Unit 5/Week 3

Title: Saguaro Cactus

Suggested Time: 5days (45 minutes per day)

Common Core ELA Standards: RI.4.1, RI.4.2, RI.4.3, RI.4.7; RF.4.3, RF.4.4; W.4.2, W.4.4, W.4.7, W.4.8, W.4.9; SL.4.1, SL.4.4, SL.4.5; L.4.1, L.4.2

Teacher Instructions

*Refer to the Introduction for further details.*

**Before Teaching**

1. Read the Big Ideas and Key Understandings and the Synopsis. Please do **not** read this to the students. This is a description for teachers, about the big ideas and key understanding that students should take away **after** completing this task.

Big Ideas and Key Understandings

All living organisms, including plants and animals, depend on other living organisms for survival. [This selection tells of the dependence of many animals on the Saguaro Cactus for survival in the harsh Sonoran desert.]

Synopsis

The Saguaro Cactus is a giant cactus that grows in the Sonoran Desert. The Sonoran Desert is very hot and dry for most of the year making it a very difficult place for plants to grow. Yet, the Saguaro Cactus not only grows there but is the center of life for many animals.

1. Read entire main selection text, keeping in mind the Big Ideas and Key Understandings.
2. Re-read the main selection text while noting the stopping points for the Text Dependent Questions and teaching Vocabulary.

**During Teaching**

1. Students read the entire main selection text independently.
2. Teacher reads the main selection text aloud with students following along. (Depending on how complex the text is and the amount of support needed by students, the teacher may choose to reverse the order of steps 1 and 2.)
3. Students and teacher re-read the text while stopping to respond to and discuss the questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

Text Dependent Questions

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| **Text-dependent Questions** | **Evidence-based Answers** |
| On page 547, the author writes, “In the Sonoran Desert, there is an amazing sight.” To what is the author referring and why do you think the author introduces the selection in this way? | The author is referring to the saguaro cactus. . He begins the selection in this way to pique the student’s interest in the saguaro cactus and to emphasize the rarity of plants surviving in the harsh conditions of the desert. |
| Reread the last paragraph on page 548. The author writes, “For desert creatures, it is time to feast!” To feast means to have a very large meal. Which animals feast and what do they feast upon? Use the illustrations and the text to support your answer. | The animals are eating the fruit of the plant after it falls off of the saguaro cactus. Insects and birds feed on the juicy pulp of the red fruit and mice and rabbits eat the soft, black seeds. |
| Reread page 549. What part do animals and insects play in the growth of the saguaro cactus? | Mice and rabbits may pick up and transfer the seeds as they eat the fruit. Birds, bats, and insects may transfer pollen from flower to flower enabling a new cactus to grow. |
| Why is a saguaro cactus considered lucky if is “takes root” and grows? (Pg. 550) | The desert is a harsh place and most saguaros die in the harsh sun. They survive by being in the shade of a tree. |
| Use details from page 551 to describe adaptations the saguaro makes to help it survive. | The pleats on the skin allow the cactus to stretch as it takes in water. The roots do not grow deep. The stay shallow to catch rainwater. |
| The relationship between the gila woodpecker and the saguaro is one that is a benefit to them both. How does the woodpecker depend on the saguaro and how does the saguaro benefit the woodpecker? (Pg. 553) | The woodpecker uses the saguaro for a cool safe home. The woodpecker eats insects that would harm the saguaro. |
| What becomes of the nest of the gila woodpecker after it leaves? (Pgs. 555-556) | Elf owls may come and live in the hole for years. Other birds use it as a safe cool place to raise their families. White wing doves build cozy nests. Red tail hawks and horned owls also find homes. Lizards, insects and spiders also fill the empty nest. |
| What do you think the authors mean when he says the saguaro is “teeming” with life? (Pg. 555) | This helps the readers create a mental image of the cactus with many animals living in, on and around it. |
| What are some of the animals that benefit from the habitat surrounding the saguaro? How do these animals use the habitat? (Pg. 556) | Mule deer and other animals eat plants that grow in its shade. Other creatures stay safe from other animals by perching on the top. Coyotes and bobcats hunt in the brush around the saguaro. |
| Describe what happens after the saguaro dies. (Pg. 558) | It becomes a home for animals close to the desert floor. The cactus decomposes. Animals eat it. |

