

Intel Teach to the Future

Unit Plan

Unit Overview

Unit Plan Title: Water – Save It Now!

Curriculum-Framing Questions

Essential Question:

- Water conservation – whose responsibility?

Unit Questions

- Why is water conservation important?
- How can you develop a water conservation strategy plan for your home involving all members of your family?
- What else can be done? (act local, think global).

Content Questions

- What does ‘water conservation’ mean?
- What are some everyday activities everyone could do to save water around the home?
- What strategies are currently in place state wide, locally (including your own home) to conserve water?
- What is happening at a local/state/federal government level to encourage people to save water?

Unit Summary: Water – Save it Now! Is a curriculum unit of work which is based on the Middle Years Thinking Oriented Curriculum. In keeping with this approach, curriculum-framing questions would be negotiated with students to ensure a unit of work that is authentic, engaging to students and one in which students feel ownership and therefore empowered. The overarching aim of the unit is to familiarise students with the need for water conservation, current strategies in place at a state level to promote this, and most importantly, enable students to arrive at a deep understanding of what they as individuals can be doing at a local level to conserve water. The activities will take students through these stages.

Teaching and Learning Strategies

The pedagogical approach used for this unit is based firmly on the thinking oriented curriculum approach. Students will rotate through activities which will require students to have input into the unit of work, to work individually, collaboratively and participate in self and peer assessment. Students will complete a PowerPoint presentation, a newsletter or brochure using Publisher and a website using Publisher. Correct citation processes will be maintained throughout all activities. Students will also complete two series of activities using the Bloom's Taxonomy of Thinking and Gardner's Multiple Intelligences grid.

Professional Learning

PD – On how to establish a video-conference. This is being hosted at a neighbouring secondary school and the IT Technician has offered to assist.
Professional Reading – On the use of Graphic Organisers, with a focus on possibly introducing two or three to students during this unit. Readings will be shared with other 5/6 teachers at a team meeting.

Year Level(s)

Year 5 - 6

Key Learning/Subject Areas

English, Maths, SOSE & The Arts

Learning/Syllabus Outcomes**English*****Speaking & Listening***

4.1 Listen to and produce a range of spoken texts that deal with some unfamiliar ideas and information.

Reading

4.5 Read and interpret a range of texts containing some unfamiliar ideas and information.

Writing

4.9 Use a range of text types to write about some unfamiliar ideas and information, providing supporting detail.

Maths (Chance and Data)***Posing Questions and Collecting Data***

4.1 Design and prepare surveys and experiments to answer questions or test conjectures and predictions.

4.2 Collect and record data systematically.

Interpreting Data

4.2 Interpret, discuss and compare data displays, including how well they communicate information.

Studies Of Society and the Environment

5.3 Explain how people's use of natural and human environments changes over time.

5.4 Develop a plan to address impacts of change.

The Arts (Media)

4.1 Demonstrate the ability to experiment with ideas in making and presenting media productions.

Procedures:

The unit will begin with a brainstorm with students to identify students' prior learning. Students will complete a number of key activities which includes the development of a PowerPoint presentation, a Publisher newsletter and a website. Students can work individually, in pairs or in small groups for the activities, but must rotate through each of these approaches during the Unit.

The Unit will be launched with an excursion to a water treatment plant. This will be followed by a further brainstorm during which Essential, Unit and Content Questions will be agreed upon.

These activities enable students to contribute to the curriculum framework and structure of workgroups, have input into assessment and study an issue of relevance to the 'real world'.

Approximate time needed:

One term (integrated curriculum approach)

Prerequisite Skills:

Familiarisation with technology programs; understanding of water usage in and around the home; previous classroom experience in working with Bloom's/Garner Grid.

