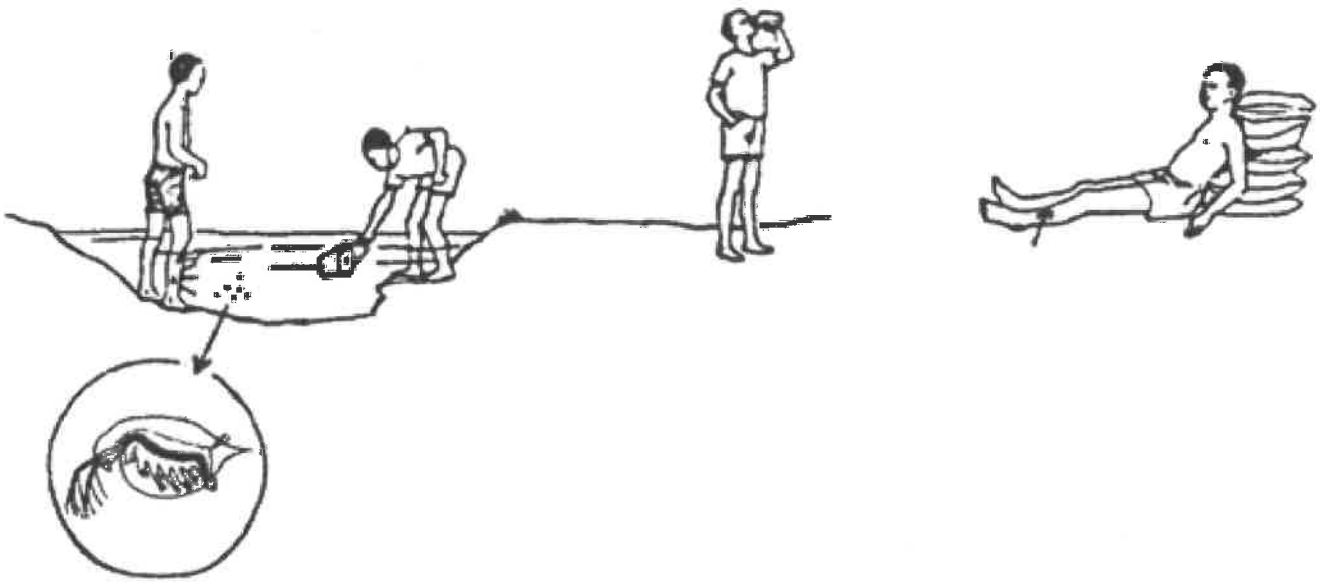
Diseases like Trachoma see people collect debris and dirt in their dry eyes and infections set in because they are unable to wash their faces.

Fighting and territorial control of water sources may lead to people not being able to access water for fear of safety.

ACTIVITY: Guinea worm effects and management

Watch the video on Guinea worm and then annotate the diagram below to reflect the stages in the lifecycle of the worm and effects on people.

https://www.youtube.com/watch?v=sOEuwhgohGM



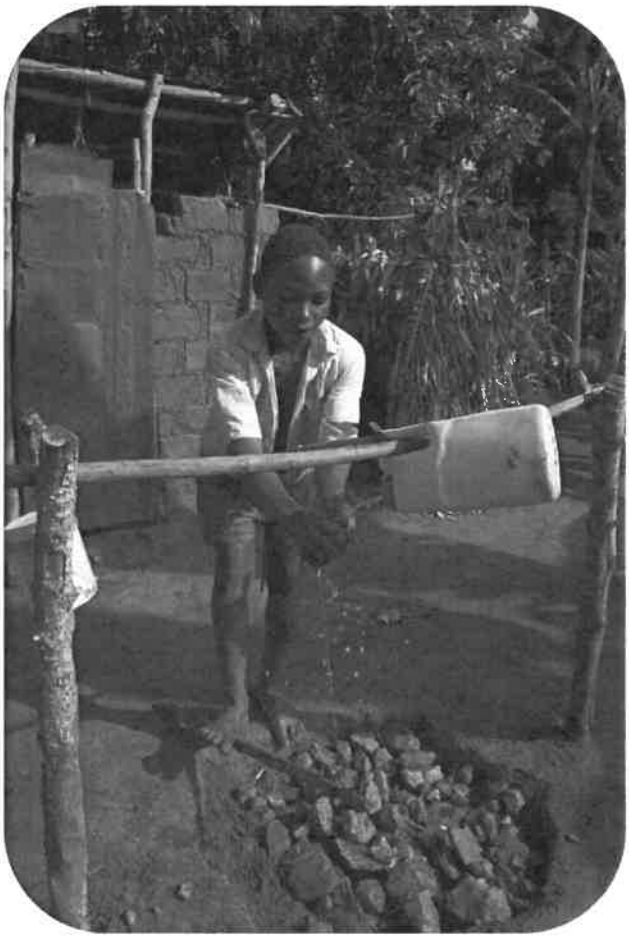
Organise the effects you know of and will research/discuss in class of the Guinea worm into these categories:

Social	Economic	Environmental

ACTIVITY: Self-help using the tippy tap

https://www.youtube.com/watch?v=Qdpd3roZjYw

MAKE A TIPPY TAP!!!!!!!!!!!!!



What is a Tippy-Tap?

In Uganda, families build a simple device called a Tippy-tap to wash their hands.

It consists of a container mounted on a simple frame. Water is tipped from the container by tapping a lever with your foot. That way, you can wash your hands without touching the stand when your hands are dirty!

The simple act of washing hands with soap and water can reduce diarrhoea by over 40 percent. This is important because diarrhoea kills 2.2 million people every year.

Here is one simple way to build a tippy-tap.

You will need:

- 4 long sticks (approx 1.2m)
- 2 shorter sticks (approx 90cm)
- Stones
- Screwdriver
- String
- 3L milk container

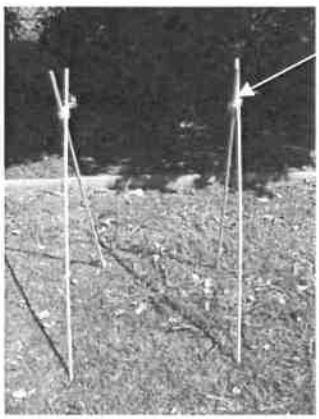
Step 1: Use a screwdriver to make 2 holes in the milk container. (You may need an adult to help.)

Make a hole here to let in air

Make a hole here to let out water

Step 2: Make the frame out of four long sticks.

