



Glen Helen Gorge, NT

The Great NT Water Story **Teacher Guide**

PowerWater



Kakadu National Park, NT

To the Superstar NT Teacher,

Congratulations! You are taking part in a truly special learning experience.

For us Territorians, water is the essential ingredient to every aspect of life. Water has shaped the unique landscape and the culture of the NT for hundreds of thousands of years and continues to be critical today.

However, our current rate of water consumption in many parts of the NT is not sustainable.

On average, Territorians use twice the water per capita than the rest of Australia.

During 2018 National Water Week, Power and Water Corporation is leading a Territory wide campaign to raise the profile of water and empower students to take an active role in being water smart.

This teacher guide is designed to facilitate The Great NT Water Story, which helps primary school students in schools all across the NT develop their own personal water storybook. The Great NT Water Story explores how water has shaped the lives of people in our communities in traditional culture through to present day, before making a commitment to the future in the form of a pledge.

The teacher guide is not prescriptive. It provides a range of suggested learning experiences that will give students the knowledge to populate their storybook.

The storybook can be completed individually, in pairs, small groups or as a whole class. All activities are designed to cater for learners of differing abilities and their work can be displayed in the written form, visually or both.

We strongly encourage teachers to work in the students' first language where applicable. We recommend collaborating with Aboriginal Assistant Teachers and connecting with the Cultural Strand of the Indigenous Language and Culture Curriculum.

We ask that you save all of the students work and submit copies to Power and Water. Power and Water will compile these with the stories from across the NT and also award prizes for the best story and art work.

Thank you for your ongoing support.

Power and Water Corporation

Content

04 **Session 1**
Using water every
day and in every way

14 **Session 4**
Water, the heart
of our culture

07 **Session 2**
Traditional water use

16 **Session 5**
The pledge

11 **Session 3**
Our water supply today

20 **Appendix**
One and two

Using water every day and in every way

In short

This lesson is designed to open the students' minds to the critical nature of water in our everyday lives. It involves a personal reflection on water use and a focus on individual accountability for being water smart.

Students will:

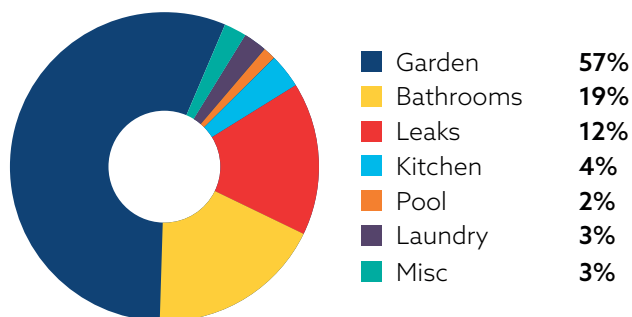
- reflect on the areas around the home and at school that use water
- explore the times they use water throughout the day
- identify areas of water waste
- create a personal story or visual representation that shows the critical nature of water to their everyday lives.

Guiding Question: How do we use and waste water every day?

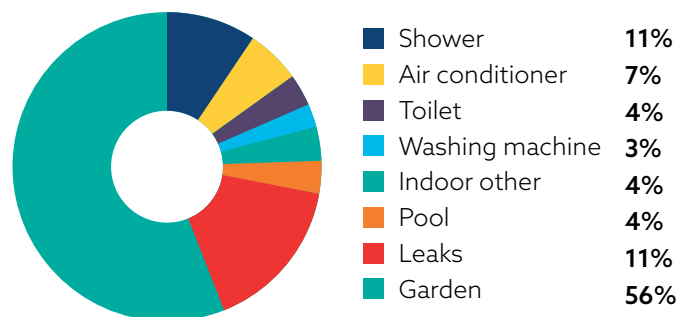
Teacher background information

Average household water use:

Average water use in Darwin



Average water use in Alice Springs



Common water uses:

Inside:

- Shower
- Baths
- Toilets
- Drinking
- Washing hands
- Dishwashing
- Brushing teeth
- Cooling
- Cleaning
- Laundry
- Cooking
- Leaks

Outside:

- Irrigation - watering lawns, gardens, trees
- Water for pets
- Farms, including fruit, veg and animals
- Recreation
- Cleaning
- Swimming pools and spas
- Ponds
- Other natural water bodies - boating, camping, fishing

Suggested learning experiences

1) Mindmap

Pose and discuss the following questions with students:

- Where do we use water every day?
- How many different ways do we use water every day?
- Do you or your family waste water?

