ESTADO LIBRE ASOCIADO DE PUERTO RICO
DEPARTAMENTO DE EDUCACIÓN

Unit 3.6: Water
English as a Second Language
5 weeks of instruction

STAGE 1 – (Desired Results)	
Unit Summary:	In this unit, the student learns about the water cycle in order to describe the cause and effect of human interaction with the local water system and how humans are creating systems to preserve water. The student finds the main ideas in non-fiction texts and describes three states of matter.
Transversal Themes:	Knowledge, Values, Attitudes, Human Virtues, Skills and Competencies, School to Work, Economy, Environment
Integration Ideas:	Science, Math, Writing, Music, Dance, Art, Reading

Essential Questions (EQ) and Enduring Understandings (EU)

EQ1. Why is water precious?
EU1. Without water we could not live because it helps us in many ways (farming, drinking, cooking, hydroelectric power, transportation).

EQ2. Is all water the same? Why not and why is that important?
EU2. Water can change state and also have ingredients that make it undrinkable (salt, chemicals, pollution).

EQ3. How do we use water every day?
EU3. Water is used in everything you do throughout the day from using it to drink or cook to taking a shower or flushing a toilet.

EQ4. How can I help?
EU4. Humans can help by making sure water is clean and safe to drink as well as making an effort to protect our water sources with our everyday choices.

Transfer (T) and Acquisition (A) Goals

T1. The student will use his/her learning about the water cycle and water use to help preserve the quality of water in his/her area.

The student acquires skills to...

A1. Listen and interact with peers, ask and answer stimulating questions, and respond to increasingly complex directions.

A2. Respond to text by offering and reinforcing ideas from a text, to summarize a text focusing on main idea and details, as well as to deliver brief oral presentations.

A3. Describe the connections between scientific concepts and to know how to apply phonics skills to decode words for reading or for meaning.

A4. Write an informational text with correct English grammar and apply known strategies to determine the meaning of and write more complex words and phrases.

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Puerto Rico Core Standards (PRCS)	
Listening	
3.L.1	Listen and interact with peers during social interactions, read-alouds, oral presentations, and class, group, and partner discussions.
3.L.1a	Ask and answer detailed questions that stimulate conversation and refer to details from the text as the basis for opinions and conclusions, and use appropriate language structure according to purpose and setting (formal and informal).
3.L.1c	Listen and respond to increasingly complex commands and directions.
3.L.1d	Offer and respond to greetings/farewells using appropriate courtesy expressions.
Speaking	
3.S.1	Interact in class, group, and partner discussions by following rules, asking and answering questions, and adding relevant information.
3.S.2a	Exchange verbal and nonverbal forms of greetings, farewells, and introductions using the appropriate courtesy expressions and respond accordingly.
3.S.2b	Use correct grammar in expanded simple sentences to express ideas for a variety of purposes, to respond to simple instructions, and to answer and formulate questions.
3.S.3	Retell fictional and informational texts; respond to stories, conversations, read-alouds, and presentations; and recount experiences using increasingly complex complete sentences and key words in order to add detail while speaking using expanded vocabulary and descriptive words.
3.S.4	Offer and reinforce ideas and opinions by providing good reasoning and increasingly detailed text evidence and/or relevant background knowledge about the subject matter.
3.S.5	Describe personal experiences or ideas from a fictional or informational text, choosing appropriate language according to purpose, context, and audience and using grade appropriate grammar. (With support in the first language as necessary.)
3.S.6	Plan and deliver brief oral presentations on a variety of topics and content areas.
3.S.6a	Retell and summarize familiar stories or short informational texts and recount experiences using complete sentences, key words, and a growing number of academic and content-specific words in order to add important details or the main idea.
Reading	
3.R.3I	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in an informational text.
3.R.4I	Determine the meaning of words and phrases in an informational text.
3.R.7I	Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify an informational text.
Reading Foundational Skills	
3.R.FS.11b	Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.

