

---

## Structures of Life: 3<sup>rd</sup>/4<sup>th</sup> Grade Science Unit

---

**Note:** Through observing, comparing categorizing and caring for organisms, students learn to identify properties of plants and animals, sort and group organisms based on properties they can observe, and understand the characteristics of an organism and the life cycle of an organism. They explore seeds and observe lima beans growing. They observe and record the structures of a crustacean – a crayfish. They observe and compare an insect – a bess beetle to the crayfish.

### Core Books

Aloian, Molly, and Bobbie Kalman. *The Life Cycle Of A Beetle*. New York: Crabtree Pub., 2004. Great information on beetles in general including kinds of beetles, characteristics, life cycle, habitat, food, defenses, dangers to beetles and how we can help them. Also has a table of contents, index, and glossary.

Ganeri, Anita. *From Bean To Bean Plant*. Chicago: Heinemann Library, 2006. Using great photos, the life cycle from planting beans through the fall when the plant dies is followed. Great photos help the reader understand the simple explanations of concepts like pollination, photo synthesis. Includes table of contents, glossary, index, and more books to read.

Ganeri, Anita. *From Seed To Apple*. Chicago: Heinemann Library, 2006. Shows and explains the life cycle of an apple tree from the seed to a tree with ripe apples including pollination and photo synthesis. Goes with both fruit and seeds in the first two investigations of the life structures unit.

Richards, Jean. *A Fruit is a Suitcase for Seeds*. Minneapolis: MillBrook Press, 2002. With beautiful watercolors, fruits are compared to suitcases - suitcases for seeds. The reader is shown that seeds can travel inside their fruit, some fruits have one seed, some have many and that every time you eat a fruit, you're really eating a suitcase for seeds. Includes questions and answers in the back.

Kalman, Bobbie, and Rebecca Sjonger. *The Life Cycle of a Crayfish*. St. Catharines, ON: Crabtree, 2007. Includes information about kinds of crayfish, structures of their bodies, habitat, life cycle, homes, and predators. Also has a table of contents, index, and glossary. Great format for teaching nonfiction conventions.

## Additional Titles

- Crenson, Victoria. *Horseshoe Crabs and Shorebirds : the Story of a Food Web*. New York: Marshall Cavendish, 2003. The life cycle of horseshoe crabs is told as a story. The crabs come ashore to lay their eggs which provides an egg feast for many migratory shore birds and other animals. The eggs that aren't eaten hatch as larvae and swim back out to sea where they shed their shells and grow bigger ones until they are adults.
- Hartley, Karen, Chris Macro, and Philip Taylor. *Beetle*. Chicago: Heinemann Library, 2008. Simple text and great photos give a great overview of beetles. Includes table of contents, glossary, index, more books to read and bug map.
- Kalman, Bobbie, and Kathryn Smithyman. *The Life Cycle of a Tree*. New York: Crabtree Pub., 2002. Tells the life cycle of trees with several pages on seeds – how they germinate, how fruit seeds are pollinated, and how seeds travel.
- Kalman, Bobbie. *What is a Plant?*. New York: Crabtree, 2000. Explains what is (and isn't) a plant, how plants benefit animals, parts of plants, how they make food, how plants have adapted to stay alive, how plants grow, how people use plants, and how some are threatened. Shows usual and unusual plants. Includes table of contents, index, glossary and experiments
- Morris, Ting, and Neil Morris. *Growing Things*. North Mankato, Minn.: Sea-To-Sea Publications, 2007. Directions with pictures are given for simple activities with plants. Information is given in fact boxes. Great photos in the fact boxes. Includes table of contents, index, glossary and resources.
- Nadeau, Isaac. *Plant Development and Growth*. New York: Rosen Pub. Group's PowerKids Press, 2006. General information on plants. Text on left side of page isn't real appealing, but the photos and drawings on the right side with labels and captions is very appealing. Has information on seeds germinating and how some seed move.
- Stewart, Melissa. *A Parade of Plants*. Minneapolis, MN: Compass Point Books, 2004. Activities with great photos direct readers to observe, make drawings and take notes as they do experiments with plants.

