

Learning about Life Cycles

This lesson for elementary students (grades 1-4) teaches about Life Science using an inquiry approach. Students will compare the life cycle of a plant to that of an animal in this hands-on activity. Part of the lesson will be done in the classroom and part will be outside. Note: Parts of the lesson may be adapted, based on amount of time available, student ability, and grade levels.

After this lesson, students will be able to:

- Show what they learned about life cycles with drawings and writing from their Nature Notebook.
- Identify the stages in the life cycle of one animal or plant, by drawing each stage.

Prior Knowledge: No extended prior knowledge is needed. Students should be familiar with different kinds of animals. Understanding that plants and animals are alive, though they are very different from each other, is also important for each student to know before starting this lesson.

Materials:

- [Nature Notebook](#), or other small, sturdy journal or notebook (one for each student)
- [Colored pencils](#) or crayons
- Butcher paper (or other large sheets of paper - enough for each group to have one sheet, with a few extras just in case)
- Markers (or use crayons to draw on the butcher paper)
- [Field guides](#) - wildflowers, trees, birds, insects, etc.
- Highlighting tape (any color)
- Whiteboard and markers (or use a chalkboard, smart board, projector, etc.)

Lesson Model: 5Es

ENGAGE: Before the lesson begins, plan a field trip for the students. You can go to a nearby botanical garden, butterfly garden, zoo, farm, or park. Look for places where you can observe caterpillars and butterflies, tadpoles and frogs, or chicks and chickens. Be sure to get permission for the field trip and have parents sign a permission slip for their child. If you are going to a botanical garden, zoo, or farm, get someone as a tour guide. Make sure the guide knows how many students you have and their ages, so s/he knows what to expect. On the day of the field trip, tell students they are going to go out of the class to learn about plants and animals. Have them each bring a notebook and pencil or pen, so they can write notes and draw pictures. After the tour, or at various times throughout the field trip if you are acting as guide, have students stop, sit down, and write or draw about what they've seen. Instruct each student to draw their favorite part of the field trip, and then write about it in 1-2 sentences (older students may be instructed to write 3-4 sentences).

EXPLORE: After returning from the field trip, have each student share one page from their Nature Notebook. So it is less intimidating for students, divide the class in groups of about four students, then have each member of the group show his or her page in the Nature Notebook, telling what s/he likes about it. Have students remain in groups and give each group a large sheet of paper (such as butcher paper) and markers or crayons. Have students fold the paper in half and use one side of the paper to list the different plants they saw. On the other side of the paper, have them write the different animals they saw. They will use their Nature Notebook to help them remember. Let students have access to field guides (or use a classroom computer to

do internet research) if they want to look up the name of a particular species they saw. Encourage students to press further—for example, if they just write 'tree' have them come up with a good guess of what type of tree it was.

EXPLAIN: Have each group present their poster. After each list of plants and animals has been shown, hang the butcher paper posters on the walls of the classroom. Point out that some of the items on the poster are actually the same thing! For example, pine cones actually came from a pine tree. A caterpillar is another form of the flying insect we call a butterfly. Have students volunteer to find a matching pair (such as tadpole and frog, chick and chicken, etc.) and highlight it using the highlighting tape. Write the pairs you found on the whiteboard, so everyone can read it. Explain to the class that the matching items that students highlighted are really different stages of the same plant or animal. A pine tree grows from a seed, then it produces pine cones. A frog lays eggs; they hatch into tadpoles, then grow into frogs. You can draw a picture on the board of a complete cycle of an animal of your choice. Pick something that relates well to the field trip. Note: in case students are not able to find matching pairs, simplify the assignment by bringing in pictures of different life cycle stages (for example a pinecone and pine tree, or a tadpole and frog) that students can look through, and find a matching pair.

ELABORATE: Use the worksheet on the last page to create an example life cycle picture of any plant or animal of your choice. Each student should follow your example and choose one plant or animal and draw a life cycle picture using the worksheet as a guide (it can be turned either horizontally or vertically). Have each student hang their life cycle picture up on a bulletin board in the classroom or hallway. Have students pair up with someone who chose a different category (for example, if student 1 chose an animal, have them pair up with student 2 who drew a plant life cycle). Have each student explain the drawing s/he made to his or her partner, then listen as the partner takes a turn at explaining. This is meant to highlight the differences between plant and animal life cycles. Note: This could also be done just with animal cycles. Have the class focus on two different life cycles (for example, frogs and butterflies) then divide students in pairs to compare the two different animals.

EVALUATE: The last section of this lesson is a student evaluation. Have each student pick one of his or her classmates' life cycle pictures to review. They should write their name and complete this sentence: I like _____ because _____. For example: I like the frog best because you put a lot of nice details into the drawing! Have each student tape their review next to the picture they chose to evaluate. Each student needs to submit one review, but may choose to review up to three of their classmates' pictures. Once each student has posted at least one review, have students read the feedback they got. As the teacher, make sure that at least one review has been posted of each student's picture. You may choose to submit a review (or several) yourself.

Accommodations for Diversity: If students struggle with writing, they can choose to simply illustrate their ideas, or have a classmate or the teacher write their words for them as they dictate. Students should be encouraged to ask questions. There are a variety of visual and auditory cues meant to build learning in this lesson. If a student cannot see the board or the posters, invite them to move closer. If a student has auditory discrimination problems, invite him or her to sit closer to the front, or have this student work with a partner who can repeat something the student may have missed the first time. For some classes, you may prefer to do the whole lesson with students working in pairs and combine two sets of pairs for the Explore section.

Ideas for Assessment: Most of the assessment for this lesson is observational and informal. Did each student complete the required number of drawings or writings in their Nature Notebook? Did each student work with a group, submit ideas, and listen to the ideas of others? Did each student draw a life cycle picture and post a review of a different life cycle? After the student reviews have been read, you may decide to have each student write a reflection, answering these questions: 1) What do you like best about your life cycle? 2) What could be improved or done better? 3) From 1 to 5, how many points do you think you deserve on your life cycle drawing? Why? Or, for younger students, have them circle one of these smiley faces: :) :| :(to self-evaluate their work on the life cycle drawing. Assign grades, taking the student and peer evaluations into close consideration.

