

<b>Introduction .....</b>	<b>2</b>
<b>Unit 1: Structures and Processes in Organisms</b>	
Lesson 1: Kingdoms of Living Things .....	2
Lesson 2: Animal Structures .....	2
Lesson 3: Plant Structures.....	3
Lesson 4: Basic Needs of Living Things .....	3
Lesson 5: Senses .....	4
<b>Unit 2: Growth and Development of Organisms</b>	
Lesson 1: Invertebrates .....	5
Lesson 2: Mammals.....	5
Lesson 3: Fish and Birds .....	6
Lesson 4: Amphibians and Reptiles.....	6
Lesson 5: Flowering Plants.....	7
<b>Unit 3: Ecology</b>	
Lesson 1: Ecosystems.....	7
Lesson 2: Organization of Ecosystems.....	8
Lesson 3: Biomes .....	8
Lesson 4: Group Behavior .....	9
<b>Unit 4: Evolution</b>	
Lesson 1: Heredity.....	9
Lesson 2: Variation of Traits .....	10
Lesson 3: Adaptation .....	10
Lesson 4: Extinction.....	11
Lesson 5: Biodiversity.....	11

## Introduction

**Core Life Science II** is one of the three courses in the Core Science II Collection. It is an introductory course that teaches about kingdoms of living things, structure and needs of plants and animals, growth and development of invertebrates, mammals, fish, birds, amphibians, reptiles, and flowering plants, ecosystems, heredity, traits, adaptation, extinction, and biodiversity. The Course has 19 lessons organized in 5 Units and its learning objectives align with Common Core Science objectives for grades 3 to 5. There are 361 audio-supported instruction pages, 70 printable activity sheet pages, 168 defined vocabulary words, and a set of 285 Quiz and Unit Test questions.

---

## Unit 1: Structures and Processes in Organisms

### Lesson 1: Kingdoms of Living Things

#### Common Core Standards

- LS1.A: Structure and Function Matter

#### Learning Objectives

- to learn the characteristics of living and non-living things
- to learn the kingdoms into which organisms are grouped
- to learn the characteristics of the animal and plant kingdoms

#### Defined Vocabulary Words

- living, non-living, organism, kingdom, animal kingdom, locomotion, plant kingdom, chlorophyll, photosynthesis, cellulose, fungi, microscopic, bacteria

#### Activity Type

- For each phrase listed write Living Things, Plant, or Animal to indicate if it is true for all living things, plants, or animals.
- Interactive Activity: Living and Non-living - use observation and what you know about objects to determine what is living and what is non-living.

#### Lesson Components

Total Learning Objects – 42

Instruction Pages - 24

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 2: Animal Structures

#### Common Core Standards

- LS1.A: Structure and Function

#### Learning Objectives

- to learn about the internal and external structures animals possess and their functions
- to learn about major organ systems in animals, how they work and what their functions are

#### Defined Vocabulary Words

- organ, organ system, circulatory system, respiratory system, nervous system, digestive system, musculoskeletal system

#### Activity Type

- Write the words from the word box in the boxes for the correct organ system.
- Interactive Activity: Observing Animals

#### Lesson Components

Total Learning Objects – 37

Instruction Pages - 20

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 3: Plant Structures

#### Common Core Standards

- LS1.A: Structure and Function

#### Learning Objectives

- to learn about the internal and external structures plants possess and their functions
- to learn the difference between vascular and nonvascular plants

#### Defined Vocabulary Words

- roots, tap root, fibrous roots, stem, leaf, flower, pistil, stamen, trunk, fruit, seed, cone, vascular plant, xylem, phloem, nonvascular plant

#### Activity Type

- Match the plant structure with the description.
- Interactive Activity: Xylem and Phloem - use celery and food coloring to see how the xylem and phloem work.

#### Lesson Components

Total Learning Objects – 35

Instruction Pages - 18

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 4: Basic Needs of Living Things

#### Common Core Standards

- LS1.C: Organization for Matter and Energy Flow in Organisms

#### Learning Objectives

- to learn about the basic needs of plants and animals
- to learn how the basic needs of plants and animals help them to live and grow

### Defined Vocabulary Words

- basic needs, anaerobic organisms, herbivore, carnivore, omnivore, shelter, roots, climate

### Activity Type

- Draw one thing that is a basic need of living things. Then write a paragraph to explain why it is a basic need.
- Interactive Activity: Green Gardener - use plants to see what happens when they are given and not given basic needs (water and sunlight)

### Lesson Components

Total Learning Objects – 36

Instruction Pages - 18

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 5: Senses

#### Common Core Standards

- LS1.D: Information Processing

### Learning Objectives

- to learn about the various sense receptors plants and animals use to understand the environment around them
- to learn how animals process the information they get from their sense receptors

### Defined Vocabulary Words

- organ, sense receptors, eyes, ears, nose, taste buds, skin

### Activity Type

- Think of your favorite animal. What one sense do you believe is the most important to that animal? Draw a picture of the animal using that sense and then explain why you believe it is the most important. Is the same sense the most important to all animals?
- Interactive Activity: Mystery Scents - test yourself to see how many smells you can recognize without looking at the object that you are smelling.

