Unit 3/Week 4

Title: Seeing Earth From Space

Suggested Time: 5 days (45 minutes per day)

Common Core ELA Standards: RI.5.1, RI.5.2, RI.5.3, RI.5.4, RI.5.6, RI.5.7, RI.5.8, RI.5.10, RF.5.4, W.5.1.a-d, W.5.4, W.5.5

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

The views of Earth in comparison to the views from space are very different.

Synopsis

The ability to see Earth from space helps scientists to understand both how the planet works and how human activities are affecting the Earth.

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** | **Answers** |
| Why is this article titled “Seeing Earth from Space”? | This article is a photo-essay, a unique genre that combines photographs and text. All the photos in it were taken from space. |
| “Their photographs and others show us earth as we can never see it for ourselves” (pg. 324). What is it that the astronauts can see clearly that is hard for us to believe? | That earth itself, and therefore all of us are flying through space, in constant motion as we journey along on our orbit. You can also see clearly that earth is a sphere (round). |
| “Islands glide by, tiny outposts in the seas that cover two-thirds of earth.” Translate this sentence (re-state it in your own words). | Answers will vary, but students should be expected to capture the idea that most of the earth is water and that islands seem to be floating in them, the land much smaller than the watery parts. |
| “Once an island is born, life arrives.” (pg 328). What does this mean? Use the rest of the paragraph to explain what the author is talking about. | Living things find their way to the island and settle there: seeds and plants wash up on shore. Insects and more seeds arrive by wind. Birds fly to the island and bring more seeds. Even humans might come and settle there. |
| Explain how the Hawaiian Islands were formed (page 329) | The big island of Hawaii was originally two islands, one built by the volcano Mauna Loa, and the other by Mauna Kea. Huge lava flowed from Mauna Loa linked the two islands and made them one. |
| Why is there a picture of a spaceship with dots on nearly every page of this article? | Answers will vary, but students should be able to say that it is a reminder of the fact that this is a discussion of what earth looks like from the point of view of a spaceship out in space. |
| Explain what goes on with the earth’s plates. What do they do and what does this action cause? (Page 333) | The plates are floating on the magma, the hot and liquid layer under the plates. They move on the magma and this movement sometimes means the plates bang into each other. This can cause the land at the edges to crumple up and form new mountains. |
| To a person standing on its surface, the Earth appears large and sturdy. From space it appears small and fragile. What argument does the rest of the article make starting with these two sentences? (Pp 336-339) | From this point on, the article argues that the earth does not have the boundaries we who live on it have created. Instead, it is fragile, and needs our attention and help. We need to work together to make this happen. The final paragraph makes this most clear. Students may struggle with this idea, but it is important they be lead through the evidence. |

Vocabulary

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|  | **KEY WORDS ESSENTIAL TO UNDERSTANDING**  Words addressed with a question or task | **WORDS WORTH KNOWING**  General teaching suggestions are provided in the Introduction |
| **TEACHER PROVIDES DEFINITION**  not enough contextual clues provided in the text | Satellite, astronauts, sensors (324)  Air pollution (327)  Eruptions (328)  Craters, lava (335) | Settle (328)  Colonies (331)  Dim, barren, outpost (335)  Awed, Soviets, sturdy, fragile, felled, eroding, tarry (336)  Boundaries, meander, boundless (337) |
| **STUDENTS FIGURE OUT THE MEANING**  sufficient context clues are provided in the text | Orbit/orbiting ( 324)  Unseen (325)  Island (328)  Volcano, shelved off, corals, reef, lagoon atoll (331)  Masses, plates (333)  Atmosphere (335, defined on 337) with:  Stratosphere, ionosphere, space (337) | Masked, instruments, whirling (324)  Glinting (327)  Generations (331)  Collided, collision, folded, tilted (333)  Ability, affecting (334)  Wondrous (338)  Life-support (338) |

Culminating Task

* This article has lots of pictures and lots of writing. Which of these dominates (gets a more important place in) the article? Write an essay that has an opening paragraph that establishes your position and then use at least three examples from the article to argue your case in the main part of your essay. Finish by showing how you have proved your case. In providing examples, you can refer to page numbers, but you must also describe the photos and paraphrase the text to support your position. You can use any part of the materials. Remember, your job is to make and prove this argument, not just to describe the article and the beautiful photographs.

(Note to teacher: this is a rigorous task that will allow students to develop what they really believe, but then require them to make a case. Making their case will send them back over and over again to re-read the photo-essay and to ponder the relationship between the photos and the text. This is a deep way for students to practice both reading standard 7 and writing standard 3 and is worth the time it will take. It *will* take a lot of time for students to do this well, and they will need support from you.

Answers will vary, but you should look for students to use textual and picture evidence and to refer clearly to the article. The essay should have a three part structure.

Additional Activities

There are *many* challenging and beautifully written passages here. Ask students to pair up and select a photo they find compelling and to re-read aloud to each other the text that goes with that picture. Then they could present their favorites to the class, as time allows. This would support fluency, rereading, cooperative learning and public speaking.

Note to Teacher

This text is challenging, especially so early in the school year. Students may need to have more of this read aloud and chunked by photo and text more than usual. The writing task and several of the questions will need lots of support, especially if this is the first extended writing you have done, or the first time you wrestled with a text this challenging with your students.

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.