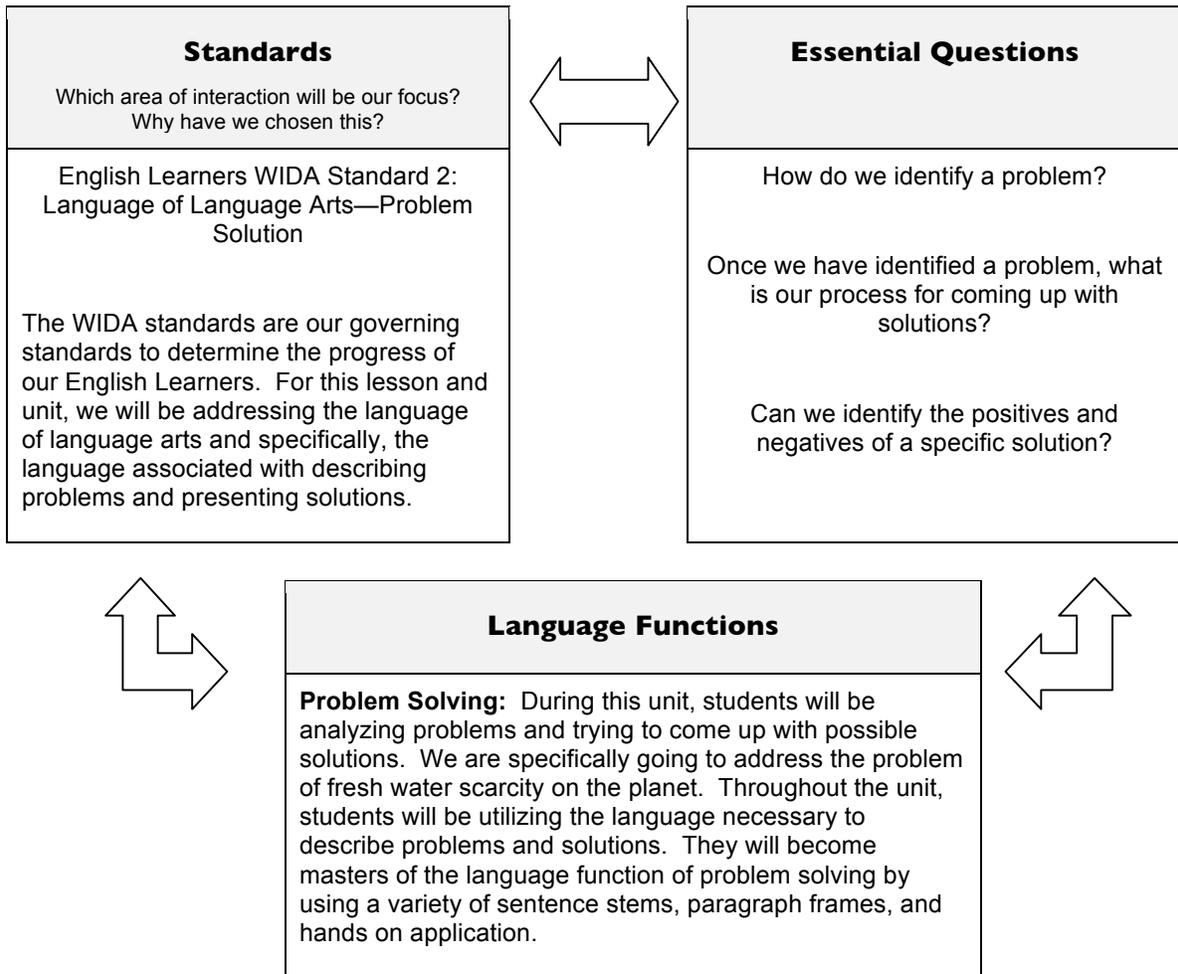


Donelson Elementary ESL Unit Plans

Unit title:	“Water is Life: Water Conservation Problem Solving”
Teacher(s)	Aaron Thomas
Subject and grade level	Grade 5 English Learners
Time frame and duration	

Stage I: Integrate significant concept, area of interaction and unit question



<p>Assessment</p> <p>What task(s) will allow students the opportunity to respond to the unit question?</p> <p>What will constitute acceptable evidence of understanding? How will students show what they have understood?</p>
<p>Advocacy Poster/Presentation: Students will create a poster that explains the problem of fresh water scarcity in the world. The poster will also explain how they plan to provide a solution to this problem. They will be required to present their poster to their class and their presentation will be assessed utilizing our rubric for oral presentations.</p> <p>Once students have participated in our unit project, the rainwater barrel collection system, they will be</p>

required to present that information to other classes. They will answer questions and explain how the system works.

How will standard benchmarks be accomplished?

ESL Standard 2 Language of Language Arts: “Problem and Solution”

Level 1 English Learner: Student is able to demonstrate listening and reading comprehension by reading a passage and then selecting a multiple choice answer that describes the problem of the passage. They can verbally discuss possible solutions with the teacher.

