**Fourth Grade- Ecosystems**

**SOL:** 4.5 The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem. Key concepts include

1. organization of populations, communities, and ecosystems and how they interrelate;
2. flow of energy through food webs;
3. habitats and niches;
4. changes in an organism’s niche at various stages in its life cycle; and
5. influences of human activity on ecosystems.

**Rationale:**

The topic of ecosystems is explored across grade levels, but not focused on by the Virginia SOLs until fourth grade. I found a collection of sources that broadly focus on ecosystems while other focus on specific kinds of components of ecosystems. This gives students a wide arrange of topics and types of sources, ranging from textbooks to nonfiction picture books to videos.

**Linguistic Sources**

**Below grade level** (2nd to 3rd):

***Science: A Closer Look 3***

Hackett, J., & Daniel, L. (2011). *Science*. Columbus, OH: Macmillan/McGraw-Hill.

This textbook has two chapters on ecosystems for students to explore within one unit. The unit begins with a short story and journaling activity to get students brains activated. The textbook also highlights key vocabulary words with definitions and pictures prior to beginning the unit. The charts and pictures support the text. Having a Lexile range of 610 to 800, the textbook is suitable for third graders and up. The arrangement of different texts and topics make the textbook engaging for students.

***See Through the Forest***

Selsam, M., & Lubell, W. (1956). *See through the forest*. [New York]: Harper.

This narrative non-fiction book takes the reader through the ecosystem of a forest with engaging descriptions and stories. The book is very informative, but in a way that keeps the reader interested while learning. This would be a great book club book or class read aloud. With a Lexile of 610-800, it is best suited for our third-grade readers. The colorful pictures bring the descriptions of things to life on the page. this book is very engaging while educationally supportive.

***Animal Homes***

James, D., & Lynn, S. (2007). *Animal homes*. Halifax, N.S.: Atlantic Provinces Special Education Authority Resource Centre for the Visually Impaired.

With a Lexile range of 410-600, this picture book is a great introduction of ecosystems for second graders. As ecosystems don’t appear in SOLs prior to fourth grade, the topic about animals’ homes is a great way to begin the discussion. This picture book goes into details what the homes of various animals, all have different homes. The visuals in the book compare and contrast cartoons and real-life pictures. This is a good way for students to make lasting connections with whatever form they are comfortable with.

***Life in a Bucket of Soil***

Silverstein, A., & Silverstein, V. (2013). *Life in a Bucket of Soil*. Dover Publications.

This book explores the different components that can be found in an actual bucket of soil. This includes living and non-living things, which are components that make up an ecosystem. The book has a Lexile range of 610-800, making it best for about third graders. As this may a tad high, the book includes diagrams that help to support the text. It includes visuals for the different organisms that are talked about. This is also a good introductory book to ecosystems. It could be used as an inquiry-based activity, asking students what components make up an ecosystem.

**On grade level** (4th grade):

**ANCHOR TEXT: *Science Fusion 4***

DiSpezio, M., Frank, M., Heithaus, M., & Ogle, D. (2012). *Science Fusion 4*. Orlando, Fla.: Houghton Mifflin Harcourt.

This science textbook has a unit on energy and ecosystems. It explores different levels and topics within an ecosystem with interactive activities throughout the unit. It begins the minilessons with questions to guide the students thinking. With a Lexile range of 610-800, this is a great anchor chart for fourth graders. It includes a full overview of ecosystems in a way that is on reading level. The pictures are informative while the text is easy to comprehend.

***The Land We Live On***

Fenton, C., & Fenton, M. (1966). *The land we live on* (2nd ed.). Garden City, New York: Doubleday & Company, Inc.

With a Lexile range of 610-800, this informational book is a great resource for fourth graders inquiring about ecosystems. If focuses on different types of land and different locations on the globe. This book would be good from higher level thinking about how different aspects of ecosystems interact with the different land masses. For example, students could decide which animals would be best suited there and why. The book also contains real photographs, so students have a solid visual about the land they are reading about.

***Rain Forests***

Green, J. (1999). *Rain forests*. Milwaukee: Gareth Stevens Pub.