Hand out the student mindmap (Appendix 1) and outline the task. Encourage students to list as many as they can in each area. Allow students to work in pairs if applicable. Allow 10-15 minutes for the tasks.

Share and reflect with the group, highlighting areas that may have been missed or surprised members of the class.

2) Timeline

Pose and discuss the following questions with students:

- How many times do you use water in a typical school day?
- When is the first time you use water in a day? When is the last?
For example, when do you use the toilet? When do you water the garden?

As a class, discuss the following periods of the day and how you use water at these times:

- Before school
- At school
- In the afternoon after school
- In the evening

Have the students look at the worksheet in Appendix 1. Students to individually list and number the times each day when they use water in a typical day. Allow 5 minutes for students to work individually before regaining whole class attention. As a group, discuss who had the most number of uses listed for the day, which ones were most surprising.

For teacher context, consider the following.

Before school	At school	After school	Evening
Flush toilet	Flush toilet	Have a drink	Help wash and cook food
Wash hands	Wash hands	Help water garden	Help wash crockery or stack the dishwasher
Have a drink	Drink from bubbler	Swim in the pool	Water pets
Shower or bath	Wash paint brushes	Help wash the car or dog	Clean teeth
Water for pets			Shower or bath

Storybook tasks

1) My story

Using the notes from the previous learning experiences, mindmap and timeline, invite the students to complete section one in the storybook. Students should write between two to four sentences that summarise where we use water in our everyday lives and where we waste water.

Consider offering the following sentence starters:

You would be amazed at the number of places we use water every day, just consider around the house, in the yard and at school. We often take our water for granted, until you think of the number of times each day you use water.

2) Visual representation

Ask students to reflect on their timeline task and choose a scene where there is more than one water use taking place at once. For example, at dinner time at home with water being used for cleaning, cooking, drinking and in the yard for watering plants.

Invite students to draw this scene.



Traditional water use

In short

This lesson is designed to allow students to actively research the cultural significance and traditional water practices in their area. It involves a location based reflection on the sustainability lessons we can take from the past.

Students will:

- actively investigate traditional water use in their area
- inquire about the traditional local stories around water
- learn about how accessing water shaped everyday life in the past
- create a story and/or visual representation of their learning
- learn how precious water was

Guiding Question: How did water shape traditional culture in my area?



Suggested learning experiences

1) Prior knowledge

Traditional knowledge on water was very strong in the past and in many parts of the Territory, continues to be very strong today. This task should be handled with appropriate cultural sensitivity, which may change depending on your location.

Pose and discuss the following questions with students:

- How important is water in our area?
- Is traditional water use in this area different from today's?
- Where are the traditional local water sources?
- Are there any Indigenous water stories about this area?
- Who can we contact to find out more information?

If any students hold an in depth knowledge, consider documenting this or interviewing them as a class.

2) Local expertise - an interview

Where possible, attempt to access a local expert. This can be a parent, local elder, a park or sea ranger or a representative of the local Indigenous Association. Once you have found the appropriate person, invite them into the school for an interview.

Prior to the interview, have students prepare a list of questions to ask under the following areas:

- Traditional water use: supply, lifestyle, movement and storage of water
- Traditional customs and stories involving water use in the region
- Sustainability: How do/did local indigenous people promote sustainable water use?

After conducting the interview, reflect and record with the class what the main learnings were in each of the above categories.

3) Sources of water

Teacher information: Water sources: rainwater, waterholes, springs, soakage, creeks, rivers, rockholes, trees and plants that hold water.

Lead a whole class discussion based on the following questions and allow research if required.

- What are the sources of fresh water?
- What are the differences between these water sources?
- What are each used for besides drinking water? E.g. fishing, attracting animals for hunting
- Which of these are found locally?
- Can anyone create a map to show where to find water in the immediate local community?
- How do people move and store water from these water sources, today and in the past?



