

1. Gathering Prior Knowledge Activities

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Relevant resources:

- www.brainstorming.co.uk
- www.waterlink.org.nz/Water4Me/BrainStorming.pdf
- www.waterlink.org.nz/Water4Me/BrainStormingAndMindMapping.html

Activity 1a What We Know Now

Curriculum links

English

Environment Education – about

Any level



English

Resources required

- Large sheets paper (A3)
- Scrap paper (for ideas) or sticky notes
- Coloured pens
- Glue – if using scrap paper

Prior learning

It is important that students know the basics of brainstorming. It may be useful to practise brainstorming on simple topics in groups to ensure that students are able to work in a cooperative and supportive way.

Method

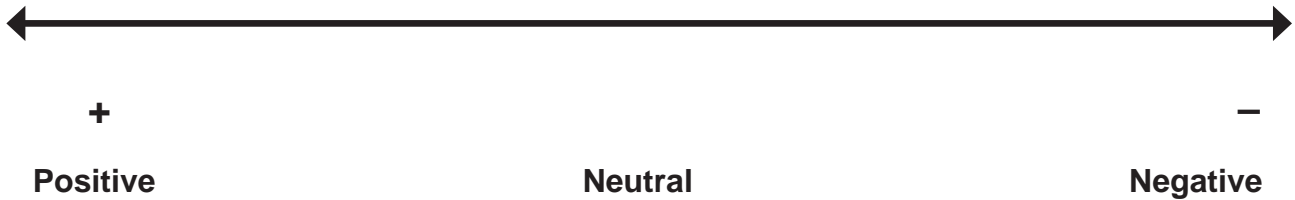
- 1 Explain that before beginning a unit or study it is good to consider what we already know. Ask students to brainstorm, in groups, what they know about lakes.
- 2 If the group/class are not used to brainstorming, some basic instruction will be required:
 - Everyone's ideas count equally
 - When an idea is put forward comments and discussion should be positive
 - The person suggesting the idea may write it down (or draw) and can choose to include their name
- 3 After several minutes of brainstorming it can be a good idea for students to have a brief pause to talk to other groups, as this often sparks more ideas and remembrances.
- 4 When most groups seem to have put all their ideas forward, have each group review their brainstorm
 - Are there similar or related ideas? – group these together
 - Is there a theme to each group? – if so write it as a title for that group
- 5 Each group of students can then report back their key ideas/themes to the class in some way – you may need to put a time limit on the preparation and presentation of each brainstorm.
- 6 After all have presented consider:
 - Were there any common themes to all? (perhaps create an overall chart of these)
 - Are there any obvious gaps in knowledge? If so, write short headings/labels for these

7 Reflection:

- What surprised you about what we already know?
- What else would we like to know?
- How do you think this will help us?
- Did you consider what issues or problems the lakes have?

Possible next steps

- If known knowledge is limited you might like to use 1b Knowledge Bingo or 1c What Makes a Lake Different?
- Brainstorm possible questions and reference sources or people can also be beneficial for students.
- A survey of students' attitudes to the lakes can also be a good comparative tool if another is completed at the end of the unit (students place themselves along the line in relation to their attitude/feeling towards the lake).



Activity 1b Knowledge Bingo

Curriculum links

English

Environment Education – about

Any level



English

Resources required

- Copy of Bingo sheet per student/pair (you can adapt the questions to suit your class or specific lake)
- Pencil/pen per student/pair

Prior learning

- 1a What We Know Now

Method

- 1 Photocopy a sheet per student or pair of students.
- 2 Explain that this is a fun activity that will quickly show us how much or how little we know at this stage. It also helps us to add to our list of what else would we like to know about the lakes.
- 3 Give students a set amount of time to move around the room looking for others that know the answers.
- 4 The aim is to fill in as many squares as possible in the time allowed.
- 5 Each student may only answer once.
- 6 Reflection:
 - Did you learn more about the lakes?
 - Were there any questions that people couldn't answer?
 - Has anyone else got the answer to those questions?
 - Where might we find the answers?

Possible next steps

- Students could choose one of the questions that were not able to be answered to research for homework
- Students could design their own post unit bingo card

Knowledge Bingo

Write down the answer and the name of the person who knew it in the appropriate square.

<p><i>Name two Rotorua Lakes</i></p> <p><i>Who knew?</i></p>	<p><i>How many lakes are there around Rotorua?</i></p> <p><i>Who knew?</i></p>	<p><i>How were the Rotorua Lakes formed?</i></p> <p><i>Who knew?</i></p>
<p><i>Why is Lake Okataina called that?</i></p> <p><i>Who knew?</i></p>	<p><i>Name one pest living in the lake? Which lake does it live in?</i></p> <p><i>Who knew?</i></p>	<p><i>Which lake's name means hot chasm (gap) in Māori?</i></p> <p><i>Who knew?</i></p>
<p><i>What other lake does Lake Rotorua flow into?</i></p> <p><i>Who knew?</i></p>	<p><i>What is the channel called that links these two lakes?</i></p> <p><i>Who knew?</i></p>	<p><i>Where do you find out whether it is safe to swim in a particular lake?</i></p> <p><i>Who knew?</i></p>
<p><i>Name a native animal living in/on/by the lakes? Which lake?</i></p> <p><i>Who knew?</i></p>	<p><i>What is the Māori word for sacred water?</i></p> <p><i>Who knew?</i></p>	<p><i>What does "algal bloom" mean?</i></p> <p><i>Who knew?</i></p>

Activity 1c What Makes a Lake Different?