Materials and Resources**Technology – Hardware**

Camera ✓	Printer ✓	Video-Camera ✓
Computer(s) ✓	Datashow Projector ✓	Video Conferencing equipment ✓
Digital camera ✓	Scanner ✓	Other
DVD player	Television/Averkey	Other
Internet connection ✓	VCR ✓	CD-Burner

Technology - Software

CD-ROMs ✓	Editing software	Web page development ✓
Database/spreadsheet ✓	Internet Web Browser ✓	Word processing ✓
Desktop Publishing ✓	Multimedia ✓	Other
email software ✓	Animation software	Other

Printed Materials: non-fiction books, story books, reference materials, newspapers, advertising pamphlets

Supplies: N/A

Internet Resources:

www.savewater.com.au

www.citywestwater.com.au

<http://conservewater.melbournewater.com.au/>

Others:

Guest speaker: from City West Water. Presentation to be made via video conferencing.

Excursion: to Werribee Water Treatment Plant

Accommodations for Differentiated Learning

Students with Special Needs: Tasks will be modified to be made more appropriate for students' individual needs. Support provided by integration aide.

English as a Second Language (ESL) Student: Appropriate resources including Internet sites will be made available. Support will be provided by ESL support teacher; students will also be paired up for peer support personnel.

Gifted Student: more challenging tasks, extended investigation in related topics of the learner's choice, open-ended tasks or projects

Student Assessment:

Assessment will be via completion of student required tasks – PowerPoint presentation, Newsletter publication and web site development. Rubrics are negotiated with students and include student self and peer assessment.

Key Word Search:

Water, conservation, water usage, recycle, grey water, environmental, storm water, rain, run off.

Water Conservation

SCORING GUIDE Multimedia Presentation

Student _____ Date _____

	TOTAL VALUE	PEER EVAL	TEACHER EVAL
CONTENT			
•Has researched information on water conservation thoroughly	15		
•A variety of electronic and non-electronic resources used for research	10		
•Tables/images clearly labeled	15		
•Examples are cited correctly	10		
CREATION OF SLIDES			
•Opening Slide with Title	5		
•Minimum of 7 slides	5		
•Uses transitions	5		
•Uses animations	5		

ORGANISATION			
• Spelling and Grammar	7		
• Slides are logically presented	2		
• Presentation is visually attractive	5		
• Oral presentation complemented slideshow	5		
• Good time management skills	5		
• Storyboard complete	6		
TOTAL POINTS	100		
GRADE			

RUBRIC EVALUATION FOR WEBSITE PROJECT

Name of Student _____

Learning Style used: Collaborative (Team)/Collaborative (Pair)/Individual

	Established	Consolidating	Developing	Comments	Scoring
Content	<p>Content demonstrates thorough research using a variety of electronic and non-electronic resources</p> <p>Content is well-written, proceeds logically and presents a strong argument</p> <p>Content uses correct grammar, spelling and punctuation throughout</p>	<p>Content demonstrates some research using a variety of electronic and non-electronic resources</p> <p>Content is well-written, though doesn't always proceed logically or present a strong argument</p> <p>Content uses correct grammar, spelling and punctuation most of the time</p>	<p>Content demonstrates little research using a variety of electronic and non-electronic resources</p> <p>Content is not well-written throughout.</p> <p>Content uses correct grammar, spelling and punctuation some of the time</p>		
Use of Technology	<p>Layout is visually appealing</p> <p>Appropriate, functioning and appealing use of graphics, animations</p> <p>Appropriate and appealing use of fonts and colour</p> <p>Appropriate and functioning use of hyperlinks and/or embedded files</p>	<p>Layout is somewhat appealing</p> <p>Use of graphics, animations is not always functional, appropriate and/or appealing</p> <p>Use of fonts and colour is not always functional, appropriate and/or appealing</p> <p>Use of hyperlinks and/or embedded files colour is not always functional, appropriate and/or appealing</p>	<p>Layout is not visually appealing</p> <p>Use of graphics, animations is not functional, appropriate and/or appealing</p> <p>Use of fonts and colour is not functional, appropriate and/or appealing</p> <p>Use of hyperlinks and/or embedded files is not functional, appropriate and/or appealing</p>		