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|  | **KEY WORDS ESSENTIAL TO UNDERSTANDING** | **WORDS WORTH KNOWING**  General teaching suggestions are provided in the Introduction |
| **TEACHER PROVIDES DEFINITION**  not enough contextual clues provided in the text | Page 547 - scrub brush  Page 549 - take root  Page 551 - folds, pleats  Page 555 - spines  Page 556 - prey  Page 553 - boot  Page 550 - mesquite | Page 550 - harsh  Page 558 - habitat, topple, decompose  Page 551 - shallow |
| **STUDENTS FIGURE OUT THE MEANING**  sufficient context clues are provided in the text | Page 548 - feast  Page 550 - nectar, pollen  Page 555 - teeming  Page 556 - dine | Page 549 - pulp |

Vocabulary

Culminating Task

* Re-Read, Think, Discuss, Write

*The Saguaro cactus and the desert animals have a symbiotic relationship. A symbiotic relationship is when two organisms of different species live together, often to their mutual benefit. Using details from the text, explain how the cactus and the desert animals benefit from sharing life together.*

Answer: The saguaro cactus in the Sonoran Desert is one of the best examples of a symbiotic relationship in a North American desert. Many other plants and animals depend upon this cactus for food and shelter. Woodpeckers, particularly the Gila woodpecker, like to nest in this colossal cactus that can grow over fifty feet tall and live for over 200 years. Not only do the saguaro’s prickly spines prevent predators from harming the young birds in the nesting cavity; the saguaro’s thick walls provide a climate-controlled home. Every year, when the woodpecker abandons the nest to build a new home, other house hunters, such as other bird species, lizards, or bats, are waiting in the wings to move into the vacant nesting hole. The saguaro is a virtual bird hotel, as over 30 species of birds are known to nest in old woodpecker cavities in the cactus, including cactus wren and curve-billed thrasher. This generous host also feeds some of the creatures that live in or near the cactus. Birds like the Inca dove eat the blossoms, mule deer and javelina eat the fruit, and rodents and insects eat the seeds. All the species, including the saguaro, benefit from this mutualistic relationship. The birds and other inhabitants eat insects that could bring disease to the cactus. In the evening, the saguaro’s white and yellow blossoms open, attracting nocturnal pollinators like moths. The blossoms stay open until the next afternoon so other insects and birds also have the opportunity to feed on the plant's nectar and pollinate the cactus.

Additional Tasks

1. *Many animals depend on the saguaro cactus for food and shelter. Complete the chart below with evidence from the text of these animals and their dependence on the saguaro cactus.*

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| **Animal** | **How the animal depends on the saguaro cactus** |
| *1. Insects* | *1. Eat the sweet, juicy pulp of the saguaro’s fruit* |
| *2. Birds* | *2. Eat the sweet, juicy pulp of the saguaro’s fruit* |
| *3. Mice* | *3. Eat the seeds* |
| *4. Rabbits* | *4. Eat the seeds* |
| *5. Birds, bats, insects* | *5. Drink the nectar* |
| *6. Gila woodpecker* | *6. Drills a hole in which to build its nest* |
| *7. Elf owls* | *7. Live in the holes made by the gila wookpecker* |
| *8. Starlings* | *8. Live in the holes made by the gila wookpecker* |
| *9. White tail doves* | *9. Build nests on the branches* |
| *10. Red-tailed hawks* | *10. Build nests on the saguaro* |
| *11. Horned owls* | *11. Build nests on the saguaro* |
| *12. Insects* | *12. Fill the empty nests and feed on the cactus* |
| *13. Lizards and spiders* | *13. Fill the empty nests and feed on the insects* |
| *14. Mule deer and other animals* | *14. Eat the plants that grow in the shade of the cactus* |
| *15. Ringtail cat* | *15. Perch on top to stay safe from coyotes and spy on small prey* |
| *16. Coyotes and bobcats* | *16. Hunt in the brush around the saguaro* |
| *17. Scorpions, rattlesnakes, and horned lizards* | *17. Come to look for food and shelter after the saguaro dies* |
| *18. Javelina* | *18. Eats the cactus and plants under it* |