3.R.FS.11c	Segment spoken single-syllable and multi-syllable words into their complete sequence of individual sounds (phonemes).
3.R.FS.11d	Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.)
3.R.FS.12	Know and apply phonics and word analysis skills to decode words.
3.R.FS.12d	Know and apply the spelling-sound correspondences for common consonant digraphs.
Writing	
3.W.2	Write informational texts (e.g., "how-to" book, simple report) with increasing independence, and organize key ideas and details in a clear sequence.
3.W.6	Participate in shared research and writing projects (e.g., explore a number of "how-to" books on a given topic and use them to write a sequence of instructions).
Language	
3.LA.1	Demonstrate command of English grammar and usage when writing or speaking.
3.LA.1a	Use nouns and adjectives in increasingly complex grammatically correct sentences.
3.LA.2f	Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.
3.LA.2g	Consult reference materials, including dictionaries, as needed to check and correct spellings, using the ability to alphabetize by the entire word.
3.LA.3a	Choose words and phrases for different purposes (e.g., slang, written vs. spoken, formal vs. informal).
3.LA.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on class reading and content area study, choosing flexibly from an array of strategies.
3.LA.4f	Use knowledge of the meaning of individual words to determine the meaning of compound words (e.g., *birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark*).
3.LA.4g	Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.
3.LA.5c	Distinguish meaning among closely related verbs (e.g. *Toss, throw, hurl*) and closely related adjectives (e.g., *thin, slender, skinny*).

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STAGE 1 – (Desired Results)			STAGE 2 – (Assessment Evidence)		STAGE 3 – (Learning Plan)
Alignment to Learning Objectives	**Content Focus** *(The student understands…)*	**Content Vocabulary**	**Performance Tasks**	**Other Evidence**	**Learning Activities**
PRCS: 3.R.FS.12d 3.LA.1a 3.LA.2g 3.LA.4g 3.LA.5c **EQ/EU:** EQ2/EU2 **T/A:** T1 A1	• States of matter through water (gas, liquid, solid). • The purpose and structure of a dictionary, alphabetical order and parts of speech.	• States of matter (solid, liquid, gas) • Temperature • Water vapor, ice		***Water Words Dictionary*** • As the student is learning about water, he/she creates a water words dictionary that includes: an illustration of the word, a definition, and the word used in a sentence. The teacher makes sure the student is applying known spelling-sound correspondences for common consonant digraphs. See attachment, 3.6 Other Evidence – Word Square as a way of organizing each dictionary page. The student arranges his/her dictionary alphabetically and creates a cover. • The student may use a dictionary as needed.	*For sample lessons related to the following group of learning activities, refer to the section 'Sample Lessons' at the end of this map.* ***States of Matter*** • The teacher begins the unit by asking, "What do we know about water?" and does a word web of what the student thinks of water. Then the teacher asks, "Is all water the same? Why or Why not?" to see if the student can come up with different states of matter. The teacher has ice cubes, a glass of water, and a teapot or pot of boiling water. The student writes down observations and infers cause and effect relationships on how or why the water is different (observations help reinforce parts of speech because the student is using adjectives to describe the water, verbs to say what is happening, and he/she is observing a noun).The teacher helps students to distinguish meaning among closely related verbs and adjectives. In closing, the teacher makes this apparent and classifies words they used into adjectives, nouns, and verbs in a chart. For example, Noun – Liquid; Adjective – Wet; Verb – Drips, slides. • The teacher shares how matter is anything that takes up space. The student does a matter hunt and writes down the names of everything that he/she sees in front of him/her that is considered

					matter in one minute. The teacher notices if anyone writes down "air." The teacher proves that air takes up space by blowing up a balloon or showing how a tissue in a cup will not get wet when submerged in water: **http://www.kean.edu/~fosborne/resources/ex8c.htm** • To reinforce three states of matter (liquid, gas, solid) the teacher brings in examples of different states of matter and has the student classify them into liquid, gas or solid (see examples of easy demonstrations from website: **http://www.satorismiles.com/tag/matter/**) The student selects two items and describes them with nouns, verbs, and adjectives. • The teacher makes Simple Ice Cream in a bag to model states of matter. This activity includes excellent graphic organizers where the student describes ingredients from the experiment: **http://www.aquariumofpacific.org/downloads/ed_1ssIceCream.pdf** • The teacher prepares a state of matter three tab book. The student gives descriptions of three states of matter, an illustration, and a list of examples.