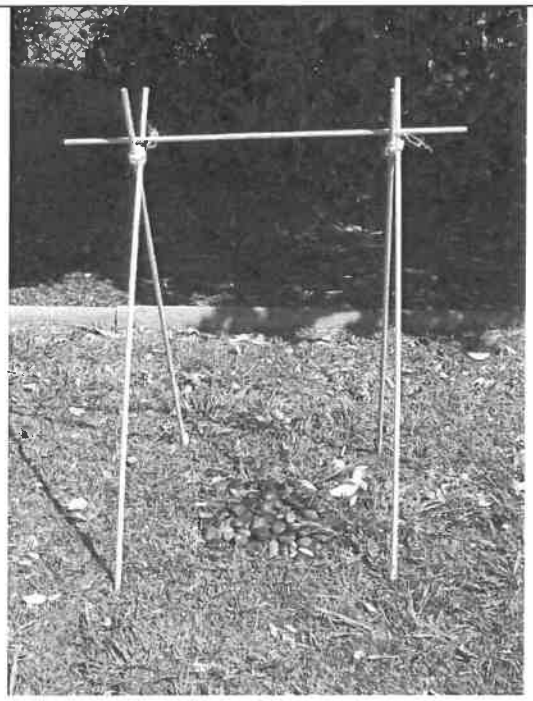
Push the sticks into the ground



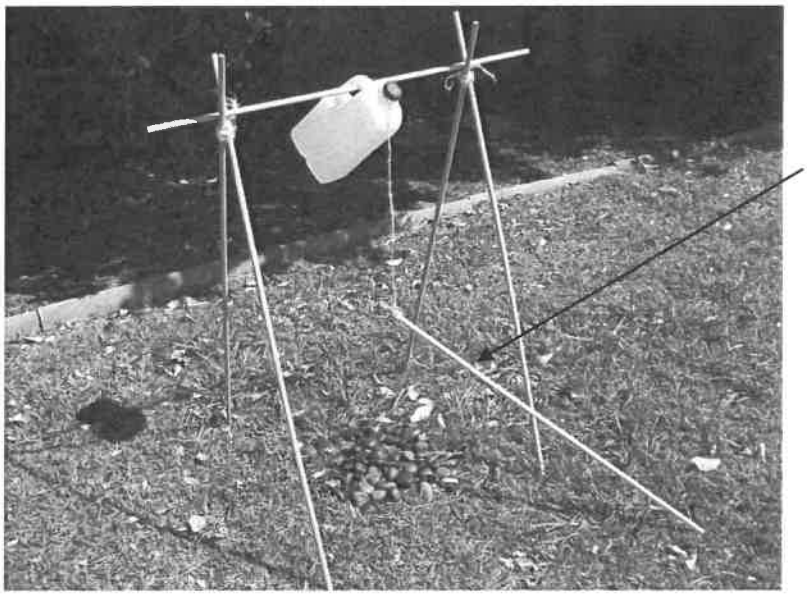
Tie the sticks together at the top with string

Step 3: Place stones in the middle to prevent puddles and one short stick on top.

Step 4: Tie a piece of string to one end of the second short stick. Then tie the other end of the string to the neck of the plastic bottle.



Step 5: Half fill the container with water and place the crossbar through the handle.



Now you are ready to wash your hands!

Change someone's attitude

Write a persuasive text the uses some of the following techniques to convince a person to buy/use a Life straw:

- Strong/high modality terms e.g. Must, Certainly, Undeniably
- Technical words e.g. microbiology
- Facts and Figures e.g. 99.999%
- A personal or emotive reason for using the product e.g. ensures health

LifeStraw®

by VESTERGAARD

Do you trust your drinking water?

LifeStraw® transforms microbiologically contaminated water into safe, clean drinking water. Perfect for camping, hiking, travel and emergency use.

- Chemical-free
- Filter water from any fresh water source*
- Microfiltration membrane technology to filter down to 0.2 microns
- Removes 99.9999% waterborne bacteria
- Removes 99.99% waterborne parasites
- Removes 99.999% waterborne viruses^
- Effective against waterborne diseases such as Escherichia coli (E.coli), Salmonella, Cryptosporidium parvum and Giardia lamblia
- Requires no power, batteries, plumbing
- Reduces turbidity (muddiness)

LifeStraw® Personal **LifeStraw® Go** **LifeStraw® Mission**

For more information about our great products visit:
www.jadavey.com.au/lifestraw

**Does not filter dissolved matter or heavy metals such as salt, iron, calcium or arsenic from water. ^Lifestraw Mission Only*

The value of water

Key questions

1. How is water valued by different groups of people?

ACTIVITY: Perspectives

Not everyone has the same point of view to you when it comes to water. Read through the different perspectives below and respond to the questions.

You are a young girl in a village in Niger. A few years ago there was no well in your village. You had to walk several kilometres twice a day to collect water from a river. You carried buckets of water home and then walked to school. All this just to get water to drink.

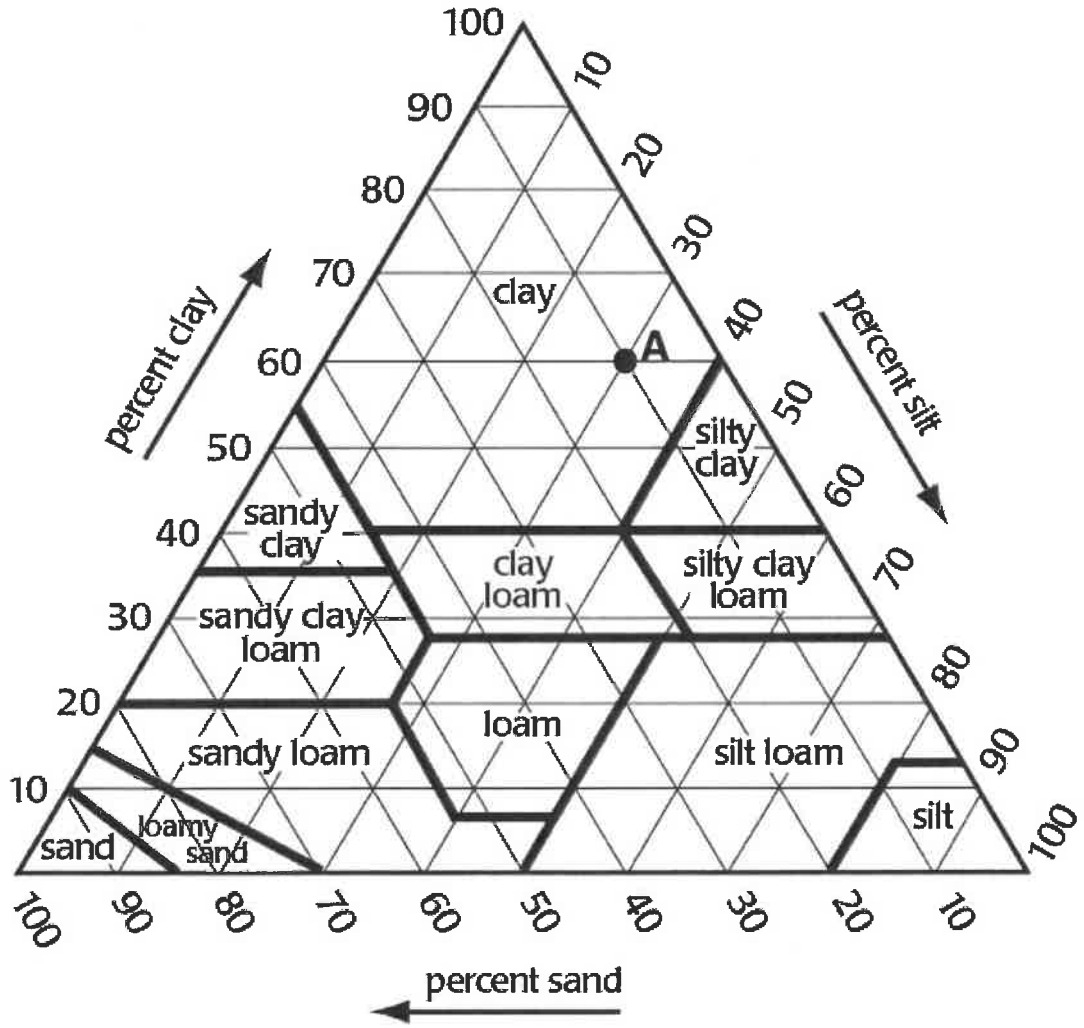
You are yourself – living in Australia. You have water whenever you want it. You groan when your parents remind you to wash your hands after going to the toilet and before eating. You have been learning at school about how kids elsewhere in the world get sick and sometimes die when they drink polluted water. You know that disease spreads quickly when people can't wash their hands with soap and water or use water to flush a toilet.

You are a farmer in Australia. You rely on water being pumped from a big dam to your farm. You have to pay the government to do this but it is worth it if your crops grow better and yield more to sell to the big supermarket that buys your vegetables. When water is scarce or costs too much to buy, you make less money. This makes it hard for your whole family.