Curriculum links

Science

Social Studies

Environment Education – about

Any 3–4



Social Studies
Science

Resources required

- Venn Diagram – template 1
- Statement cards – 1 set per group

Prior learning

- 1a What We Know Now

Method

- 1 Label Venn diagram sections; Rivers and Streams, Both, and Lakes, with Not Sure around the edge. In groups, sort the statement cards into the appropriate locations on the Venn diagram (template 1).
- 2 Explain that this activity is to help us find out what we know now so that we can add any other questions to our list of 'what else we would like to know'.
- 3 Groups then take turns sharing sorted information with the whole class, and transfer statements onto the large wall map. Some of the ideas may bring about discussion as to where they fit; this could lead to further research.
- 4 Reflection:
 - Did you learn new information about the lakes?
 - Were there statements that people were unsure of?
 - Are there any placements that people do not agree with?
 - How could we/can we confirm our placement of statements is correct?

Possible next steps

- Research aspects that groups identified as 'not sure' or interesting
- Use grid references on maps
- Compare maps with aerial photos
- Compare maps of different time periods

What Makes a Lake Different? (Statement Cards)

Contains freshwater	Water flows mainly in one direction	Water circulates depending on temperature	Contains plants
Contains fish	Contains eels	Contains algae	Used for fishing
Used for water-skiing	Can swim in it	Animals live on and around it	Water levels can go up and down
Water runs in and/or out of it	You can white water raft on it	Can be used for generating electricity	May have 'roto' in its name
May be referred to as 'te awa'	A hinaki is more likely to be used in this one	Waterfalls or rapids are often a feature of these	Are sometimes very deep

Activity I'd Know Your Lakes

Curriculum links

Social Studies

Environmental Education – about

Level 3–4



Social Studies

Resources required

- Enlarged map of local lakes with no lake names
- Smaller (A4/A3) copies of map. One per group (if laminated can be re-used)
- Sticky notes (optional)
- Easier option – have a list of lake names for students to refer to

Method

- 1 Explain that this activity will also help us to find out what we already know.
- 2 In groups, using a small map, write the name of all known lakes onto the map. Include group ideas on the meaning of each lake name. Alternatively, each name can be written on a sticky note and stuck on their maps. If this activity proves too difficult, provide a list of all lake names and have groups attempt to match the names to the lakes.
- 3 As a class, groups take turns sharing their lake names, and transferring the correct names onto the large wall map. May include English and Māori names.
- 4 Back in groups; write specific information known about each lake, including characteristics, features, history, formation etc.
- 5 As a class, collate information and add to the large wall map. Some of the ideas may bring about discussion whether they are correct, this could lead to further group, class or individual research.
- 6 Reflection:
 - What did you learn about the Lakes?
 - Were there any ideas contributed that people were unsure of, or thought were incorrect?
 - Were these facts or opinions? If they are opinions can they be 'wrong'? Can you find out others' opinions on the matter?

Possible next steps

- List ideas/discussions which people were unsure about for further learning
- Use maps to check names and positions of lakes
- Compare maps with aerial photos
- Compare maps of different time periods

Activity 1e The Lakes and Us

Curriculum links

Social Studies

English

Environmental Education – about



Resources required

- Pictures of people out and about on and around the lakes
- Y form – template 2 (enlarged to wall size)
- Sticky notes (optional)

Method

- 1 In pairs, classify pictures supplied into a Y form labelled: around, in and on the lakes.
- 2 Individually, or in pairs, make your own Y form (or just add your own ideas and activities to current Y form) with activities you, your friends and family use the lakes for. Use the same Y form headings: around, in and on the lakes.
- 3 As a class, collate classified pictures and individual/pair information onto a large Y form for the wall. If more than one activity are the same in each section, you could write or draw only one and then add the total, i.e. water-skiing (5), swimming (20).
- 4 Individuals choose their favourite lake activity and use the following questions to generate ideas for creating an art work, written story, drama or poem about “Why the lake is important to me”.
 - Why is this your favourite activity?
 - Who else does this activity?
 - What effect does this activity have on other people? The environment?
- 5 Reflection:
 - Which aspect of around, in and on the lakes has the most pictures and activities? Which has the least? Why is this?
 - What is the most popular activity? Least? Why is this?
 - Does the season or time of year affect the amount of activities in each section?

Possible next steps

Consider:

- Previous uses
- Water quality
- Algae bloom