1. Choose one plant or animal from page 560. Conduct a short research project, where you use multiple books or online resources to determine the role of this plant/animal in the web of life in the Sonoran Desert. When researching, take notes from each source and compile your findings into a short presentation for your classmates. Explain what you have learned about your plant or animal and use at least one visual aid during your presentation. Provide a list of sources.

Supports for English Language Learners (ELLs)

to use with Basal Alignment Project Lessons

When teaching any lesson, it is important to make sure you are including supports to help all students. We have prepared some examples of different types of supports that you can use in conjunction with our Basal Alignment Project Lessons to help support your ELLs. They are grouped by when they would best fit in a lesson. While these supports reflect research in how to support ELLs, these activities can help ALL students engage more deeply with these lessons. Note that some strategies should be used at multiple points within a lesson; we’ll point these out. It is also important to understand that these scaffolds represent options for teachers to select based on students’ needs; it is not the intention that teachers should do *all* of these things at every lesson.

**Before the reading:**

* Read passages, sing songs, watch videos, view photographs, discuss topics (e.g., using the [four corners strategy](http://www.theteachertoolkit.com/index.php/tool/four-corners)), or research topics that help provide context for what your students will be reading. This is especially true if the setting (e.g., 18th Century England) or topic (e.g., boats) is one that is unfamiliar to the students.
* Provide instruction, using multiple modalities, on selected vocabulary words that are *central to understanding the text*. When looking at the lesson plan, you should note the Tier 2 words, particularly those words with high conceptual complexity (i.e., they are difficult to visualize, learn from context clues, or are abstract), and consider introducing them ahead of reading. For more information on selecting such words, go [here](https://achievethecore.org/page/3167/selecting-and-using-academic-vocabulary-in-instruction). **You should plan to continue to reinforce these words, and additional vocabulary, in the context of reading and working with the text. (See additional activities in the During Reading and After Reading sections.)**

**Examples of Activities:**

* Provide students with the definition of the words and then have students work together to create [Frayer models](http://www.theteachertoolkit.com/index.php/tool/frayer-model) or other kinds of word maps for the words.
* When a word contains a prefix or suffix that has been introduced before, highlight how the word part can be used to help determine word meaning.
* Keep a word wall or word bank where these new words can be added and that students can access later.
* Have students create visual glossaries for whenever they encounter new words. Then have your students add these words to their visual glossaries.
* Create pictures using the word. These can even be added to your word wall!
* Create lists of synonyms and antonyms for the word.
* Have students practice using the words in conversation. For newcomers, consider providing them with [sentence frames](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion) to ensure they can participate in the conversation.
  + Practice spelling the words using different spelling practice strategies and decoding strategies. Students could take turns spelling with a partner.
* Use graphic organizers to help introduce content.

**Examples of Activities:**

* Have students fill in a [KWL chart](http://www.nea.org/tools/k-w-l-know-want-to-know-learned.html) about what they will be reading about.
* Have students research setting or topic using a pre-approved website and fill in a chart about it. You could even have students work in groups where each group is assigned part of the topic.
* Have students fill in a bubble map where they write down anything that they find interesting about the topic while watching a video or reading a short passage about the topic. Then students can discuss why they picked the information.