1. What motivates each person to access water? Why do they want water?
2. Does each person have similar access to water?
3. Does anyone deserve water more than the others?
4. Summaries the perspective of each person.

ACTIVITY: Ternary graphs

Ternary graphs are a graph type which uses 3 axis instead of a regular two. They always graph 3 different variables which will add up to a total of 100. They are components of a total (100%) and therefore each of the 3 variables is a percentage of that total.



To start, you can read each axis on its own, and when you feel more confident you can read them at once. Start with the axis which has 10% close to you and 100% away from you. Which axis is that? _____

So you can read the clay axis really well at the moment if you use the base of the trinagle as 0 and use every line parallel to this for each 10% added. Highlight each parallel line for clay.

Can you use these parallel lines to work out the value of Point A? _____

The next step is to turn the ternary graph so that the next axis (with 10% towards you and 100% away) is able to be read and you can highlight the parallel lines in a different colour to help.

Mix of elements	Clay	Sand	Silt
Point A			

Does your total of all 3 variables add up to 100?

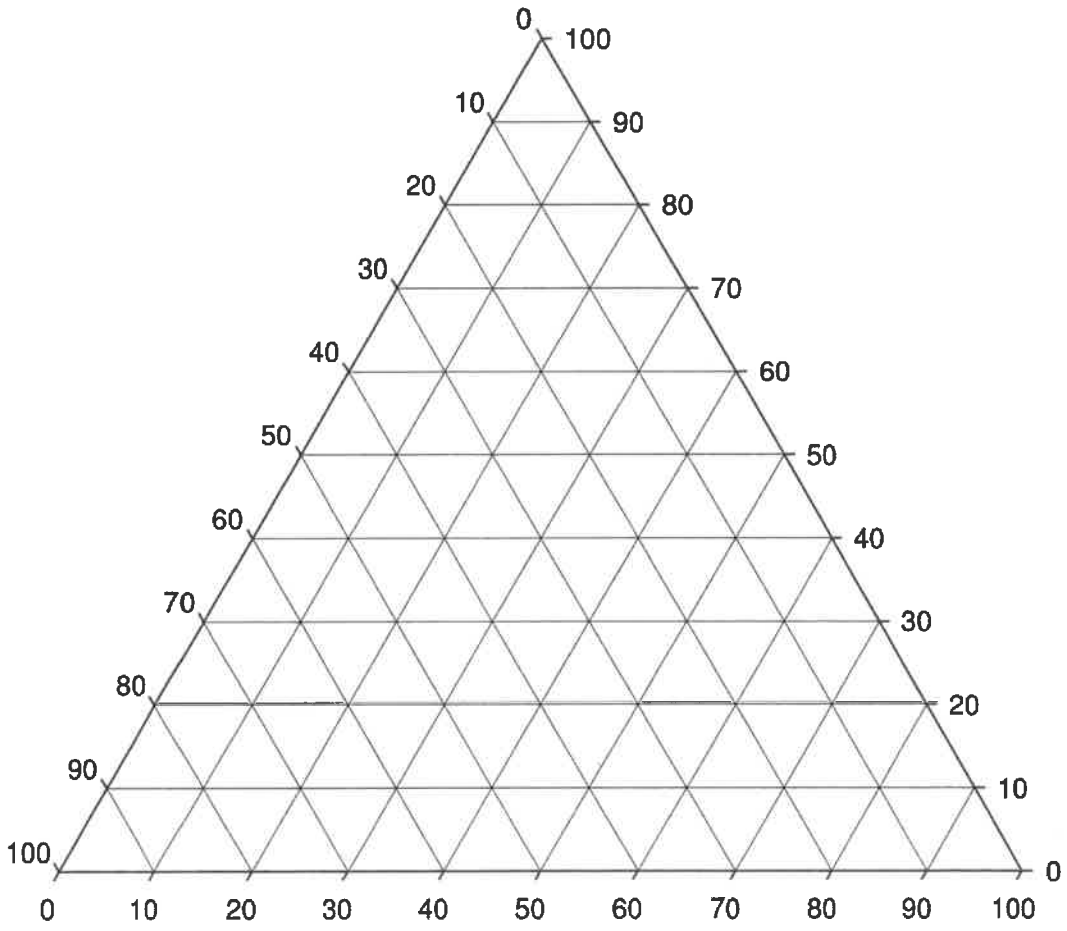
Water withdrawal

Water withdrawal is the amount of fresh water taken from a water source. The following information is about the water withdrawal from a range of countries and what the water is used for. This may give you some ideas of the value water has, the population size of a country and even the types of economic activity in that country.

http://www.fao.org/nr/water/aquastat/water_use/index.stm

Use FAO website to find data for the following countries:

Country	Industry	Domestic (municipalities)	Agriculture
Egypt	3%	11%	86%
Ghana	10%	24%	66%
India	2%	7%	91%
Japan	17%	19%	64%
China	23%	12%	65%
Cuba	11%	24%	75%
Jamaica			
Madagascar			
Qatar			
South Africa			
Thailand			



ACTIVITY: Aboriginal people and the value of water

Water is a universal need and has value to all people. Aboriginal and Torres Strait Islander peoples in Australia have connection to land and water which is called country. It informs their spirituality, identity and way of living within the environment.

The Anangu people come from Australia's central desert region around Uluru and Kata Tjuta. They live in some of Australia's driest places, however, have been living there for tens of thousands of years.

In the highlight box below is a list of aspects of the Anangu peoples lives.

1. Decide which of these is most important to Indigenous people when interacting with the environment.

Law (tjukurpa) **Water (kapi)** **Tools (puni)**

Meat (kuka) **Seeds and fruit (mai)**

Fire (waru) **Rock art (walka pulinga)** **Ceremony (inma)**

2. Write these down in you book or laptop and find or draw pictures which depict these elements.

ACTIVITY: Text comprehension (who is excited for NAPLAN?)

1.

Text Box 7: The Return of Lake Condah to the Gunditjmara

On 30 March 2008, in accordance with the native title consent determination, the Victorian Government returned the heritage-listed Lake Condah to the Gunditjmara traditional owners.

In 1869, an Aboriginal Reserve was declared over 2,034 acres at Lake Condah. The formal handover is planned for later this year. The lake titles are to be vested with Gunditj Mirring, the registered native title body for the Gunditjmara people.

Lake Condah is considered to be one of Australia's earliest and largest aquaculture ventures. The Gunditjmara people's aspirations include the preservation of their culture while engaging in tourism, water restoration and sustainability projects. The Lake Condah Sustainable Development Project will re-flood the lake, restoring the wetland ecology and a constant water supply.[117]

While the restoration of permanent water to Lake Condah has progressed well,[118] the Gunditjmara are particularly concerned about the 'potential of continuing extinguishment of recognised native title over crown land through public works.'[119]

Native title refers to which of the following?

a. Land and water taken from Aboriginal people
b. Land and water of Aboriginal people
c. Land and water returned to Aboriginal people
d. Land and water not belonging to Aboriginal people

2. What does "determination" mean?

3. Is the author of the text a Gunditjmara person?

4. What does "aspirations" mean?

5. How will the Ginditjmara people use Lake Condah?

6. What is meant by using the term extinguishment?

Natural Hazard

Key questions

1. What causes water related natural hazards to occur?
2. How do individuals and governments respond and manage the issue?

ACTIVITY: evaluating websites and other sources

Not all websites are going to be useful for you to use when researching for Geography. Below is a list of things to look out for to help you decide if a website is worth using developed by Dalhousie University.