### Lesson Components

Total Learning Objects – 39

Instruction Pages - 22

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

**Unit 2: Growth and Development of Organisms****Lesson 1: Invertebrates**

## Common Core Standards

- LS1.B: Growth and Development of Organisms

## Learning Objectives

- to learn about invertebrates and their differences from vertebrates
- the learn the life cycle of an invertebrate: a butterfly

## Defined Vocabulary Words

- species, biome, vertebrates, invertebrates, skeleton, exoskeleton, molt, arthropods, life cycle, metamorphosis, caterpillars, larvae, pupae, chrysalis

## Activity Type

- Draw the stages that a butterfly goes through. Label each stage with the correct name.
- Interactive Activity: Butterfly Magic - capture a caterpillar and watch it turn into a butterfly by providing for it.

## Lesson Components

Total Learning Objects – 38

Instruction Pages - 20

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

**Lesson 2: Mammals**

## Common Core Standards

- LS1.B: Growth and Development of Organisms

## Learning Objectives

- to learn the characteristics of a mammal
- the learn the life cycle of a mammal, a dog

## Defined Vocabulary Words

- life cycle, life span, mammal, warm-blooded, vertebrates, adolescent, breed, litter

## Activity Type

- Match the name of the baby with the kind of mammal it is. Some names from the word box may be used more than once.
- Interactive Activity: Play with a Puppy

## Lesson Components

Total Learning Objects – 32

Instruction Pages – 16

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 3: Fish and Birds

#### Common Core Standards

- LS1.B: Growth and Development of Organisms

#### Learning Objectives

- to learn the characteristics of fish and birds
- to learn the life cycle of a fish and a bird as they go from eggs to adulthood

#### Defined Vocabulary Words

- vertebrates, fish, gills, scales, skeleton, cartilage, cold-blooded, species, mammal, invertebrates, life cycle, larval, fry, juvenile, bird, keratin, brood, incubate, chick, fledgling

#### Activity Type

- How are fish and birds alike? How are they different? Fill in the circles with the words from the word bank.
- Interactive Activity: Go Fishing

#### Lesson Components

Total Learning Objects – 36

Instruction Pages - 20

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 4: Amphibians and Reptiles

#### Common Core Standards

- LS1.B: Growth and Development of Organisms

#### Learning Objectives

- to learn the characteristics of an amphibian and a reptile
- to learn the life cycle of a frog and a lizard as they go from eggs to adulthood

#### Defined Vocabulary Words

- vertebrates, amphibian, cold-blooded, metamorphosis, life cycle, tadpoles, gills, froglet, reptile, clutch, hatchling

#### Activity Type

- Draw the stages that a frog goes through. Label each stage with the correct name.
- Interactive Activity: Grow a Frog

#### Lesson Components

Total Learning Objects – 37

Instruction Pages - 19

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 5: Flowering Plants

#### Common Core Standards

- LS1.B: Growth and Development of Organisms

#### Learning Objectives

- to learn about the cycle a flowering plant goes through from seed to flowering plant

#### Defined Vocabulary Words

- life cycle, seed, dormant, sprout, seedling, carbon dioxide, photosynthesis, budding, flower bud, attract, pollinate

#### Activity Type

- Draw the stages that a flowering plant goes through. Label each stage with the correct name.
- Interactive Activity: Grow a Marigold

#### Lesson Components

Total Learning Objects – 29

Instruction Pages - 13

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

---

## Unit 3: Ecology

### Lesson 1: Ecosystems

#### Common Core Standards

- LS2.A Interdependent Relationships in Ecosystems
- LS2.B Cycles of Matter and Energy Transfer in Ecosystems

#### Learning Objectives

- to understand what are ecosystems, food webs, and food chains
- to understand the roles organisms play in a food web

#### Defined Vocabulary Words

- ecosystem, basic needs, food web, producer, consumer, herbivore, carnivore, omnivore, decomposer, decomposition, photosynthesis, predator, prey, food chain, top of the food chain, bottom of the food chain, recycled, waste

#### Activity Type

- Draw a picture of a producer, a consumer, and a decomposer. Then write a brief description telling what each means and give an example.
- Interactive Activity: Compost Jar - show how microscopic organisms begin to break down the material in the jar.

### Lesson Components

Total Learning Objects – 38

Instruction Pages - 21

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

## Lesson 2: Organization of Ecosystems

### Common Core Standards

- LS2.C Ecosystem Dynamics, Functioning, and Resilience

### Learning Objectives

- to learn the various components of an ecosystem and how an ecosystem fits into the biosphere
- to learn how changes in the environment affect ecosystems

### Defined Vocabulary Words

- ecosystem, biome, climate, community, population, species, habitat, niche, biosphere, environment, adapt

### Activity Type

- Draw a picture of an animal in its natural habitat. Then write a paragraph explaining the animal's niche in the ecosystem.
- Interactive Activity: Ecosystem in a Bottle

### Lesson Components

Total Learning Objects – 41

Instruction Pages - 23

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

## Lesson 3: Biomes

### Common Core Standards

- LS2.C Ecosystem Dynamics, Functioning, and Resilience

### Learning Objectives

- to learn about the five major types of biomes

### Defined Vocabulary Words

- biome, ecosystem, biosphere, aquatic, wetland, marine, coral reef, estuary, microscopic, desert, nocturnal, burrow, forest, grassland, savannah, tundra

### Activity Type

- Match the phrase with the word it describes.
- Interactive Activity: What's Your Biome?