4) Indigenous calendar

Teacher information:

www.youtube.com/watch?v=jkQleCoq4sM

www.youtube.com/watch?v=V4cS0-0Q2MU

www.csiro.au/en/Research/Environment/Land-management/Indigenous/Indigenous-calendars

- Discuss when it rains the most and how this influences the environment, e.g. trees and animals
- Display local calendar from the CSIRO site above
- Discuss the accuracy with students. What have they missed? What surprises them?

5) Online research

If you are unable to access local expert for an interview, consider having students undertake online research and record their findings.

It is suggested that teachers scaffold the students searches to include the following:

- Traditional water use in (LOCATION)
- Traditional water supply in (LOCATION)
- Traditional water customs in (LOCATION)
- Traditional water stories in (LOCATION)
- Water sustainability practices in (LOCATION)

Following this task, it is crucial for the whole class to reflect on their findings and for students to record the learnings of others in the class.

Storybook tasks

1) My Story

As a group complete the first three boxes together.

I live in:

This is the traditional land of which people?

The local word for water is:

Using the notes from the previous learning experiences, invite the students to add an additional 2-4 sentences that summarise how water shaped traditional culture in their area.

Consider offering the following sentence starters:

- Water shaped every aspect of life, including...
- People in this area believed...
- We could learn a lot from the way the elders use water in our area, for example...
- Water was precious in this area...

2) Visual representation

Ask students to reflect on their learnings on the traditional water use in their area. What was the most surprising or interesting thing they learned?

Invite students to create a visual representation of this learning. It could be a drawing, painting, photograph or short video.

Our water supply today

In short

This session is designed to explore how we access water in our local area today, a process that is often taken for granted.

Students will:

- hypothesise how the water in our area moves from 'cloud to cup'
- investigate where our local supply comes from, how it is treated and what makes it unique

Guiding Question: Where does our water come from today and how do we use it?

Kings Canyon, NT



Suggested learning experiences

1) Creating a hypothesis

Introduce the word 'hypothesis', asking if any students know what it means?

Explain that a hypothesis is: A prediction or explanation based on limited evidence that allows for further investigation. For example, if you planted two trees in different locations at your house and one grew quicker than the other, your hypothesis may be that one plant gets more water than the other.

Ask students to think of times they use hypotheses in their everyday lives.

Distribute Appendix 2 'From cloud to cup'. Inform students that this task will require them to create a number of hypotheses to answer some questions. They will then get the opportunity to test their ideas and thoughts with the experts.

Discuss the four questions on the worksheet, welcoming students to share their hypotheses and encouraging them to justify why they believe this. Explain that students will soon get an opportunity to test their predictions with experts.

If any students hold an in depth knowledge, consider documenting this or interviewing them as a class.

2) Testing the hypothesis: From cloud to cup

Power and Water Corporation provides the essential water supply to Territorians. They are committed to working with local communities to ensure they have the best water supply possible. For this activity, to test our hypotheses and learn more about the local water supply, we suggest making direct contact with Power and Water. Below is a script that can be used for any phone or email contact. This is best done as a whole class activity and can be a terrific learning experience about communication.

If you do not know your local Power and Water contact, please feel free to contact info@livingwatersmart.com.au and we will get in contact with you as soon as possible.

Hello,

*I am making contact from Year _____ at _____ Primary School.
As a part of National Water Week in 2018, we are investigating our local water story. At the moment,
we are trying to figure out how the water in _____ moves from 'cloud to cup'.*

We have a number of questions we are hoping that you can answer:

- *Where is our water stored?*
- *How does it get there when it rains?*
- *Do we use groundwater in this area?*
- *How is our water treated so it is ok for human consumption?*

We would be very keen to chat with you further about this as soon as possible. Can you please respond with the answers in email or give the school a call when you have a chance?

Thank you in advance

Suggested learning experiences

3) My Story

As a group discuss the introduction to the next section of The Great NT Water Story. Focus on the points that were completed in the hypotheses and research activities and reflect on which discoveries were most interesting and unique to the local area.

These days we get our water from:

The process of getting the water 'From cloud to cup' is a very interesting one.

In my local area...

Invite students to write two to four sentences about the local water process using the notes from the previous activities.

4) Visual representation

Invite students to create a visual representation of the local water story. This may take the form of a drawing of the process 'From cloud to cup' or a birds eye view map of the local area and water supply.

Water, the heart of our culture

In short

This session is designed to lead students through a personal reflection of their favourite memories involving water and how water can be wasted.