1. AUTHORITY Authority reveals that the person, institution or agency responsible for a site has the qualifications and knowledge to do so. Evaluating a web site for authority: • Authorship: It should be clear who developed the site. • Contact information should be clearly provided • Credentials: the author should state qualifications, credentials, or personal background that gives them authority to present information.	**2. PURPOSE** The purpose of the information presented in the site should be clear. Some sites are meant to inform, persuade, state an opinion, entertain, or parody something or someone. Evaluating a web site for purpose: • Does the content support the purpose of the site? • Is the information geared to a specific audience (students, scholars, general reader)? • Are the outside links appropriate for the site? • Check the domain of the site. The URL may indicate its purpose. (org, gov, edu)

3. COVERAGE
It is difficult to assess the extent of coverage since depth in a site, through the use of links, can be infinite. One author may claim comprehensive coverage of a topic while another may cover just one aspect of a topic. Evaluating a web site for coverage:
• Does the site claim to be selective or comprehensive?
• Are the topics explored in depth?
• Compare the value of the site's information compared to other similar sites.
• Does the site provide information with no relevant outside links?
	4. CURRENCY
	Currency of the site refers to: 1) how current the information presented is, and 2) how often the site is updated or maintained. It is important to know when a site was created, when it was last updated, and if all of the links are current. Evaluating a web site for currency involves finding the date information was:
	• first written
	• placed on the web
	• last revised
	• Then ask if:
	  • Links are up-to-date
	  • Links provided should be reliable.

5. OBJECTIVITY Objectivity of the site should be clear. Beware of sites that contain bias or do not admit its bias freely. Objective sites present information with a minimum of bias. Evaluating a web site for objectivity: • Is the information presented with a particular bias, or point of view? • Does the information try to sway the audience? • Does site advertising conflict with the content? • Is the site trying to explain, inform, persuade, or sell something?	**6. ACCURACY** There are few standards to verify the accuracy of information on the web. It is the responsibility of the reader to assess the information presented. Evaluating a web site for accuracy: • References: do statistics and other factual information receive proper references as to their origin? • Is the information comparable to other sites on the same topic? • Does the text follow basic rules of grammar, spelling and composition? • Is a bibliography or reference list included?

ACTIVITY: evaluating websites and other sources continued

Use the areas of evaluation to evaluate the following sites:

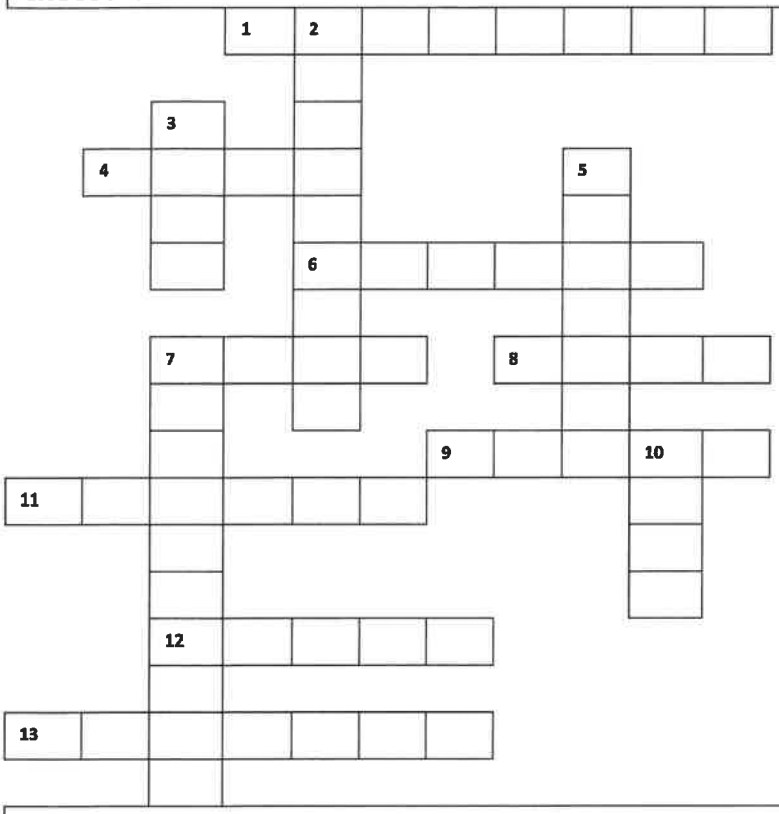
https://naturaldisasterprep.weebly.com/floods.html

http://www.dartmouth.edu/~floods/archiveatlas/

For each website respond to the questions related to the areas of evaluation and make a judgement to the more reliable source of information.

1. AUTHORITY • Who are the authors and do they seem to have authority (expert knowledge) of the topics? Website 1 Website 2	**2. PURPOSE** • Is the information clear and who is the target audience? Website 1 Website 2
3. COVERAGE • Is there a depth if information or only shallow/selective information? Website 1 Website 2	**4. CURRENCY** • How current is the information? Can you tell? Website 1 Website 2
5. OBJECTIVITY • Is the information objective or persuasive? Website 1 Website 2	**6. ACCURACY** • Do you know if the information is accurate based on further research? What sources do they use? Website 1 Website 2

CROSSWORD – WATER IN THE WORLD



CLUES

Across

1. Many people do not have safe _____ water which all people need to survive (D)
4. You should always try to _____ water by having shorter showers (S)
6. People's ability to _____ water can be hard because of where they live; the name of this topic (A)
7. Most of the world's water contains _____ so it is not suitable to drink (S)
8. _____ the number of children which die each year from water related illness can be saved by simple measures (H)
9. Less than 3% of the world's water is ____ (F)
11. Wear shoes in the water in some African countries so _____ worms don't burrow into your feet (G)
12. A good way to reduce water when washing your hands is to use a _____ Tap (T)
13. Long periods with below average rainfall are called _____(D)

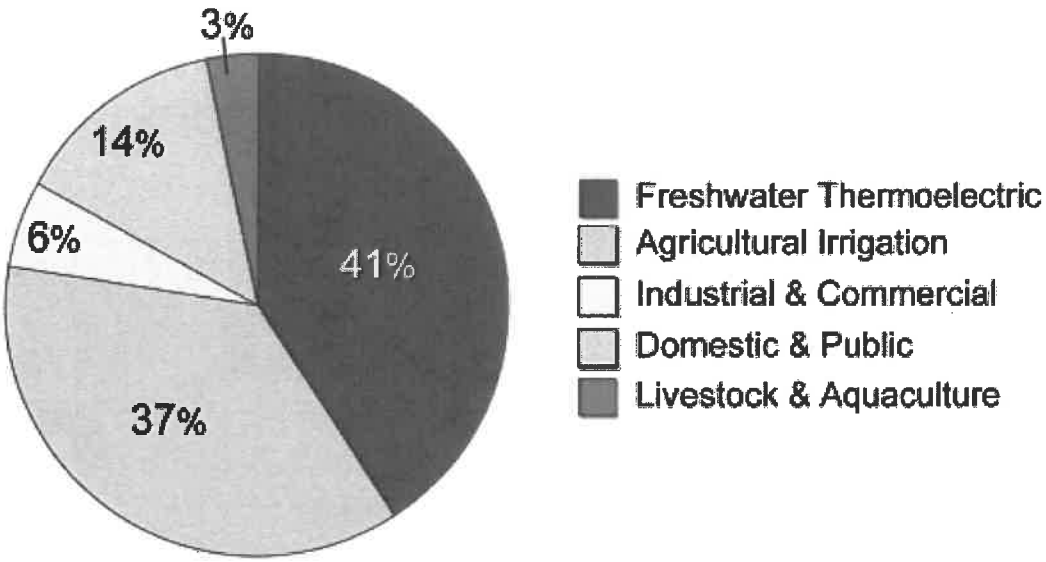
Down

2. Water is a _____ resource, however, humans degrade it through mismanagement (R)
3. _____ your hands after going to the toilet so you don't pass on the millions of bacteria found in your poo (W)
5. Water that comes from a still or open water source is more likely to breed _____(D)
7. The removal and treatment of waste is called _____ (S)
10. When washing you should use _____ to clean your hands properly (S)