**During reading:**

* Read the text aloud first so that ELLs can hear the passage read by a fluent reader before working with the text themselves.
* Allow ELLs to collaborate in their home languages to process content before participating in whole class discussions in English. Consider giving them the discussion questions to look over in advance (perhaps during the first read) and having them work with a partner to prepare.
* Encourage students to create sketch-notes or to storyboard the passage when they are reading it individually or with a partner. This will help show if they understand what they are reading as they are reading it.
* Ask questions related to the who, what, when, why, and how of the passage. For students that may need a little more help, provide them with [sentence stems](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion).
* Continue to draw attention to and discuss the words that you introduced before the reading.

**Examples of Activities:**

* Have students include the example from the text in their glossary that they created.
* Create or find pictures that represent how the word was used in the passage.
* Practice creating sentences using the word in the way it was using in the passage.
* Have students discuss the author’s word choice.
* Use graphic organizers to help organize content and thinking.

**Examples of Activities:**

* Have students fill in a chart to keep track of their 5ws while they read to help them summarize later and figure out the central idea of a passage.
* It may again be beneficial to have somewhere for students to store new words that they encounter while reading the text. Students could use a chart to keep track of these new words and their meanings as they read.
* If you had students fill in a KWL, have them fill in the “L” section as they read the passage.
* Utilize any illustrations or text features that come with the story or passage to better understand the reading.
* Compare/contrast the passage with what the illustrations convey about the passage. Have students consider if the illustrations look the way they visualized the passage in their own minds or if the passage matches their predictions based on the illustrations.
* Identify any text features such as captions and discuss how they contribute to meaning.

**After reading:**

* Present directions for any post-reading assignments orally and visually; repeat often; and ask English Language Learners to rephrase.
* Allow ELLs to use English language that is still under development. Students should not be scored lower because of incorrect spelling or grammar (unless the goal of the assignment is to assess spelling or grammar skills specifically). When grading, be sure to focus on scoring your students only for the objective(s) that were shared with students.
* Scaffold questions for discussions so that questioning sequences include a mix of factual and inferential questions and a mix of shorter and more extended responses. Questions should build on each other and toward inferential and higher-order-thinking questions. There are not many factual questions already listed in the lesson instructions, so you will need to build some in as you see fit. More information on this strategy can be found [here](https://achievethecore.org/aligned/creating-sequencing-text-dependent-questions-support-english-language-learners/).
* Reinforce new vocabulary using multiple modalities

**Examples of activities:**

* Using the words that you had students work with before reading, have students write sentences in reference to the passage that you just finished reading.
* Require students to include the words introduced before reading in the culminating writing task.
* For newcomers, print out pictures that represent the words that you focused on and have students match the words to the pictures.
* Based on different features of the words, have the students sort them into different categories and explain their choices. For example, the students could sort the words by prefixes, suffixes, connotation, etc.
* After reading the passage, continue to examine important sentences (1–2) in the text that contribute to the overall meaning of the text. Guide students to break apart these sentences, analyze different elements, and determine meaning. More information on how to do this, including models of sentence deconstruction, can be found [here](https://achievethecore.org/page/3160/juicy-sentence-protocol).
* Provide differentiated scaffolds for writing assignments based on students’ English language proficiency levels.

**Examples of Activities:**

* For all students, go over the prompt in detail, making sure to break down what the prompt means before having the students get to work. Then have the students explain the directions back to you.
* Have students create an evidence tracking chart during reading, then direct them to look back over their evidence chart and work with a group to see if their evidence matches what the rest of the class wrote down. If some of the chart does not match, students should have a discussion about why.
* For students who need more support, model the proper writing format for your students and provide them with a properly formatted example for reference.
* For newcomers, you may consider creating sentence or paragraph frames to help them to write out their ideas.
* To further discussion about the passage, have students create their own who, what, when, where, why, and how questions related to the passage to ask each other and have students pair up and practice asking each other the questions. If available, pair students of the same home language to support the use of language still under development.