Students will:

- reflect on the ways they use water for fun in their every day lives
- choose a favourite memory and create a personal story
- draw a picture of someone wasting water

Guiding Question: What are my best memories with water?

Yellow Water Billabong, NT



Suggested learning experiences

1) My favourite water memory

Lead a discussion with students about the ways we use water for fun, e.g. swimming, water fights, fishing, water skiing, holidays at the beach, camping, etc.

Ask students to think of one of their favourite memories involving water. Invite them to spend one minute explaining this memory with the person next to them. Allow an opportunity to share several stories with the whole group.

2) Did you know how much we waste?

Discuss which areas around the house do students believe waste the most water. Focus the conversation on the following three areas:

- 1) Leaks in the toilet. A toilet can waste over a million litres a year if it is leaking. This is enough to fill two houses!
- 2) Showers. Showers can use 20 litres per minute. That is enough drinking water for 10 days!
- 3) Gardens. A lot of people attempt to water their plants everyday. Most plants prefer long drinks less often to allow them to grow nice deep root systems.

Discuss with students what simple things we can do at our homes to be water smart in above three areas. Provide the following tips:

- Check your school and home for leaking toilets and taps.
- Aim for four minute showers. Play a four minute song to remind you when to finish.
- Make sure we water less often, but give the plants a good drink.

3) My Story

Inform students that they are going to now write this story in their e-book. Encourage them to use as much detail and personality as possible. Consider displaying the following questions to promote detail.

- Where were they?
- Why was it special?
- Who was there?
- What happened?
- Why was water important?

As a group discuss the introduction to the next section of The Great NT Water Story. Focus on the points that were completed in the hypotheses and research activities and reflect on which discoveries were most interesting and unique to the local area.

4) Visual representation

Invite students to create a visual representation of the favourite water memory. Highlight the questions above and encourage them to provide as much visual detail as possible.

Alternatively, invite students to create a poster that explains one of the key points from the 'Did you know how much we waste?' activity.

The pledge

In short

This session provides an opportunity for students to reflect on their learning before making a commitment to doing their bit to make the NT water smart.

Students will:

- reflect on their learning through the recent sessions
- make a pledge to change their water use behaviour and influence those around them to be water smart

Note: students can now post their pledges online and go into the draw to win a number of prizes for their school. We strongly encourage you to direct your students to The Great NT Water Story on the PowerWater website.

Guiding Question: What can I do to help make the my area water smart?

Kakadu National Park, NT



Suggested learning experiences

1) Reflection on learning

Lead a discussion with students about what they have learnt through The Great NT Water Story. Prompt by refreshing their memory about the activities undertaken and the structure of the e-Book.

- What has surprised them?
- Does it make them think twice about wasting water?
- Do they think we each have a responsibility to being water smart?

2) How can we save water?

Discuss with students where they believe the biggest areas of water use around the house are. Use the graph on page four for percentages of household water use.

Discuss which of these uses are essential and which ones are not.

Invite students to suggest ways to save water in each of these areas, e.g. fix leaks, water the garden less, shorter showers.

3) What can I do to make a difference?

Invite students to suggest what would make the biggest difference in water use around their house. Do they know of any areas that they could improve?

Allow students to visit the following website for water saving tips, or visit as a whole class:

www.livingwatersmart.com.au/how-save-water

Ask students to choose one idea that will make the biggest difference for them around their house. Encourage innovative and different responses.

Storybook tasks

1) My story

Inform students that they are going to need make a pledge or commitment to changing their water use behaviour and influencing those people around them.

Introduce the language from the story book below:

I pledge to:

I will try to influence those around me by:

2) Visual representation

For this activity, all students are required to visually represent their commitment.