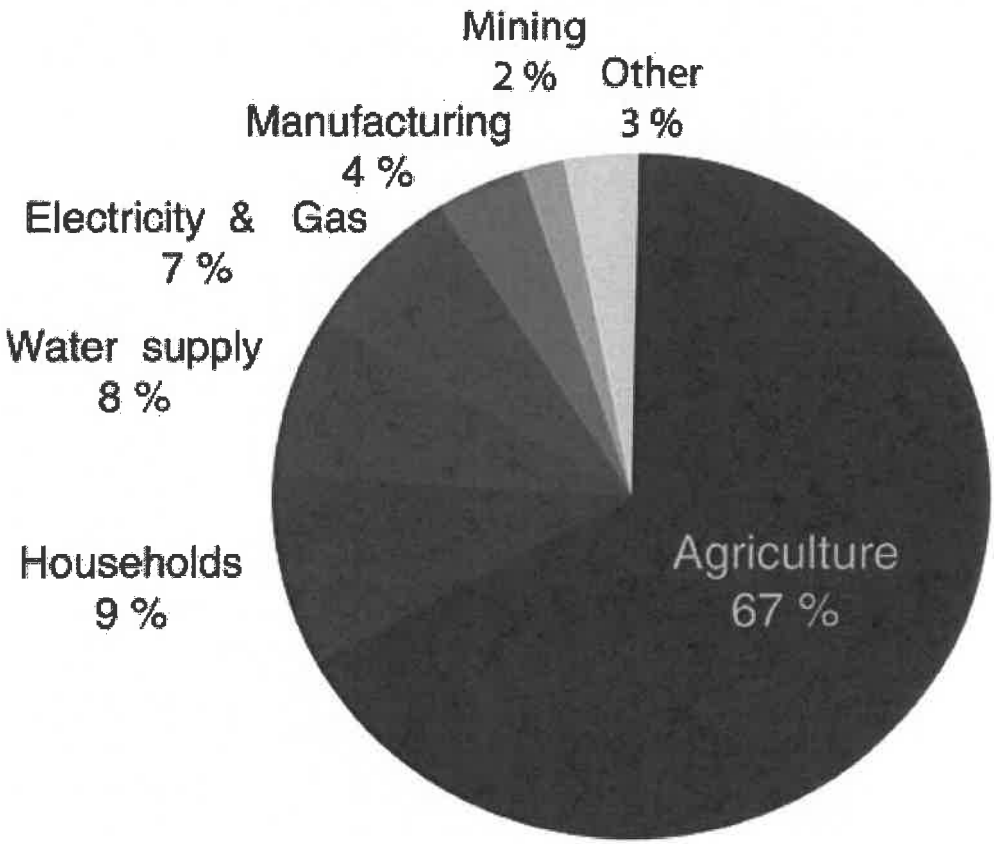
Areas of physical and economic water scarcity

Country	Industry	Domestic (municipalities)	Agriculture
Egypt	3%	11%	86%
Ghana	10%	24%	66%
India	2%	7%	91%
Japan	17%	19%	64%
China	23%	12%	65%
Cuba	11%	24%	75%
Jamaica	9%	35%	56%
Madagascar	1%	3%	96%
Qatar	2%	39%	59%
South Africa	10%	27%	63%
Thailand	5%	5%	90%

Freshwater Withdrawals by Sector



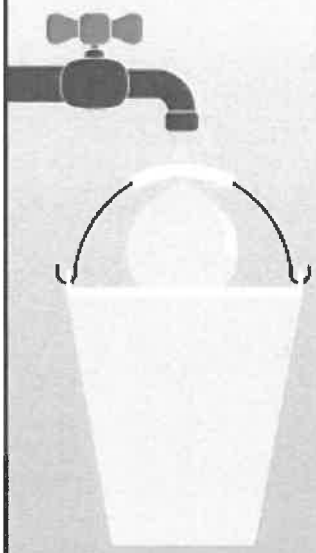
Water use in the world (2010)



WATER USE AROUND THE WORLD

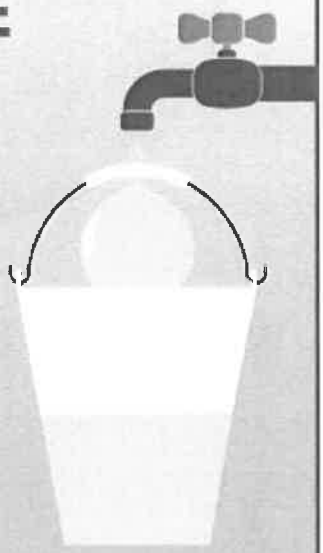
The U.S. uses a large amount of water each day compared to other countries.

