

WATER TODAY AND TOMORROW



KEY CONCEPTS

- A VARIETY OF FACTORS WILL INFLUENCE WATER QUALITY AND QUANTITY IN THE FUTURE.
- WATER IS IMPORTANT TO ALL PEOPLE.
- ACTIONS WE TAKE IN OUR EVERYDAY LIVES INFLUENCE THE SUSTAINABILITY OF THE GREATER VICTORIA WATER SUPPLY.

METHOD

Students will watch a video and complete a video worksheet to gather facts about the way we use water now and what the future might hold.

ACTIVITY INFORMATION BOX:

TIME REQUIRED: 50 minutes

GRADE LEVEL: Grades 8-11

KEY WORDS: *conservation, climate change, weather, water efficiency, native plants*

MATERIALS:

- *Water: Today and Tomorrow Video*
- Student Worksheets

SETTING: indoors

SKILLS: listening, observing, creative thinking

SUBJECTS: Science 8-10
Science & Technology 11

LEARNING OUTCOMES:

IT IS EXPECTED THAT THE STUDENT WILL:

- Understand the importance of conserving water for future generations;
- Identify ways water can be used efficiently at home.



BACKGROUND

The *Water in Our Community* video, titled *Water: Today and Tomorrow*, looks at the way we use water today and looks ahead to what our drinking water supply may be in the future. Many things influence how we use water – everyday actions, types of technologies, and the value we place on water. The impact of population growth on water supply, climate change, and water conservation are important concepts explored in the video.

PROCEDURE

1. Pre-video watching tasks: advise students that they will have to listen and watch the video carefully in order to complete notes and worksheet.
2. Divide the class into pairs. Assign each pair of students a set of questions (student worksheet). Their task is to take notes on the aspects of the video that relate to their questions and then work together to answer the questions.
3. Give students time to review the question sheets before showing the video. Then show the video, reminding each student to take notes.
4. After the video is shown, give students time to think about what they have seen and, together with their partner, answer the set of questions on the worksheet.
5. After all students have completed their worksheets, instruct each pair of students to share what they have learned with the whole class. Students may come up with slightly different answers to the same questions – try to come to consensus as to the correct answer – noting if needed, that more research may be done to answer that particular question!

EVALUATION

Have students:

- Complete worksheets with a partner and participate in a class discussion;
- Understand the importance of water conservation and water use efficiency;
- List ways that they can change their own water use in order to reduce their water demand;
- Describe the value of native plant gardens for water conservation and wildlife habitat.

EXTENSIONS

1. Ask students to write a paragraph on their vision of water in the future – how will we manage our water supply needs? What is needed to ensure we have water for both human and non-human needs?
2. Have students list some suggestions for maintaining our water supply – send the suggestions to the CRD Regional Water Supply Commission.

COMMUNITY CONNECTIONS

Invite a municipal planner or public works engineer to come and talk about future growth of your community and/or Greater Victoria and how that might impact the community's way of life.

ADDITIONAL RESOURCES

National Research Council of Canada; Student Science and Tech website;
<http://www.nrc-cnrc.gc.ca/eng/education/index.html>



NAME:

BLOCK:

STUDENT WORKSHEET #1 WATER: TODAY AND TOMORROW

ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. What is a native plant garden? How does it help conserve water?

2. Discuss how climate change may impact our water supply.

3. Where can you find out more information on your water supply and how to conserve it?

4. Based on what the climate change expert discussed in the video, predict what changes may take place in your community's water supply. Include as much detail as possible.

5. List four things that people can do to improve water use efficiency at home.



NAME:

BLOCK:

STUDENT WORKSHEET #2 WATER: TODAY AND TOMORROW

ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. Based on what you learned about native plant gardens, complete the following sentence: "My new native plant garden design will have....." List possible plantings.

2. How much more water is used in Greater Victoria in the summer than the winter? Why?

3. Describe at least two water-efficient technologies in the home and for the garden.

4. Discuss how water conservation regulations help to manage our drinking water supply.

5. List two or more changes that Greater Victoria may experience with climate change.



NAME:

BLOCK:

STUDENT WORKSHEET #3 WATER: TODAY AND TOMORROW

ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. Discuss why it is important to reduce the amount of water we use in the summer.