### Lesson Components

Total Learning Objects – 40

Instruction Pages – 22

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 4: Group Behavior

#### Common Core Standards

- LS2.D Social Interactions and Group Behavior

#### Learning Objectives

- to learn that animals relate to each other in groups of various sizes
- to learn that members of a group often have different status in the group and different functions

#### Defined Vocabulary Words

- ecosystem, hierarchy, pack, troop, school, colony, queen bee, worker bee, drone

#### Activity Type

- Choose wolves, baboons, fish, or honey bees. Draw a picture of the group to which the animal you picked belongs. Then write a paragraph to describe what you drew. Be sure to talk about the roles each animal plays in the group.
- Interactive Activity: My Own Ant Farm

### Lesson Components

Total Learning Objects – 36

Instruction Pages – 18

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

---

## Unit 4: Evolution

### Lesson 1: Heredity

#### Common Core Standards

- LS3.A Inheritance of Traits

#### Learning Objectives

- to learn how physical and mental traits are passed from parent to offspring in plants and animals
- to learn that some behaviors are learned from interactions with the environment

#### Defined Vocabulary Words

- heredity, inherit, trait, offspring, physical trait, mental trait, emotional trait, learned behaviors

### Activity Type

- Think about your traits and those of your parents. Draw a picture of yourself. Then write about the traits you inherited from your parents. Be sure to include mental as well as physical traits.
- Interactive Activity: Weeding your Garden

### Lesson Components

Total Learning Objects – 36

Instruction Pages - 18

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 2: Variation of Traits

#### Common Core Standards

- LS3.B Variation of Traits

### Learning Objectives

- to learn how traits help to identify a plant or animal and that one kind of plant or animal can have traits that vary from individual to individual
- to learn that offspring inherit a mix of traits from their parents but that the environment can impact traits as well

### Defined Vocabulary Words

- trait, offspring, heredity, inherit, inheritance, environment

### Activity Type

- Discover where you get your traits from.
- Interactive Activity: Dogs, Dogs Everywhere - use your observation skills to watch dogs of the same breed to look for variations. As you do this, try to figure out what features of a dog allow you to pick one dog out from the rest of the same kind of dogs.

### Lesson Components

Total Learning Objects – 35

Instruction Pages - 17

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 3: Adaptation

#### Common Core Standards

- LS4.C Adaptation
- LS4.B Natural Selection

### Learning Objectives

- to learn the various physical and behavioral ways animals change to fit their environment
- to learn about the concept of natural selection

### Defined Vocabulary Words

- adaptation, environment, inherit, trait, habitat, physical adaptation, behavioral adaptation, mimicry, camouflage, migration, hibernation, natural selection

### Activity Type

- Look at each of the four pictures shown. Identify the adaptations each of these animals have made and briefly explain how the adaptation helps them to survive better.
- Interactive Activity: Swimming with Flippers - experiment to see how flippers change your swimming.

### Lesson Components

Total Learning Objects – 36

Instruction Pages - 20

Activity Pages - 4

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 4: Extinction

#### Common Core Standards

- LS4.A Evidence of Common Ancestry and Diversity

#### Learning Objectives

- to learn about the concept of extinction and what are some of the causes
- to understand how we know about organisms now extinct that once lived on this Earth

### Defined Vocabulary Words

- species, extinct, extinction, endangered, threatened, adapt, pollution, pesticide, fossil

### Activity Type

- Choose an animal that is in danger of becoming extinct. Make a poster to encourage people to take steps to save this animal.
- Interactive Activity: In Search of Purple Loosestrife

### Lesson Components

Total Learning Objects – 33

Instruction Pages - 21

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test

### Lesson 5: Biodiversity

#### Common Core Standards

- LS4.D Biodiversity and Humans

#### Learning Objectives

- to learn about the concept of biodiversity
- to learn the benefits of biodiversity to humans

#### Defined Vocabulary Words

- biodiversity, species, population, ecosystem, food web, community, goods and services, natural resources, agriculture, cosmetics, pharmaceutical

#### Activity Type

- What is biodiversity? Draw a picture to show what it means to you. Then write a paragraph to explain what you drew.
- Interactive Activity: Bird Watching

#### Lesson Components

Total Learning Objects – 34

Instruction Pages - 17

Activity Pages - 3

Quiz Questions – 10 total questions; 5 randomly selected to populate quiz

Test Questions – 50 total questions; 10 total per Lesson of which 3 are randomly selected to populate test