This could include:

- writing your pledge down on a piece of paper and taking a photo holding it
- drawing an image of you influencing others
- drawing an image of a sign that will influence others



Kakadu National Park, NT

Appendix 1

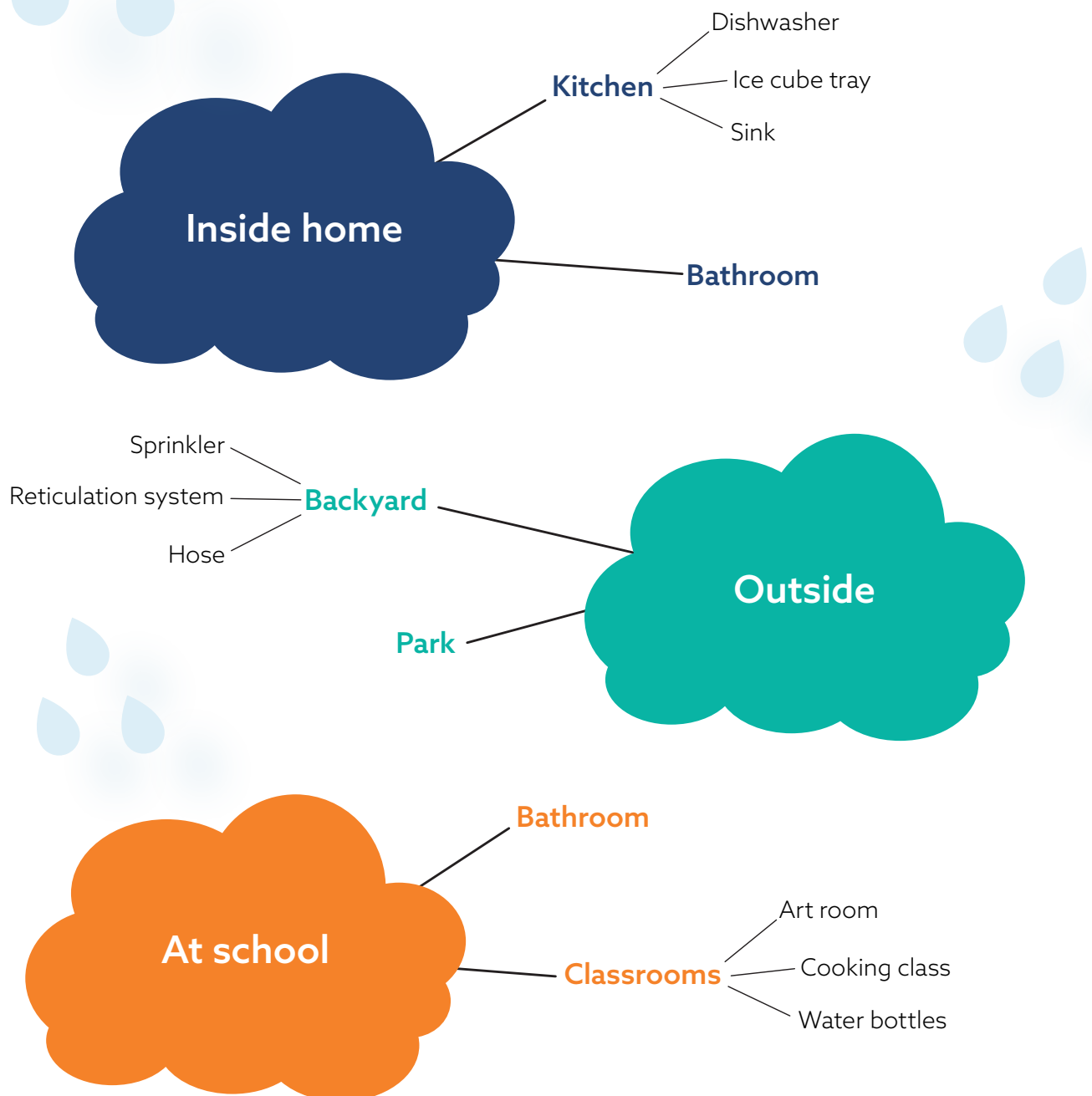
Mindmap - Where did all the water go?

Mindmap -

Where did all the water go?

Your task

Create a mindmap that explores the places water is used everyday. Build on the following examples and see how many you can create!



Appendix 1

Timeline

Timeline -

**It is amazing to think
how many times we use
water in a single day!**

Your task

Reflect on how you use water in a normal school day. List and number those times in the following categories.

Before school	At school	After school	In the evening

Appendix 2

From cloud to cup

From cloud to cup- what do I know about water in my community?

Your task

Create a hypothesis to each of the following questions. Do your best to justify why you believe this. You will soon get a chance to test your thoughts with the experts in these fields.

Hypothesis definition:

A prediction or explanation based on limited evidence that allows for further investigation.