AVERAGE PERSON IN U.S



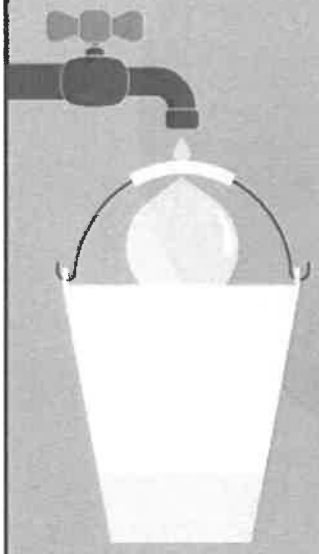
156
GALLONS A DAY

AVERAGE PERSON IN FRANCE



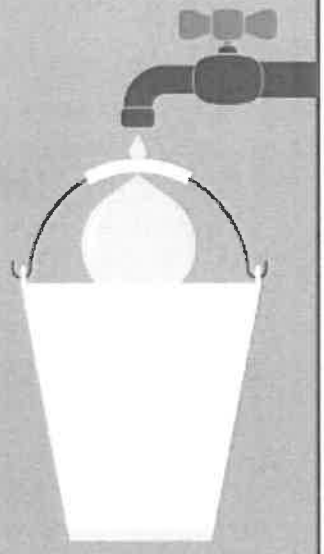
77
GALLONS A DAY

AVERAGE PERSON IN INDIA



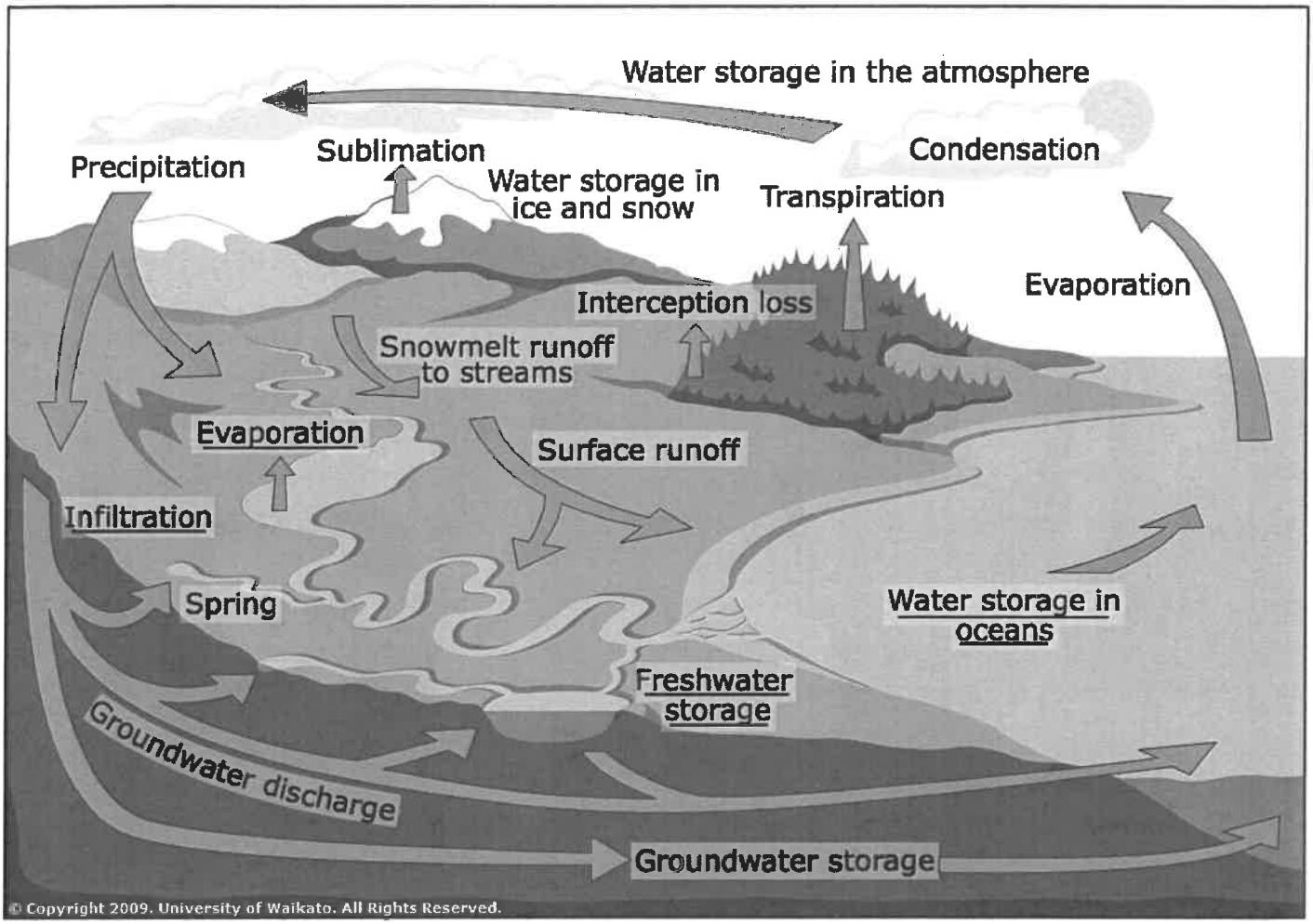
38
GALLONS A DAY

AVERAGE PERSON IN MALI



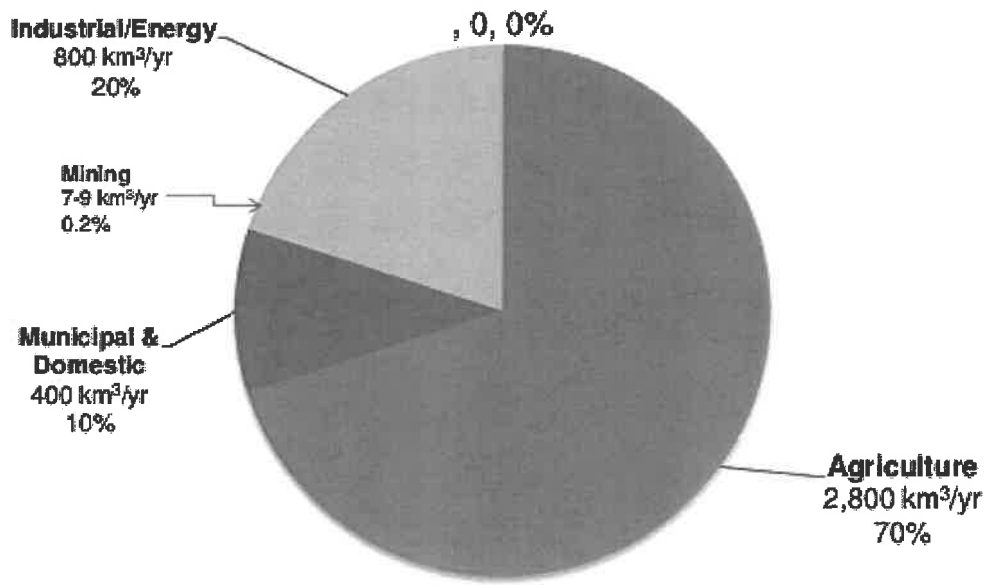
3
GALLONS A DAY

Source: http://www.unwater.org/downloads/Water_facts_and_trends.pdf



Global Fresh Water Withdrawals

Total global withdrawal approx 4,000 km³/yr in 2010



HATCH™

01 2012

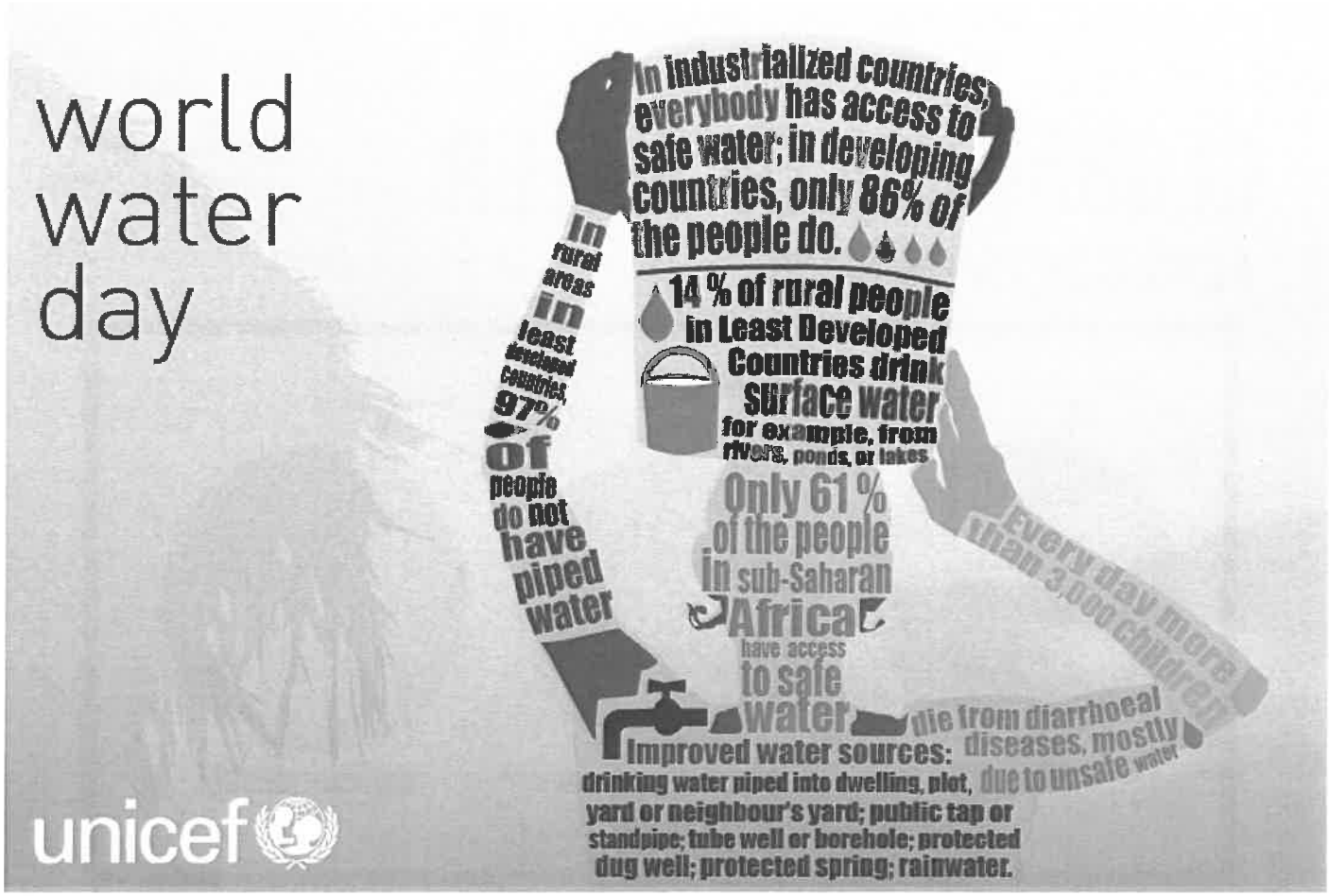
A SHOWER OF **SAVINGS**

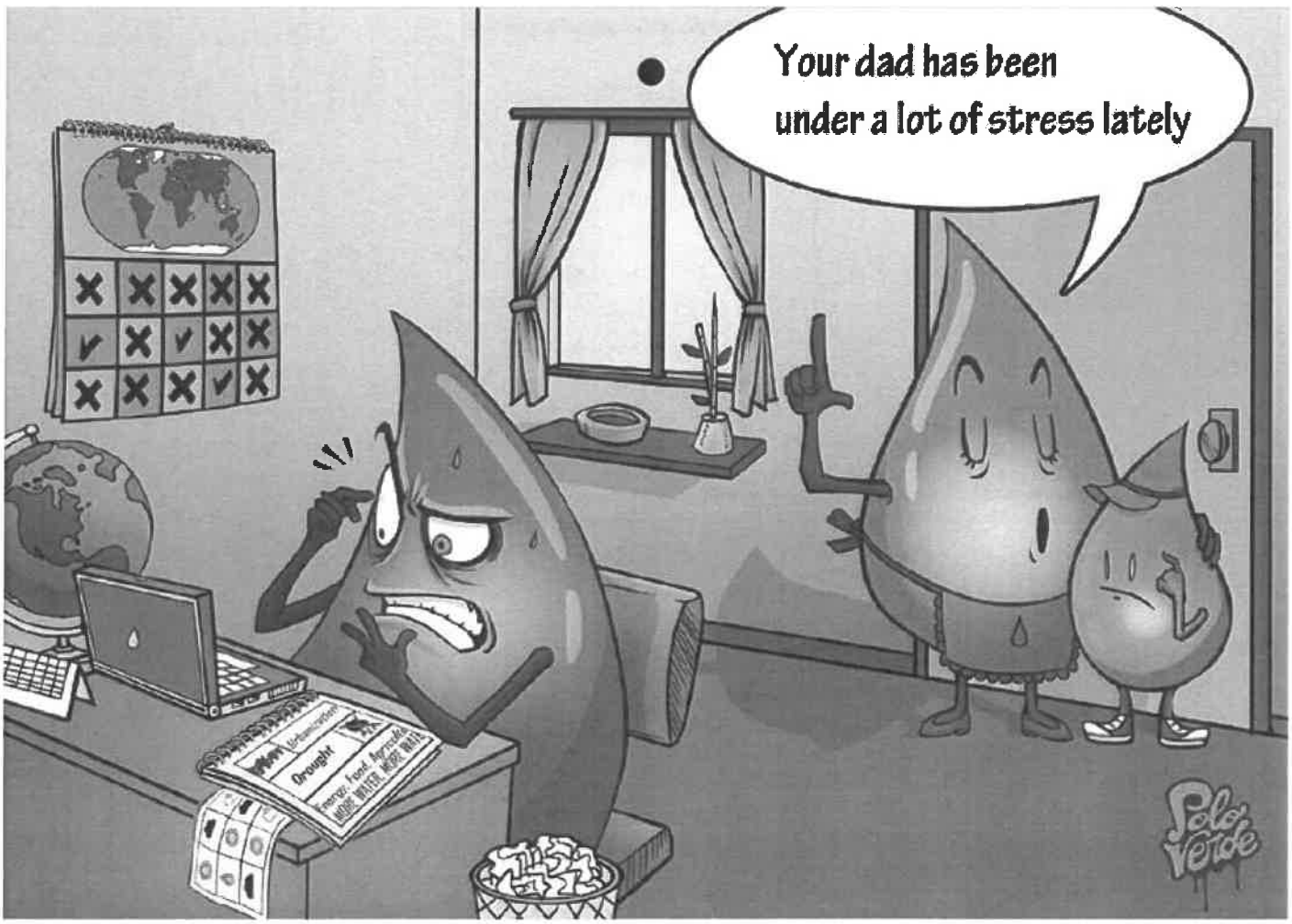
Installing WaterSense labeled showerheads just adds up!

Why waste...

2,900 GALLONS of water + **13 DAYS of energy to power your home** + **$70 per YEAR**