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Alignment to Learning Objectives	**Content Focus** *(The student understands…)*	**Content Vocabulary**	**Performance Tasks**	**Other Evidence**	**Learning Activities**
PRCS: 3.L.1 3.L.1a 3.L.1c 3.S.3 3.S.4 3.R.3I 3.R.4I 3.R.7I 3.LA.2f 3.LA.4 3.LA.4f 3.L.1d 3.S.2a 3.S.6 **EQ/EU:** EQ2/EU2 EQ3/EU3 **T/A:** T1 A1 A3	• The stages of the water cycle (evaporation, condensation, precipitation).	• Cause and effect signal words (if, then, because, since, so, before, after) • Pollution • Preserve • Run-off, groundwater • Salt water, fresh water • Transition Words (first, second, then, next, afterwards, finally) • Water cycle (evaporation, evaporates, condensation, condenses, precipitation, precipitates (rains) • Water vapor, ice	*For complete descriptions, refer to the section 'Performance Tasks' at the end of this map.* ***Water Cycle Poster Assessment*** • After the student performs his/her water dance, he/she creates a poster with illustrations of the water cycle and the following vocabulary words: (evaporation, condensation, precipitation, clouds, water vapor, ground water, run off).	***Word Family Check*** • The teacher selects a word family with two or three letter clusters to focus on every week during the morning meeting. The teacher has a short lesson of how to pronounce the cluster and gives examples of words. (See website: **http://www.carlscorner.us.com/Sorts.htm** for word family picture cards and sorting ideas). The teacher uses attachment, 3.6 Other Evidence – Word Family Assessment to check the student's ability to identify and read letter clusters. The student creates a word family notebook to keep track of and add new words to throughout the year (see attachment: 3.6 Other Evidence – Word Family Book).	*For sample lessons related to the following group of learning activities, refer to the section 'Sample Lessons' at the end of this map.* ***Stages of the Water Cycle*** • Once the student is familiar with the states of matter, the teacher asks him/her, "How does water get to us?" The student shares prior knowledge of examples of waterways nearby and infers what caused the lake to fill or the stream or river to have water. The teacher demonstrates how water travels through the water cycle and connects state of matter vocabulary (gas, liquid, solid) to the changes that occur during the water cycle (evaporate, condense, precipitate). **http://thewaterproject.org/resources/lesson-plans/create-a- mini-water-cycle.php** • Groundwater in a cup: The teacher demonstrates how ground water filters out contamination by building a simple filter out of sand, gravel, and aquarium rocks. The student writes down his/her observations and deduces a cause and effect relationship between the groundwater and its role in filtering out contaminants. **http://www.groundwater.org/file_download/inline/3dda8349- 666b-4de2-b067-51b905ae61a8** • The teacher reads aloud texts on the water cycle (e.g., "Water Dance"), pointing out the information given by diagrams and illustrations and how they clarify and contribute to the text. The student draws the water cycle and labels his/her drawing using vocabulary words

					(evaporation, condensation, precipitation, clouds, water vapor, ground water and run off). The student explains the water cycle using his/her illustration and the vocabulary words. • The teacher assists students in determining or clarifying the meaning of unknown and multiple meaning words and phrases based on studying water. • The teacher assists students in using the knowledge of individual words to determine the meaning of compound words such as: rainbow, raincloud, etc. • The teacher emphasizes the use of transition words (first, second, then, next, afterwards, finally) when describing the cycle (e.g. Water evaporates into water vapor. Next it condenses into clouds. When the clouds are too heavy, then it rains. This is precipitation. Afterwards, precipitation soaks into the ground and becomes groundwater. If there is too much, it runs off into rivers and goes to the ocean.) • The student creates synchronized dances of the water cycle. The teacher splits the class into two groups to choreograph the water cycle. The teacher brings in examples of music that have a 4 beat rhythm for the student to choreograph a 30 to 45 second dance. Stipulations to assist dance: o Select a beginning position to start from (hold for four beats) o For each part of the water cycle (evaporation, condensation, precipitation), have a movement to represent each one and spend four beats for each one o Have a smooth transition from one part of the cycle to the other o Select a position you will end with (hold for four beats) • After one group performs the dance with music, the other group shares what they liked about it and guesses which

					parts of the dance represented which parts of the water cycle. The student gives constructive criticism of how the group can improve the dance. The teacher gives the student 15 more minutes to work in his/her group to include the ideas or suggestions of the other group before performing again with the music.

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PRCS: 3.S.1 3.S.2b 3.S.5 3.S.6a **EQ/EU:** EQ1/EU1 EQ3/EU3 **T/A:** T1 A1 A2	• The ways humans use water to survive (farming, hydroelectric power, transportation, drinking). • Ways to protect water sources (prevent pollution, conserve water usage, personal hygiene). • Ways to measure liquids (gallon, quart, pint). • How to use transition words, content appropriate vocabulary (water words) and correct grammar.	• Hydroelectric power, dams • Hygiene (washing hands, disposing of waste away from drinking water, sanitation) • Pipes, faucet, sink • Transportation, ships, boats • Units of liquid measurement (gallon, quart, pint) • Waterways (rivers, lakes, ponds, ocean)		*Diary on Water Use* • The student keeps a daily diary of how he/she uses water and his/her estimations of how much. The student shares with class.	*For sample lessons related to the following group of learning activities, refer to the section 'Sample Lessons' at the end of this map.* *Ways Humans Use Water to Survive* • The teacher asks, "Why is water precious?" The student shares his/her ideas. Then the teacher reads aloud texts on people's relationships to water access ("One Well: The Story of Water on Earth," "If the World Were a Village" and "A Cool Drink of Water"). The student summarizes the main idea of the book. What is the lesson learned about water? What are examples from the book (use attachment, 3.6 Learning Activity – Main Idea and Details Organizer). • The student brainstorms ways of saving water at different parts of the water cycle (precipitation, run off, evaporation). The students work in groups to create a plan for an invention that cleans or preserves water. After groups present, the teacher shares ways people are doing just that in places of drought: http://thewaterproject.org/resources/download/water-cycle- water-crisis.pdf • The teacher asks parents about ways humans use water and has them share their findings with the class. • The student creates a foldable book with the main