Example: If you planted two trees in different locations at your house and one grew quicker than the other, your hypothesis may be that one plant gets more water or sun than the other.

Where is our local water stored?

Hypothesis

Why do you believe this?

How does it get there when it rains?

Hypothesis

Why do you believe this?

Appendix 2

From cloud to cup

How does it move from where it is stored to your tap?

Hypothesis

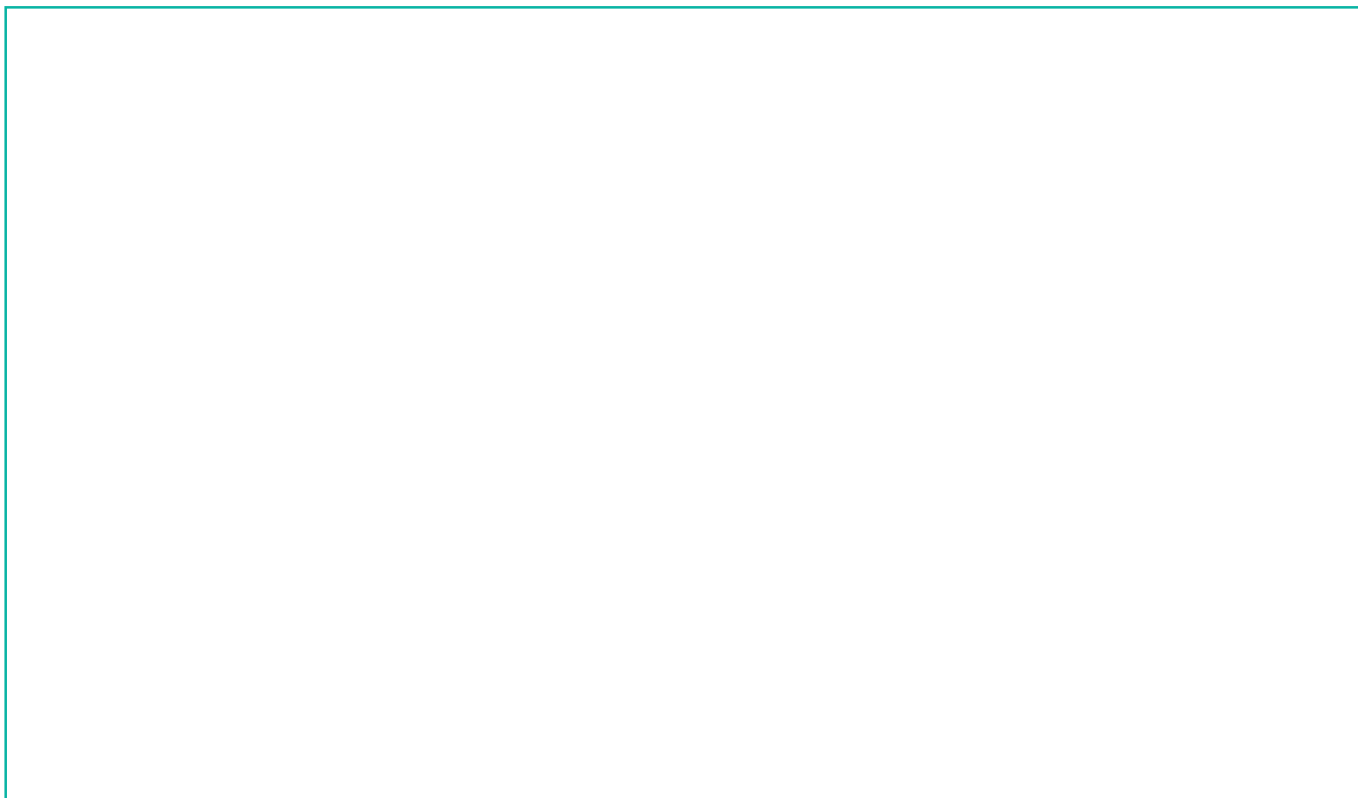
Why do you believe this?

How is it treated for human consumption?

Hypothesis

Why do you believe this?

Can you draw the 'From cloud to cup' process you have described?





POWER AND WATER CORPORATION

Level 2, Mitchell Centre
55 Mitchell Street, Darwin

Phone 1800 245 092

Powerwater.com.au



@PowerWaterCorp