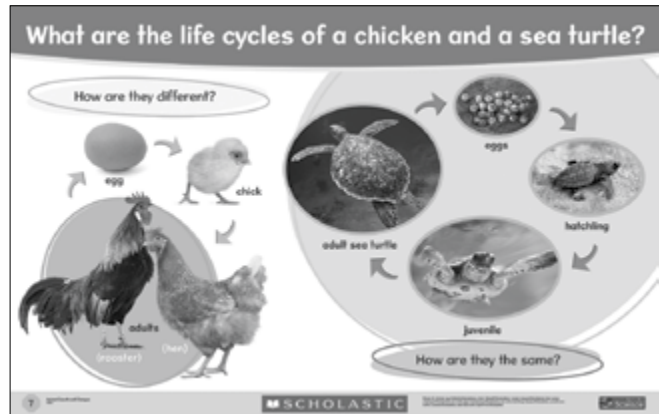


What Are the Life Cycles of Different Animals?



Focus: Students investigate the various stages of the life cycles of different animals.

Specific Curriculum Outcomes

Students will be expected to:

- 43.0 compare the life cycles of various animals [GCO 1/3]

Performance Indicators

Students who achieve these outcomes will be able to:

- communicate the similarities and differences of familiar animal life cycles

NOTES:

Attitude Outcome Statements

Encourage students to:

- show interest in and curiosity about objects and events within their immediate environment [GCO 4]

Cross-Curricular Connections

English Language Arts

Students will be expected to:

- speak and listen to explore, extend, clarify, and reflect on their thoughts, ideas, feelings, and experiences [GCO 1]
- create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes [GCO 9]

Getting Organized

Components	Materials	Before You Begin	Vocabulary
• Science Card 6 • Science Card 7 • Science Card 2 (optional) • IWB Activity 3 • IWB Activity 4 • IWB Activity 5 Literacy Place: • <i>Pictorial Diagram: Frog Life Cycle</i> (Conversation Card #14–Active Learning Kit) • <i>Who Laid These Eggs?</i> (Guided Reading, Level F)	• students' Science Journals • paper plates (2 per student) • paper fasteners (1 per student) • markers, colouring pencils, or crayons	• Collect posters, books, magazines and images showing life cycles of various animals. • Find videos showing the life cycles of various animals.	• fish • mammal • bird • reptile

Science Background

- Different classes of animals have different life cycles. Most classes of animals, including fish, mammals, reptiles, and birds, have fairly simple life cycles. First they are born, either alive from their mother or hatched from eggs. Then they grow and develop into adults. Amphibians and insects have more complicated life cycles. These animals undergo a metamorphosis (a significant change in their physical structure or habits).

There are two main types of metamorphosis: incomplete and complete. In incomplete metamorphosis, the offspring resemble the adult (e.g., the grasshopper nymph looks like an adult grasshopper except that it lacks wings). In complete metamorphosis, the offspring do not resemble the adult (e.g., the caterpillar and butterfly).

Characteristics of Different Life Cycles

Animal Class	Life Cycle Overview	Examples
insect	Some insects undergo complete metamorphosis. The stages are egg, larva, pupa, and adult.	bee, butterfly, ladybug, mosquito
	Other insects undergo incomplete metamorphosis. The stages are egg, nymph, and adult.	bedbug, dragonfly, grasshopper, lice
amphibian	Amphibians also undergo a metamorphosis. They lay their eggs in water. Larvae hatch and live underwater. They grow and develop into terrestrial adults that live and breathe on land.	frog, salamander
mammal	Mammals are born alive. They grow and develop until they become adults.	bat, caribou, cat, cow, dog, harp seal, humpback whale, moose, pig, polar bear, porcupine, red fox, snowshoe hare, walrus, wolverine
fish	Fish deposit eggs (spawn). Fish hatch and then grow and develop into adults.	Arctic char, capelin, dogfish, haddock, halibut, lake trout, northern pike, rainbow trout, smelt, salmon, whitefish
bird	Birds lay eggs. The eggs hatch and the chicks grow and develop into adults.	American robin, black-capped chickadee, blue jay, Canada goose, chicken, junco, puffin, seagull, snowy owl, starling, tern
reptile	Most reptiles lay eggs. The eggs hatch and the young reptiles grow and develop into adults.	garter snake, painted turtle, sea turtle

Possible Misconceptions

- Students may not realize that all living things have their own characteristic life cycle. Ensure students understand that the life cycles they are learning about are just examples and that every animal has its own life cycle with its own particular features. Exposing students to as many examples as possible will help with this. Students will further explore specifics of different life cycles as part of the Teaching Plan *How Do Different Life Cycles Compare?* (see pages 38–43).