					idea written across the cover of the three tab book and inside are three examples of the idea with details (water conversation, access to water, ways we use water). • The teacher models examples of a gallon, a quart and a pint by bringing in an empty milk jug (gallon), a quart of milk, and a Snapple bottle (pint). The student guesses how much water he/she uses for daily activities using the vocabulary: gallon, quart, and pint (see attachment: 3.6 Sample Lesson – Home Water Use Survey for examples of how much water is used for various household activities). • The student conducts a water hygiene survey of the school. The student goes around seeing if there is access to soap, places to wash hands and toilets. He/she then surveys other students about their use of water for personal hygiene. The teacher discusses the importance of keeping our water safe from human diseases (e.g. H1N1). **http://globalhandwashing.org/resources/schools/100-school- survey** • The teacher connects the school survey with the importance of hand washing and having access to water. **http://thewaterproject.org/resources/lesson-plans/hand- washing-hangups.php**

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PRCS: 3.R.FS.11b 3.R.FS.11c 3.R.FS.11d 3.R.FS.12 3.W.2 3.W.6 3.LA.1 3.LA.3a **EQ/EU:** EQ1/EU1 EQ4/EU4 **T/A:** T1 A4	• Ways to protect water sources (prevent pollution, conserve water usage, personal hygiene).	• Hygiene (washing hands, disposing of waste away from drinking water, sanitation) • Pipes, faucet, sink • Precious	*For complete descriptions, refer to the section 'Performance Tasks' at the end of this map.* ***Ways to Conserve Water: Survey Study and Poster Campaign*** • The student conducts research and compares/ contrasts water use and conservation locally and around the world. • The student creates a poster advocating ways of conserving water at home. The student puts posters around the school and makes presentations to other classes about the importance of preserving water.	***Vocabulary and Fluency Check*** • **Oral Assessment of Word Wall Vocabulary and Individual Vocabulary** (see attachment: Resource 1 – Oral Assessment for Vocabulary Acquisition). • **Fluency Check** The teacher has the student read aloud to check for fluency: words that the student has difficulty with, intonation, skipped words, and missed endings. The student must also correctly read multisyllabic words, be able to segment a word into individual phonemes and blend the phonemes back together (see attachment: Resource 8 – Paired Reading Fluency Check as an evaluation).	*For sample lessons related to the following group of learning activities, refer to the section 'Sample Lessons' at the end of this map.* ***Ways to Protect Water Sources*** • The teacher asks the student, "If water is precious, how can I help?" The student brainstorms ways to help preserve and protect his/her local water sources (this connects to the performance task of a home water survey). • If possible, the teacher does research about where the local water comes from and the student visits a treatment plant or the water source. The teacher has community members share ways in which they work to help protect the water. • The teacher reads aloud books on the importance of water (*Bring the Rain to Kapiti Plain, A River Ran Wild, The Watering Hole*) and the students find causes and effects of overconsumption, pollution or drought (see attachment: 3.6 Learning Activity – Cause and Effect Organizer). • The teacher asks, "Is bottled water a solution?" Many people turn to bottled water when they think their water is unsafe, but it is a quick fix that does not solve the

					global water problem. The student selects the pros and cons of bottled water and whether or not bottled water solves access to the clean water problem: **http://thewaterproject.org/bottled_water.asp** • The teacher cleans water with the sun by conducting this experiment: **http://www.scientificamerican.com/article/clean-dirty-water-with-the-sun-bring-science-home/** to show the student real life solutions of solar disinfection that is happening in many countries.