This informative picture book is full of information specifically for the ecosystems of rain forests. It explores and informs different components of rainforests, while also exploring different locations. The text is readable for fourth graders, having a Lexile range of 810-1000. As the text does span with a Lexile range higher than some average fourth grade readers, the pictures do a good job to support the text. The chapters also have fun and engaging activities for students to complete to support what they are reading. This is a good way for students to make connections.

***Oceans: The Vast, Mysterious Deep***

Harrison, D., & Nathan, C. (2003). *Oceans: The Vast, Mysterious Deep*. Honesdale, Pa.: Boyds Mills Press.

This on level, non-fiction picture book focuses on the ecosystem specifically of the ocean. This gives students detailed information pertaining to one ecosystem, hopefully sparking their curiosity about other particular ecosystems. With a Lexile range of 810-1000, the book included many visual supports that make this book appropriate for the fourth grade. Visuals include pictures and maps pertaining to the ocean.

**Above grade level** (5th and above):

***Science Fusion 5***

DiSpezio, M., Frank, M., Heithaus, M., & Ogle, D. (2012). *Science Fusion 5*. Orlando, Fla.: Houghton Mifflin Harcourt.

This textbook is a good resource for students about ecosystems. With a Lexile range of 810-1000, it is suitable for fifth grade readers. As it is a write-in students edition textbook, students can follow along with the text and write I their answers to questions and activities pertaining to ecosystems. Active reading strategies are including in the text to ensure students are following along and thinking about the text. At the end of each minilesson about ecosystems, “Sum It Up” activities and “Brain Checks” are included for students. It explores different details pertaining to ecosystems around the world.

***Science Projects in Ecology***

Simon, S., & Jakubowski, C. (1972). *Science Projects in Ecology*. New York: Holiday House.

This book includes a variety of science projects that students can compete on their own or with adults for inquiry-based learning. The different projects explore different aspects of ecosystems, such has the life of a forest and food webs. The Lexile range is 1010-1200, so it best suited for sixth graders and above. The projects include the materials needed, “project pointers” that help provide background knowledge, and extension activities for the science project. These inquiry-based learning activities paired with the information in the book gives students a unique learning experience.

***Life Science***

Trundle, K. (2011). *National Geographic: Life science*. [Carmel, Calif.]: National Geographic School.

This *Life Science* textbook has a full unit on ecosystems along with subtopics, like humans’ impact on ecosystems. The text has a Lexile range of 810-1000, but the text does not have a lot of visual supports to accompany it, so it is best for fifth grade and above. However, the text is mostly readable. Vocabulary words are highlighted, and a glossary is included in the textbook. it would best be used as a review textbook or to gather broad information that can be further researched later.

**Types of Environmental Ecosystems**

Harris, A. (2018). Types of Environmental Ecosystems. Retrieved 25 September 2019, from https://sciencing.com/types-environmental-ecosystems-8640.html

This website describes various different types of ecosystems ranging from the tundra to grasslands. The website also has relevant videos placed within, along with embedded link to further information regarding a specific topic. The text has a Lexile range of 1010-1200. It makes the website a good source for students in the fifth grade and above. Providing an online source can help to engage older students and give them choice between websites and textbooks.

 **Nonlinguistic Sources**

Video: Learning About Ecosystems

DeMaio. (2014). *Learning About Ecosystems* [Video]. YouTube. Retrieved from <https://www.youtube.com/watch?v=tQjbqgPxKc0>.

This 9-minute video is silly and engaging for students. The teacher in the video visits different ecosystems and talks to “friends”, or things that really don’t talk. The video is creatively made and informational about different types of ecosystems. When taking about different information, some text pops up for students to follow along with if they would like. Videos are a good way to begin student engagement.

Song: Ecosystems Song

Parr. (2011). *Ecosystems Song* [Online video]. YouTube. Retrieved from <https://www.youtube.com/watch?v=GUY_-LK_lOc>

This is a fun song that a teacher made for his class about ecosystems. It uses vocabulary along with simple definitions to describe what happens in an ecosystem. By putting the information to a catchy tune, students can think back on this and recall the information. It could also be used an as example for a project, like students creating their own song.