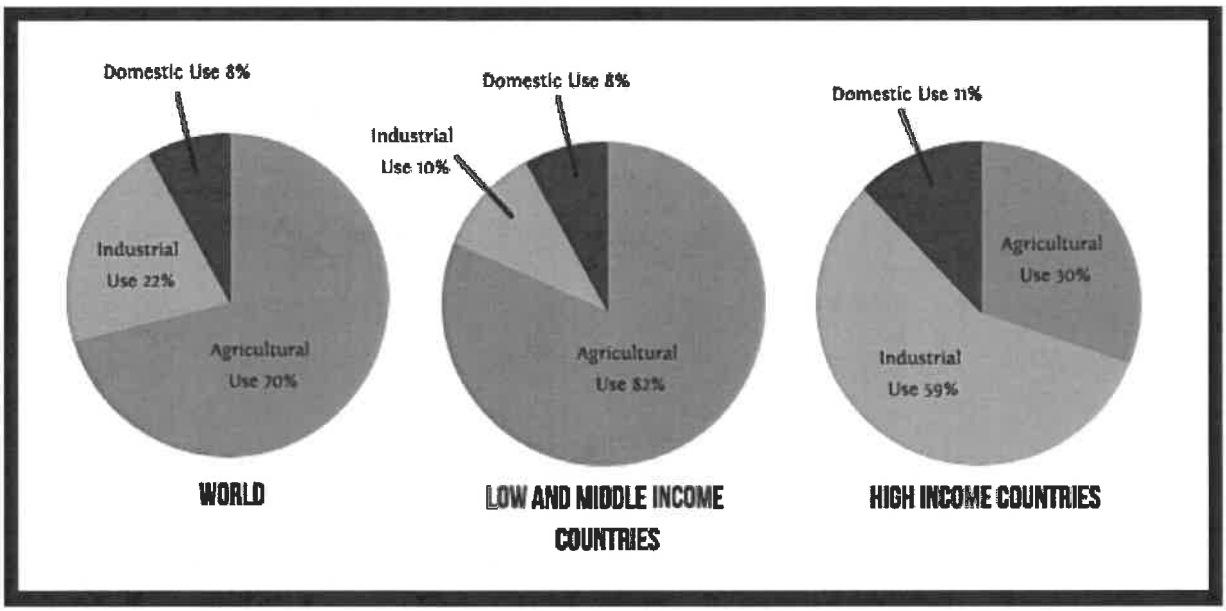
ShowerBetter


world water day
In industrialized countries, everybody has access to safe water; in developing countries, only 86% of the people do.
In rural areas in least developed countries, 97% of people do not have piped water
14 % of rural people in Least Developed Countries drink surface water
for example, from rivers, ponds, or lakes
Only 61 % of the people in sub-Saharan Africa have access to safe water
Every day more than 3,000 children die from diarrhoeal diseases, mostly due to unsafe water
Improved water sources:
drinking water piped into dwelling, plot, yard or neighbour's yard; public tap or standpipe; tube well or borehole; protected dug well; protected spring; rainwater.
unicef