Level 3 English Learner: Student is able to demonstrate comprehension of a passage. They can identify the “problem” by highlighting it in the passage. They can verbally discuss possible solutions and begin to put together a plan to address the problem.

Level 5 English Learner: Student is able to break down a passage and identify the problem by highlighting it in the passage. The student is then able to write about the problem giving reasons that contributed to the problem. Working individually or with partners, the student can discuss solutions to a problem. They can formulate a plan to address the problem on a macro and micro level and take steps to begin addressing the problem.

How will student work be assessed?

Rubric for oral presentation and visual aid

Stage 2: Backward planning: from the assessment to the learning activities through inquiry

Content

What knowledge and/or skills (from the course overview) are going to be used to enable the student to respond to the unit question?

What (if any) state, provincial, district, or local standards/skills are to be addressed? How can they be unpacked to develop the significant concept(s) for stage 1?

Students will have prior knowledge gained from our unit on recycling. They will be familiar with the concept of conservation and recycling.

Our WIDA ESL standards will be:

WIDA ESL STANDARD#2: Language of Language Arts—Problem Solving

We will consider all of the language that is involved in describing problems and analyzing solutions.

Approaches to learning

How will this unit contribute to the overall development of subject-specific and general approaches to learning skills?

Thinking Skills

- Students will have to actively look at real life problems. They will use thinking skills to come up with potential solutions to a problem. Students will analyze the benefits and drawbacks of each proposed solution.

Communication Skills

- Students will be communicating to other students regarding the problem they are taking on and possible solutions.

<p>Learning experiences</p> <p>How will students know what is expected of them? Will they see examples, rubrics, templates?</p> <p>How will students acquire the knowledge and practice the skills required? How will they practice applying these?</p>	<p>Teaching strategies</p> <p>How will we use formative assessment to give students feedback during the unit?</p> <p>What different teaching methodologies will we employ?</p> <p>How are we differentiating teaching and learning for all? How have we made provision for those learning in a language other than their mother tongue? How have we considered those with special educational needs?</p>
<ul style="list-style-type: none"> •Students will have a project rubric that explains what they need to accomplish. •Students will see teacher models to help them understand expectations. •Students will acquire knowledge through educational videos, articles, first person observation, and hands on practice. 	<p>Small Group Discussion</p> <p>Models/Visual presentations</p> <p>Modified writing assignments (Paragraph frames or sentence stems)</p> <p>Exploration</p>
<p>Resources</p> <p>What resources are available to us?</p> <p>How will our classroom environment, local environment and/or the community be used to facilitate students' experiences during the unit?</p>	
<p>PBSlearningmedia.org</p> <p>Thewaterproject.org</p> <p>Water.org</p> <p>Saveonenergy.com</p>	

Daily Activity Schedule:

Day 1

Introduction: Signs of the week. Each week, students are learning different American Sign Language. The signs for this week include:

- Water
- Thirsty
- Problem
- Solution

Photo Reflection: Students will reflect silently on a photo that represents the extreme lengths that people on this planet go through in order to find fresh water. We will have a short discussion where students present their thoughts, ideas, and questions regarding the photo.

Building Background Information: Students will watch a short video that describes the dire situation that many people face because of the lack of fresh water availability.

Reading: Students will read an article about fresh water scarcity. As a class, we will highlight key features in the article. Specifically, we will be looking for problems that are described in the article.

Graphic Organizer: Students will respond to the reading and video, by completing a graphic organizer that lists problems associated with fresh water scarcity. The graphic organizer will have a space for possible causes of that problem as well.

Exit Ticket: Students will be instructed to observe all the ways that they use water at their homes. They will have a paper where they can take notes on whether they think they could use less water in that situation or if they believe that they are being wasteful with water.

Day 2

Introduction: Review Signs of the Week

Photo Reflection

Building Background Information: Students will review their graphic organizers. They will begin to brainstorm possible solutions to the problems that they listed.

Problem Solving Activity: Students will be given our problem solving activity paper. They will have to illustrate a possible solution to lack of fresh water availability. They will then use the sentence stems to describe their possible solution.

Exit Ticket: Students will use our problem solving question page. They will choose two questions to answer in regards to our specific problem.

Day 3

This day will be spent setting up our unit project. They will set up the rainwater barrel and rain saucer. The raised garden bed will have already been built, but the students will be able to set up the soaker hose systems and observe how the garden bed will be watered using collected rainwater.

Day 4

Students will be using this day to create their poster projects.

Day 5

Poster Presentations.

ESL Unit: Water Is Life
Unit Project: Building a rainwater catching system

During this unit, students have been learning about the problem of fresh water shortages. The students have analyzed the causes and effects of this specific problem. They also have brainstormed and planned ideas to serve as solutions to this problem. The final project will be a hands-on project that demonstrates one possible solution to lack of fresh water availability.