2. What methods do climate change experts use to predict climate in the future?

3. Discuss how population growth in Greater Victoria will impact our water supply.

4. Compare at least four "water conserving" versus "water wasting" actions in or around the home.

5. How does the Victoria Weather Network help us learn about climate change?

STUDENT WORKSHEET #1 WATER: TODAY AND TOMORROW

ANSWER KEY



ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. What is a native plant garden? How does it help conserve water?

- *Native plants adapted to our climate*
- *Conserve water*
- *Beneficial to wildlife*

2. Discuss how climate change may impact our water supply.

- *Intense winter storms (10% increase in winter)*
- *1 – 4 °C warmer on average*
- *Decrease in precipitation in summer (20% median decrease)*

3. Where can you find out more information on your water supply and how to conserve it?

- *CRD Water Services Department*

4. Based on what the climate change expert discussed in the video, predict what changes may take place in your community's water supply. Include as much detail as possible.

- *Climate change is happening*
- *Not enough water storage*
- *Less water available in summer*
- *changes in water balance at Sooke Reservoir*
- *Increased storms and storm damage (blowdown)*
- *Increased turbidity, cloudiness affecting water quality*

5. List four things that people can do to improve water use efficiency at home.

- *Replace toilets, washing machines, dishwashers with water efficient models*
- *Native plant gardens*



STUDENT WORKSHEET #2 WATER: TODAY AND TOMORROW

ANSWER KEY

ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. Based on what you learned about native plant gardens, complete the following sentence: "My new native plant garden design will have....." List possible plantings.

- *Nootka Rose*
- *Garry Oak*
- *Arbutus*
- *Dogwood*
- *Snowberry*
- *Oceanspray*

2. How much more water is used in Greater Victoria in the summer than the winter? Why?

- *Twice as much water is used in the summer.*
- *Water is used mostly for watering lawns and gardens*

3. Describe at least two water-efficient technologies in the home and for the garden.

- *Low flush toilets*
- *Water efficient washing machines*
- *Irrigation timers*
- *Automatic rainfall shutoff devices*

4. Discuss how water conservation regulations help to manage our drinking water supply.

- *Total water use is about the same as in 1997 – even with population growth.*

5. List two or more changes that Greater Victoria may experience with climate change.

- *Intense winter storms (10% increase)*
- *1 – 4°C warmer than average*
- *Decrease in precipitation in summer (20% median increase)*

STUDENT WORKSHEET #3 WATER: TODAY AND TOMORROW

ANSWER KEY



ASSIGNMENT INSTRUCTIONS:

Read the following questions before watching the video and then answer them after watching the video.

1. Discuss why it is important to reduce the amount of water we use in the summer.

- *Summer is when we have the least amount of water available*

2. What methods do climate change experts use to predict climate in the future?

They measure

- *Wind speed (anemometer)*
- *Wind direction (wind vane)*
- *Precipitation (rain gauge)*
- *Humidity*
- *Sunlight*
- *UV radiation*
- *Temperature*
- *Atmospheric pressure*

3. Discuss how population growth in Greater Victoria will impact our water supply.

- *Larger houses on average*
- *More bathrooms, water appliances*
- *More need for water pipes, sewer lines and pumps*

4. Compare at least four “water conserving” versus “water wasting” actions in or around the home.

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| <ul style="list-style-type: none">• <i>CONSERVING</i> <ul style="list-style-type: none"><i>native plant garden</i><i>irrigation with timer</i><i>golden lawn in summer</i><i>turn off tap when brushing teeth</i> | <ul style="list-style-type: none">• <i>WASTING</i> <ul style="list-style-type: none"><i>non drought tolerant plants</i><i>sprinkler with no timer</i><i>green lawn in summer</i><i>leave taps running</i> |
|--|--|

5. How does the Victoria Weather Network help us learn about climate change?

- *It collects data scientists will use to create climate models (including temperature, precipitation projections)*