STAGE 3 – (Learning Plan)

Suggested Literature Connections

- **Thomas Locker**
  - *Water Dance*
- **Barbara McKinney**
  - *A Drop Around the World*
- **Rochelle Strauss**
  - *One Well: The Story of Water on Earth (Citizen Kid)*
- **David J. Smith**
  - *If the World Were a Village*
- **Bobbie Kalman**
  - *The Water Cycle*
- **Cynthia Overbeck Bix**
  - *Water Water Everywhere*
- **Arthur Dorros**
  - *Follow the Water from Brook to Ocean*
- **Merideth Hooper**
  - *The Drop in My Drink*
- **Joanna Cole**
  - *The Magic School Bus at the Waterworks*
- **Gordon Morrison**
  - *A Drop of Water*
- **Rebecca Olien**
  - *The Water Cycle First Facts, Water All Around)*
- **Herb Shoveller**
  - *Ryan and Jimmy : And the Well in Africa That Brought Them Together (Citizen Kid)*
- *Books about Water Access:*
- **Karen Lynn Williams**
  - *Four Feet, Two Sandals*

- **Mary Williams**
  - *Brothers in Hope: The Story of the Lost Boys of Sudan*
- **Barbara Kerley**
  - *A Cool Drink of Water*
- **Verna Aardema**
  - *Bring the Rain to Kapiti Plain*
- **Lynne Cherry**
  - *A River Ran Wild*
- **Graeme Base**
  - *The Watering Hole*
- **Thomas Locker**
  - *Where the River Begins*
- **Sandra Chishlom De Yonge**
  - *Spring Waters, Gathering Places*

Additional Resources

- Water cycle diagrams and cloze passages: **http://bogglesworldesl.com/watercycle_worksheets.htm**
- Lessons on Water Use, Water Cycle, and Water Access Issues: **http://www.seametrics.com/water-lesson-plans**
- Resources on Water Cycle and Water Conservation: **http://www.thameswater.co.uk/cps/rde/xchg/corp/hs.xsl/8299.htm**
- Lists of books to read aloud and activities you can download: **http://www.cas.muohio.edu/scienceforohio/water1/rr.html**

Performance Tasks

Water Cycle Poster Assessment

- After the student performs his/her water dance, he/she creates a poster with illustrations of the water cycle and the following vocabulary words: (evaporation, condensation, precipitation, clouds, water vapor, ground water, run off).

Ways to Conserve Water: Survey Study and Poster Campaign

- Step 1: The teacher asks, "How do we use water every day?" The student brainstorms ways in which we use water at home (cleaning, hygiene, food) and then conducts a survey to see how many gallons of water he/she uses in a day (see attachment: 3.6 Sample Lesson – Home Water Use Survey).
- Step 2: The student shares his/her data and makes a bar graph of the amount of water his/her family uses in a day.
- Step 3: Based on his/her bar graph, the student brainstorms ways of conserving water (e.g. not running water when brushing teeth, taking shorter showers, conserving water when washing dishes, not flushing the toilet every time you urinate).
- Step 4: The teacher compares the amount of water an average US citizen uses (see attachment: 3.6 Sample Lesson – Home Water Use Survey) with the amount of water citizens from around the world use. The students work in pairs to create bar graphs comparing countries' water usage by the gallon.
- Step 5: The teacher asks why people from the US use so much water and people from other countries use less. The teacher discusses access to clean drinking water by reading "Brothers in Hope: The Story of the Lost Boys of Sudan" and/or "Four Feet, Two Sandals." The teacher creates a Venn diagram comparing how we get water and how the characters in the books get water. The student brainstorms ways to help conserve water at home so that there is more fresh water for others.
- Step 6: The student creates a poster advocating for ways of conserving water at home. The student puts posters around the school and makes presentations to other classes about the importance of preserving water. The teacher makes sure that the student gives a proper introduction, offers an appropriate greeting and suitable farewell when presenting.
- Step 7: The student includes facts about how water is precious (e.g. less than 99% of the water is drinkable) and why we should conserve water to help others. Find facts from: **http://ga.water.usgs.gov/edu/watercycle.html** **http://thewaterproject.org/water_stats.asp**

Suggested Sample Lessons

- The teacher models the signal words of cause and effect with a fictional book: **http://www.readworks.org/lessons/grade3/cause-and-effect/lesson-1**
- Global Hand washing Day Survey on School hand washing and sanitation. The teacher has the students work in teams to interview classmates about the facilities and their hygiene to make suggestions for change: **http://globalhandwashing.org/resources/schools/100-school-survey**
- Water conservation resources for teachers: **http://floridaswater.com/education/teacher.html**
- Water conservation resources for students: **http://floridaswater.com/education/student.html**
- See attachment, 3.6 Sample Lesson – Home Water Use Survey