Implementation	Thorough planning evident in storyboard	Storyboard shows some evidence of planning	Storyboard shows little/no evidence of planning		
Time Management	Effective, efficient use of allocated time. All tasks submitted on time	Task oriented, though not evenly spread over tasks. Most tasks submitted on time	Required redirection to tasks. Not all tasks completed		
Leadership	Demonstrated effective leadership through assisting other students, putting forward suggestions for tasks etc.	Demonstrated some leadership through assisting other students, putting forward suggestions for tasks etc.	No leadership strategies demonstrated.		
Student Self Assessment	I completed all sections listed above to the best of my ability.	I completed all sections listed but did not work to the best of my ability all of the time	I didn't complete all sections and didn't work hard during this unit		

Signature (Teacher)

Date:

Signature (Student)

Date:

Bloom's/Gardner's Student Tasks

*Each student would need to negotiate with their teacher the tasks and the timeline. They would need to choose several Multi Intelligence rows.

	KNOWLEDGE	COMPREHENSION	APPLICATION	ANALYSIS	SYNTHESIS	EVALUATION
Linguistic	Discover what the current water restrictions are. List these.	Describe how your family currently uses water saving techniques.	How can you show your family about other techniques for saving water.	Compare your current strategies with other families.	Compose a letter to the paper about water saving strategies our class member's use.	Rate what is happening in your home about water saving. Justify your decision.
Logical Mathematical	Collect some water usage data from your home, eg. average daily water use, shower use, etc.	Summarise the data that you have discovered about your water usage at home.	Calculate how much water could be saved if your family restricted their showers by 1 min. each.	Work with a friend & contrast your data with theirs.	Develop a report about the results of your data comparison.	Develop a hypothesis about the whole school use based on your data.
Visual Spatial	Look at the ads for the modern appliances. Distinguish the facts from fiction in their ads.	Design an ad for your current dish washer/washing machine to highlight their water usage abilities.	Illustrate how advertisers use their medium to convince you about their product.	Draw, or find a diagram that indicates the plumbing within your household.	Using your diagram, redesign how 'grey water' could be diverted.	Working with a partner, develop some debating points (for & against) about the use of grey water around homes.
Musical	Locate &/or record and save some sounds that could be used within an electronic publication.	Give examples of the sounds that you have & collect ideas about people's feelings when these sounds are played.	Use a sound editing piece of software, experiment with your sounds.	Organise your sounds into categories. Ie. Soothing, aggravating, harsh, etc.	Demonstrate how sounds of water moving in different formats can affect people's moods.	Record four washing machines/dish washers ads from TV. Assess the sound track that they have used.

Interpersonal	Conduct a survey in your class to gather data about why students think saving water is, or isn't important	From your survey data, make a list of the five key, for and against views presented by your fellow students	With three of your friends, prepare a debate using these viewpoints as the for and against arguments	What additional arguments can you add to both sides to strengthen the debate	Does this accurately reflect the current situation? Discuss.	After the debate, discuss with the group which side won and why
Intrapersonal	Record a diary for 1 week recording your water usage. Classify your usage eg. recreational, food related, etc.	Summarise your feelings related to your water usage.	Show how you can modify your personal water use.	Outline the attitudes of various people in your circle of acquaintances regarding water saving.	Rate your friends' water saving strategies.	Write a statement describing how your water saving strategies compare with your friends.
Naturalist	Research the effect of storm water run off on the areas streams & waterways.	Write a brief report explaining this.	Identify storm water drainage areas in your local area (around the home or school)	What type of pollution could be picked up by these storm water drains?	How might this pollution impact on water quality? Compare and contrast the type of pollution in urban and rural areas.	Evaluate water quality strategies in urban and rural areas
Bodily Kinesthetic	Find a poem, piece of music or picture of water that appeals to you	Write a brief report on why this work appeals to you. Choreograph some movements that could be put to this to enhance the work?	Perform your piece for a friend, family member(s) or class.	Contrast your work with a friend's	What similarities/differences can you find? Why do you think this is so?	Find a commercially produced 'water' work and evaluate.