## Related Literature

Bulion, Leslie. *Hey There, Stink Bug!*. Watertown, MA: Charlesbridge, 2006. Using many different poetry forms, this book is all about bugs. Each page has a poem and then information about that bug in a different font. Includes a table of contents, glossary and poetry notes to tell about each form.

Lasky, Kathryn. *One Beetle Too Many : The Extraordinary Adventures of Charles Darwin*. Somerville, Mass.: Candlewick Press, 2009. As a child Darwin was a great collector of beetles and observer, although his father didn't value these traits. Charles had to go against his father's wishes, to become a naturalist aboard a naval ship sent to explore the coasts of South America. The reader is given insight into Darwin's thought processes as he gradually develops his theory of evolution "Darwin reasoned that the living things on Earth changed to better fit with their environment."

Lee-Tai, Amy. *A Place Where Sunflowers Grow*. San Francisco, CA: Children's Book Press, 2006. Based on the author's grandmother, Mari plants sunflowers at their internment camp. She faithfully waters them everyday and while she's waiting for them she draws pictures of what they'll look like. Her art and her flowers when they finally bloom help her keep her dignity and hope alive. Japanese translation is on each page. Could use or recommend to advanced readers: Kadohata, Cynthia. *Weedflower*. New York: Atheneum Books for Young Readers, 2006.

## Videos

*The Magic School Bus: Gets Planted*. Scholastic. 1996. Discovery Education. 10 March 2010 <http://streaming.discoveryeducation.com/>

*The Magic School Bus: Goes to Seed*. Scholastic. 1994. Discovery Education. 10 March 2010 <http://streaming.discoveryeducation.com/>

*Animal Discovery Fun for Kids: Noisy Bugs*. CLEARVUE & SVE. 2003. Discovery Education. 10 March 2010 <http://streaming.discoveryeducation.com/> This video shows a snout beetle hatching from its pupa.

*The Crayfish*. CLEARVUE & SVE. 2003. Discovery Education. 10 March 2010 <http://streaming.discoveryeducation.com/> This segment from Animal Discovery Fun for Kids: Shells, Shells, and Tentacles shows the crayfish in action while discussing their characteristics.

## Websites

**“Field Guides.”** *eNature*. Shearwater Marketing Group, 2007. Web. 11 Mar. 2010.

<<http://www.enature.com/fieldguides/>>. Has over 5,500 animals and plants in the field guides which use the same data set that the Audubon Field Guides use. (Used to be owned by National Wildlife Federation.) Includes image, family, description and endangered status.

**“The Life Cycle of Plants.”** *Birmingham Grid for Learning*. Birmingham City Council,

2010. Web. 11 Mar. 2010. <[http://www2.bgfl.org/bgfl2/custom/resources\\_ftp/client\\_ftp/ks2/science/plants\\_pt2/index.htm](http://www2.bgfl.org/bgfl2/custom/resources_ftp/client_ftp/ks2/science/plants_pt2/index.htm)>. Activities to review the life cycle of plants. Includes animations, games to play, and worksheets to complete. Also has a Whiteboard version.

Nova. **“From Seed to Flower.”** *Teachers’ Domain*. WGBH Educational Foundation, 2010.

Web. 11 Mar. 2010. <<http://www.teachersdomain.org/resource/tdc02.sci.life.colt.plantsgrow/>>. Video shows plant growth which is quite dramatic using time-lapse photography from a Nova video. Has an overview and discussion questions. Teachers sign up for a free account.

University of Michigan. **“Kids’ Inquiry of Diverse Species.”** Interagency Education

Research Initiative, 2010. Web. 11 Mar. 2010. <http://www.biokids.umich.edu/>>.

Be sure to explore the “Critter Catalog.” Each critter has information, pictures, specimens and sounds.