Unit 4/Week 3

Title: A Tree Is Growing

Suggested Time: 5 days (45 minutes per day)

Common Core ELA Standards: RI.3.1, RI.3.2, RI.3.3, RI.3.4, RI.3.5, RI.3.7; W.3.2, W.3.4; SL.3.1, SL.3.2; L.3.1, L.3.2

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

Trees are made up of many important parts that grow and change.

Synopsis

This informational text describes the ways in which trees are made up of many important parts that grow and change. A tree’s leaves help the tree to grow by making food for the tree. The tree’s roots grow underground to hold the tree in place and to bring water to it. The outer layer of bark does not grow, but just under the bark is a layer called the cambium. As the cambium grows, the tree gets wider. Flowers grow on trees in the spring, and parts of the flowers become seeds. In cooler climates, trees stop growing in the autumn. Many trees have leaves that change color and fall to the ground. Trees rest in the winter, but begin the cycle over again in the spring.

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** |
| Why does the author tell us a big tree may seem like it has always been big? | The author is calling our attention to the idea that a tree grows and changes. This is the main idea of the selection. |
| What is the important information on this page? | Leaves make a special kind of sugar that the tree uses for food. |
| Use the information in the text to define tree sap. Why is tree sap important? | Tree sap is juice inside a tree that is mixed with the sugary water made in leaves. Sap can be found in the trunk and branches of a tree.  The sap carries the sugary water, which is food for the tree, throughout the tree.  Some types of sap can have a strong smell, which protects the tree from insects. |
| What do you learn about the Baobob tree from this illustration and caption? | The Baobob tree is able to survive during times where there is plenty of water and during dry times.  The tree at the top is storing extra water. Its trunk is round. At this time, the tree is able to store plenty of water. The tree at the bottom is thinner. This must be a dry time. The tree has used the water stored in its trunk. |
| Use information from the text to describe what is happening in this diagram. | This diagram shows water traveling up a branch and to the leaves of a tree. The text says that water moves up as if it is being sucked through a straw. |
| What are the main jobs of a tree’s roots? | The tree’s roots hold the tree in place and absorb water from the soil to carry to the tree. The tree’s roots absorb minerals that help the tree to grow. These minerals are dissolved in the water. |
| How do trees benefit from mushrooms? How do mushrooms benefit from trees? | Mushrooms help the tree to get minerals. A tree’s roots bring water to mushrooms. |
| Define cambium. | The cambium is a layer of growing bark. It is located underneath the outer bark and the phloem. |
| Why does the author show us two trees along the left-hand side? How are they the same? Different? | In cooler climates, the cambium grows only in the spring and summer. The top illustration shows that this results in growth rings that can be used to find the age of a tree. The bottom illustration shows a tree in the tropical rain forest. In tropical rain forests, the cambium grows all year long. Therefore, there are not growth rings visible within these trees. |
| The author writes “If you find a mark on a tree trunk today, that mark would stay at the same height for as long as the tree lives.” What fact about the growth of a tree is the author trying to make clear? | A tree grows taller only when the tips of its top branches grow upward. |
| What is pollen? Why is pollen important? | Pollen is a powder that is found on a flower. When pollen from one flower is spread to certain parts of another flower, seeds can grow. |
| Many acorns have fallen from the oak tree in this picture. Why does this oak tree produce so many seeds? | Most of these seeds will not grow into new trees. Most of these acorns will be eaten, crushed, will rot, or they will remain in a place where they cannot take root. Only some of these seeds will be carried away and dropped or buried by animals to grow in new places. |
| When and why do leaves change color? | Leaves change color in autumn. They change color because leaves stop making sugary food and lose their green color. When they lose their green color, you can see the red, brown, yellow, and orange colors that are also in the leaves. |
| How are trees that grow in cool climates different from trees that grow in warmer climates? | Trees that grow in cool climates stop growing in autumn. They lose their leaves and rest in the winter. Trees that grow in places such as the tropical rain forest grow all year long. They do not lose their leaves or have a time of rest. |
| What idea does the author leave us with? How does this fit with the rest of the text? | Trees rest in winter. They may appear to be dead, but in the spring the cycle of growth described in this selection will begin again. |