Description of Project:

At Donelson Elementary School in Arlington, TN, we currently have a greenhouse, 5 organic waste recycling worm farms, and two 60 gallon compost bins. We use these tools to teach students about food and paper waste and what we can do to be more responsible in how we dispose of waste that can be recycled. Last year, we used the compost from the worm farm and we grew tomato plants and flowers in our greenhouse. This year, our goal is to expand on that venture. With this project on fresh water availability and water conservation, we will set up a rainwater barrel and a saucer system to catch fresh rainwater. We will also build an 8 x 4 raised garden bed. We will use the compost from the bins and the worm farms to enrich the soil in the garden bed and provide great potting soil to grow plants in our greenhouse. We will use the greenhouse to grow flowers for a perennial and annual butterfly garden. Our butterfly garden will be watered using a drip hose and the rainwater that we collect in our barrel. This system will show students practical applications for recycling and how we can improve our environment and surrounding ecosystems by recycling.

Materials Needed:

[Rain Wizard 40-Gallon Terra Cotta Plastic Rain Barrel with Spigot](#) (Lowe's.com)

- Cost: 108.78

59" Rain Saucer from (rainsaucers.com)

- Cost 74.95

Zero G Kink Free 50 ft Garden Hose (Lowe's.com)

- 36.98

Element 3/8-in x 100-ft Garden Soaker Hose

- 24.98

Cedar Boards 1x8x8 (lowes.com)

- $19.41 \times 6 = 116.46$

25 pack 18 inch wood landscape stakes (Lowe's.com)

- 7.48

Sta-Green Garden Soil/Compost (Lowe's.com)

- $3.98 \times 6 = 23.88$

Farfard 3 cubic feet organic Peat Moss (lowes.com)

- 11.48

Garden Pro 1 cu ft Top Soil (lowes.com)

- $1.57 \times 12 = 18.84$

Perennial Plants (Bayless Greenhouse, Millington, TN)

- 76.17

Total Cost: 500.00

Unit: "Water Is Life"

Assignment: Problem Solving-Lack of Availability of Fresh Water

In school I am sure you have heard that 70% of our planet is covered by water. Did you know, that according to water.org, 1 out of every 10 people on the planet do not have access to clean water? Water shortages affect people across the planet in unique ways, but one of our problems in the United States is that we are very inefficient in how we use water. People need water to drink, but we use much more water to grow our crops and livestock and to water our lawns and fill our swimming pools. As humans, we must become more efficient in the ways that we collect, store, and use water. For this assignment, I want you to brainstorm ideas and come up with a solution to how we can efficiently collect and store fresh water. Think about how we can most easily access fresh water and then provide a way to make better use of that water. Sketch a diagram of your possible solution in the space provided. Afterwards, explain how you came up with that solution, benefits to that solution, and also drawbacks to that solution.



Unit: "Water Is Life"

Assignment: Problem Solving-Lack of Availability of Fresh Water

Explanation of proposed solution:

Benefits to proposed solution:

-
-
-

Drawbacks to proposed solution:

-
-
-

Language Function:
Problem and Solution

Guiding Questions and Sentence Frames

Guiding Questions:

What is the problem?

Who does the problem affect?

What is causing the problem?

What are the effects of the problem?

What solutions have been tried?

What solutions can be attempted?

What do you think will be the results of the proposed solution?

Sentence Frames:

The problem is _____ .

The causes of the problem include _____

_____ .

One possible solution to this problem is to

_____ .

The problem of _____

is caused by _____

In order to solve this problem, it is necessary to

_____ .

ESL Rubric

Assignment: Oral Presentation—“Problem Solving: Water is Life”

Directions: For their oral presentation, students will need to utilize their visual aid to create a presentation that accomplishes the following tasks:

- Presents the problem that we addressed (shortage of fresh water availability)
- Presents their proposed solution along with their diagram
- Present the benefits and possible drawbacks of the proposed solution.

Task	1	2	3
Preparation	Student did not make an effort to research their topic nor fully complete their note cards.	Student has filled out their note cards to assist with their presentation, but they did not demonstrate a complete understanding of the project.	Student researched questions and topic in order to provide a thorough explanation. Student has filled out their note cards to help them with their oral presentation.
Visual Aid	Student failed to participate in preparing the visual aid for the presentation.	Student participates in preparing visual aid. Visual aid does not add significantly to the presentation.	Student fully participated in preparing visual aid for oral presentations. The visual aid adds important information and clearly illustrates the proposed solution to the problem of fresh water shortages.
Oral Presentation	Student does not participate in the presentation.	Student speaks clearly, but does not maintain appropriate eye contact. They use some vocabulary and are able to explain the concept. Student has difficulty responding to impromptu questions, therefore demonstrating a lack of complete understanding of the topic.	Student speaks clearly, maintains appropriate eye contact, and uses a variety of vocabulary and explains it in a way that is understood by the audience. Student is able to respond to an impromptu question.

Rubric Explained:

Total points possible: 9

8-9—Student has demonstrated mastery of assigned skill. Their work demonstrates exemplary effort.

6-7—Student has demonstrated an understanding of the assignment; however, they may need to focus on including more detail and spending a little more time explaining the process of the project.

4-5—While the student completed the work, they did not put forth an appropriate effort to complete the assigned tasks. Their completed work lacks detail and editing.

3 or less—Student did not complete the task.