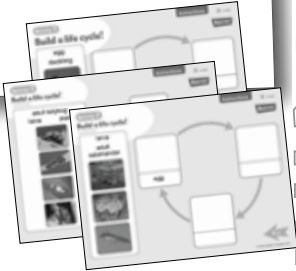
ACTIVATE

Looking at Life Cycles

Display one or more of the life cycle Science Cards (Science Cards 6, 7, and 2). Talk through the stages of each life cycle, modelling the appropriate vocabulary for the stages as shown on the cards. Record students' questions about the life cycles on the I Wonder Wall. Ask students to point out similarities and differences. The life cycles shown on each card are summarized in the following chart.



- IWB Activity:**
- Have students build life cycles for a duck, a ladybug, and a salamander using Activity 3: *Build a life cycle* (see the Teacher's Website).



Science Card	Animal	Class of animal	Stages of life cycle
6	dog	mammal	- puppy - adolescent - adult dog
	salmon	fish	- egg - alevin - fry - fingerling - adult salmon
7	chicken	bird	- egg - chick - adult chicken (rooster or hen)
	sea turtle	reptile	- egg - hatchling - juvenile - adult turtle
2	butterfly	insect	- egg - caterpillar (larva) - chrysalis (pupa) - adult butterfly
	dragonfly	insect	- egg - nymph (larva) - adult dragonfly



Literacy Place Connection:

Display *Pictorial Diagram: Frog Life Cycle* (Conversation Card #14) and explain that frogs are amphibians which live both on land and in the water. Challenge students to identify each stage of the frog's life cycle (egg; tadpole; tadpole with legs; froglet; adult frog). Have students record the names of the stages on sticky notes and attach each label to the correct stage of the life cycle on the card. Ask:

- How does the frog's life cycle compare to the life cycles of other animals?

CONNECT

Expert Group Jigsaw Activity

Organize students into "home base" groups with 4–6 students each. (Make the group sizes as similar as possible.) Assign each member of the group a number (e.g., 1–4 for a group of 4). The "home base" groups split up, and all of the like numbers assemble in new groups. Assign an animal to each numbered group and provide materials to learn about the life cycle of that animal. See the Science Background section on pages 33–34 for ideas about which animals to feature.



Once finished, have group members return to their own “home base” group and share what they have learned. Students should record what they have learned about the different animals in their Science Journals.

Life Cycle Museum

Set up stations around the classroom with posters, books, displays, images, and access to videos focusing on the life cycles of various animals. (Science Cards 6, 7, and 2 can be used here as well.) Include information about a variety of animals including insects, mammals, amphibians, fish, reptiles, and birds.

Allow students time to look at all the exhibits and think about the similarities and differences between the life cycles.

Organize students into pairs. Assign each pair of students a pair of life cycles to compare. Tell students they will be doing a think-pair-share about their pair of life cycles.

1. Think—Ask students:

- **What are some similarities and differences between the two life cycles?**

Allow students 1–3 minutes to think individually about that question.

2. Pair—Have students discuss their thoughts about the question for 2–5 minutes. Encourage students to ask one another questions about what they are saying.

3. Share—Have each pair share details of their discussions with the class. Record questions that come out of the discussion on the I Wonder Wall. Ask students if and how their ideas changed as a result of the discussion.



CONSOLIDATE

Venn Diagram

Provide students with a list of possible animals to compare, each from a different animal class (insect, amphibian, mammal, bird, reptile, fish). Refer to the Science Background section on pages 33–34 for some examples that students can choose from. Have students choose two animals from different classes and create a Venn diagram to compare the two animals and their life cycles.

Animal Life Cycle Wheel

Provide each student with two paper plates and a paper fastener. Tell students they will be producing a Life Cycle Wheel. Assign each student a local animal or allow them to choose their own. Students should research their animal’s life cycle and plan in their Science Journals how to draw the stages of the life cycle around the wheel (on one paper plate).

Once their plans are ready, they can draw their life cycle. Help students cut a window out of their second paper plate to show only one stage at a time of the life cycle. Students can decorate this second plate (the top plate) and



include the name of their animal. Help students attach the plates with the paper fastener to create a wheel that can be spun to show the stages in the life cycle of their animal.

IWB Activity:

Students can match adult birds with their chicks using Activity 4: *Whose chick?* (see the Teacher's Website).



Guess the Parent Game

Challenge students to make a “guess the parent” game in which they match animals at various stages of their life cycles with an adult parent. Students can create cards using their own sketches or by cutting out pictures from magazines and other sources, or produce the game using the Interactive Whiteboard or other programs.

IWB Activity:

Challenge students to match each butterfly or moth with its caterpillar using Activity 5: *Whose caterpillar?* (see the Teacher's Website).



Literacy Place Connection:

Read or revisit *Who Laid These Eggs?* (Guided Reading, Level F) and challenge students to predict which animal laid the eggs shown. Discuss the various animal life cycles.



EXPLORE MORE

Life Cycles and Environments

Have groups of students create their own museum exhibits that show at least three different life cycles in a single environment (ocean, beach or shoreline, field, lake or river, bog or marsh, forest, farm). Students can use models, drawings, photos, videos, and other media to create their exhibits.