Vocabulary

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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 | buds  throughout  absorb  climate, rings, tropical  branches  coverings | oozes  sugary  columns  bicolored  attracted, brush  dangling, clumps  sprout  bare, rustling |
| **STUDENTS FIGURE OUT THE MEANING**  sufficient context clues are provided in the text | store  passages  dissolve  cork, spines |  |

Culminating Tasks

* Re-Read, Think, Discuss, Write
* *(Provide students with a diagram of a tree.) Label all of the tree’s important parts. Then, look over your diagram. For each tree part, explain 1) what makes this part essential to the tree as a whole and 2) how this part grows and changes as the tree grows and changes.*

Answer:

Leaves: These begin as buds and unfold into leaves during the spring. Leaves make sugar, which is used by the tree as food.

Roots: The roots spread out far underground as the tree grows; a little farther than the tree’s branches. The roots hold the tree in place and absorb water and carry it into the tree.

Flowers: These grow on trees in the spring; flowers attract animals that help to spread pollen. The mixing of pollen in parts of the flower allows a seed to grow, and seeds grow new plants.

Bark or cambium: Bark is the tree’s skin and protects it. As the tree grows, it adds one new layer or ring of bark each year. This means that not only does the tree grow up (taller), but it also grows out (wider).

Trunk and branches: The trunk and branches are passageways that carry water and minerals to all parts of the tree. The top branches grow upward as the trees grows, and the low branches may fall off.

Additional Activities

* *This text includes a wide variety of text and graphic features. Text features include captions and words in italics. Graphic features include illustrations and diagrams. With a partner, look back through the selection. Create a t-chart. One side will be labeled text features, and the other side will be labeled graphic features. Note the types of text and graphic features you find. Then, discuss the kinds of extra information the text and graphic features add. How do the text and graphic features help you better understand the text?*

Answer: The graphic features help you clearly picture what the author is explaining with words. Also, all of the illustrations and caption clarify the information presented in the main text and also add other interesting facts and bits of information. For example, there are pictures and explanations of the baobab tree storing water in its trunk. The illustration compares what a baobab tree looks like in both the wet season and the dry season.

* *How do trees adapt to the climate?*

Answer: In colder climates trees become dormant in the winter months. Many trees stop making food and lose their leaves. In warmer climates the tree grows all year long. It is hard to tell how old these trees are because there are no growth rings. In places with a dry season, some trees, like the Baobob tree, store water in the lower part of the trunk and use this water until the rainy season starts. In swamps and wetlands, roots can grow down from branches, forming columns of roots that support the tree.

Note to Teacher

* This text contains an abundance of Tier III domain-specific vocabulary. It will be important for students to understand these words, in addition to the Tier II academic vocabulary words presented in the vocabulary chart.
* Many specific examples of flora (plants) and fauna (animals) are included in the diagrams of this informational text. Students could choose a plant or animal pictured in the text and complete a short research project on it. Additionally, teachers could make numerous connections to science including experiments on the needs of plants, plant parts, and plant functions.

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**“A Tree Is Growing”**

1. Why does the author tell us a big tree may seem like it has always been big?
2. What is the important information on this page?
3. Use the information in the text to define tree sap. Why is tree sap important?
4. What do you learn about the Baobob tree from this illustration and caption?
5. Use information from the text to describe what is happening in this diagram.
6. What are the main jobs of a tree’s roots?
7. How do trees benefit from mushrooms? How do mushrooms benefit from trees?
8. Define cambium.
9. Why does the author show us two trees along the left-hand side? How are they the same? Different?
10. The author writes “If you find a mark on a tree trunk today, that mark would stay at the same height for as long as the tree lives.” What fact about the growth of a tree is the author trying to make clear?
11. What is pollen? Why is pollen important?
12. Many acorns have fallen from the oak tree in this picture. Why does this oak tree produce so many seeds?
13. When and why do leaves change color?
14. How are trees that grow in cool climates different from trees that grow in warmer climates?
15. What idea does the author leave us with? How does this fit with the rest of the text?