Your dad has been under a lot of stress lately
Drought
Solo Verde

GLOBAL USE OF WATER

ACROSS INCOME GROUPS



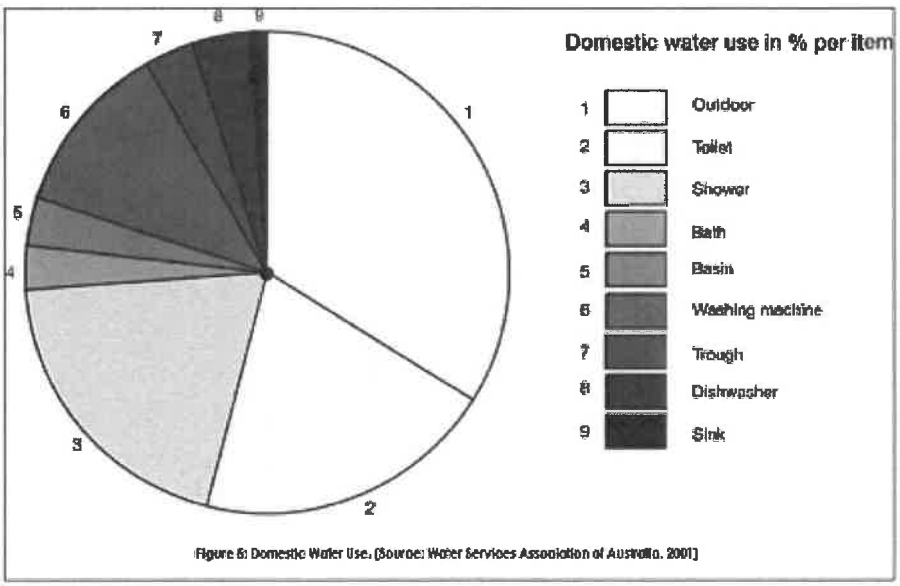
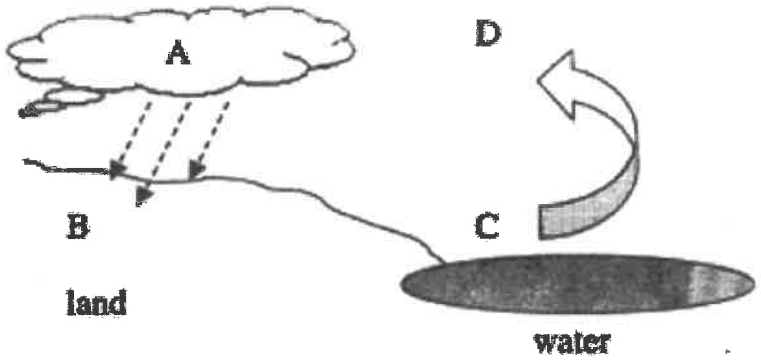


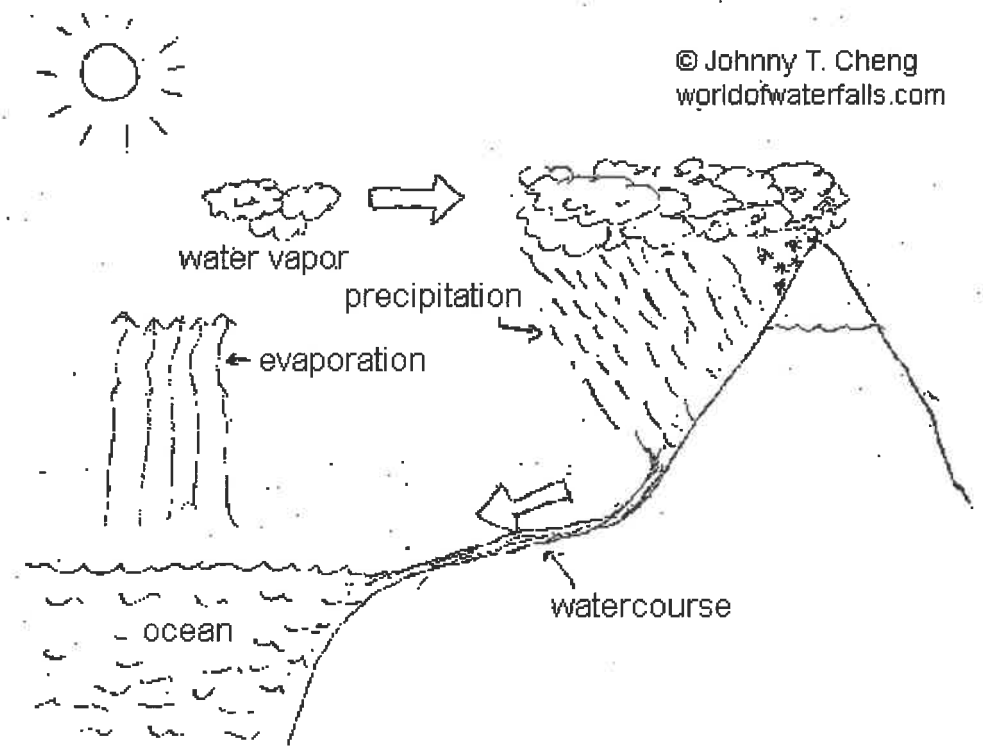
Figure 6: Domestic Water Use. (Source: Water Services Association of Australia. 2001)

2) Use this model of the water cycle to answer the question.



Where is precipitation occurring?

A. from D to A
B. from C to D
C. from B to C
D. from A to B



Water only schools

Goulburn Valley Water

This case study showcases

water businesses delivering more than just water and sewerage provision

Problem

Many parts of Australia, and particularly regional cities and towns, have a high incidence of health issues relating to obesity and other lifestyle diseases. High consumption of sugary drinks is a strong contributing factor and is associated with an increased risk of developing Type 2 diabetes, weight gain and obesity, as well as poor dental health. Lack of adequate hydration is also increasingly being linked to decreased cognitive function in children. Many communities lack education on the detrimental health effects of sugary drinks. Tap water is a healthy, hydrating and cheap alternative to soft drinks and other sugary drinks.

Solution

Active programs are offered in the Goulburn Valley and Barwon regions to engage schools in the benefit of drinking tap water.

Goulburn Valley Water's 'Water Only Schools' Program is offered to schools in the local community, where students are only allowed to drink water and plain milk at schools. Students are not able to bring in other drinks into school or buy any other drinks. Goulburn Valley Water have also engaged local health organisations to assist in delivering a community education program which promotes the health, financial and environmental benefits of choosing tap water. While the program mainly targets students, staff and parents are also engaged through newsletters and other collateral.

Success in the Water Only Schools to has raised its profile of the program and a number of workplaces are now keen to be involved. 'Water Only Workplaces' launched in June 2016 with a number of local indigenous community service groups, for example the Rumbalara Aboriginal Co-operative which provides a range of support services for indigenous communities such as health and cultural activities. The program is also looking to expand into early childhood education.

Business case

The program is run at a very low cost to GVW, with some staff time and giveaways such as water bottles required during launch activities, but very little upkeep thereafter.

Key drivers

The initial idea for the 'Water Only Schools' program came from Barwon Water, who has been partnering Barwon Health on a similar program, H2Only, in Geelong. Developing a 'Water Only' program complimented Goulburn Valley Water's comprehensive education program. Goulburn Valley Water has taken the role of the lead agent (which in the Barwon region has been led by the health agency) and engaged local health organisations to partner and deliver the project. The program also complements the 'Be Smart – Choose Tap' campaign which has been developed by Yarra Valley Water to create a strong and united 'brand' for tap water.

Benefit/outcome

- Improved health, financial and environmental outcomes of the community through promotion of tap water
- Improved partnerships between Goulburn Valley Water and community, as well as local health organisations.
- Reputational benefits