



## Grade 3 Science Unit 3 Life Science

### Topic 7 Fossil Evidence - 26 days

**Unit Overview:** Students will investigate a variety of plant and animal traits and discover how genetic variation and environments leads to differences between individuals. Students will conduct investigations and use models to explain the similarities and differences of life forms. Students will gain an understanding of the importance of inherited traits and use evidence to explain how variations contribute to unique differences. Students will learn that Earth is home to a great diversity of living things and that living things interact with and depend on each other and their environment to satisfy their basic needs. Differences in characteristics can give individuals an advantage in surviving and reproducing when environments change. Students will then investigate fossil evidence and learn about environmental change and geological time scale.

**Topic Essential Question:** How have living things and environments changed?

#### Lessons

- Topic Launch/Quest Kickoff
- Lesson 1 Fossils
- Lesson 2 Fossils as a Record
- Lesson 3 Living Things and Climate Change
- Topic Close –Assessment, Quest Findings

#### NYSSLS Performance Expectations (PE)

**3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.** [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]

**3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.** [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]

**3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.**

#### Higher Order Thinking Skills (HOTS)

Higher Order Thinking Skills (HOTS) will be identified within each topic plan. Grade 3 HOTS include:

sequencing	reasoning
categorizing	recognizing attributes
identifying patterns	determining relevant/irrelevant information
cause and effect	distinguishing fact vs. opinion
researching	using complete sentences
brainstorming	inferencing
using logic	academic vocabulary

**Topic Opener****PE:** 3-LS4-1, 3-LS4-3**SEP:** Analyzing and Interpreting Data\*

Engaging in Argument from Evidence\*

**DCI:****LS4.A** - Evidence of Common Ancestry and Diversity

- Some kinds of plants and animals that once lived on Earth are no longer found anywhere.
- Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments.

**CCC:** Scale, Proportion, and Quantity\*

\*Denotes Higher Order Thinking Skill

**Savvas**

**Highlighted labs are important to the understanding of the instructional concepts in this lesson and must be completed during Science instructional time.**

- ***u*Connect Lab – What can a fossil tell you?**
- Quest Kickoff – Written in Stone
- Reading Check – Use Evidence from Text
- Leveled Readers
- STEM Engineering Reader

**Lesson 1- Fossils****PE:** 3-LS4-1**SEP:** Developing and Using Models\*

Analyzing and Interpreting Data\*

**DCI:****LS4.A** - Evidence of Common Ancestry and Diversity

- Some kinds of plants and animals that once lived on Earth are no longer found anywhere.
- Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments.

**CCC:** Scale, Proportion, and Quantity\*

\*Denotes Higher Order Thinking Skill

**Savvas****Guiding Objective**

- Students will describe what a fossil is. Students will describe some ways that fossils form.

**Literacy skill**

- Use Evidence from Text

**Vocabulary**

- fossil
- extinct

**Academic Vocabulary**

- evidence

**Connect** - TE/SB p. 258

- SPORTS Connection
- Reading Check – Use Evidence from Text

**Investigate** - TE/SB pp. 259-263

- ***u*Investigate Lab – How do minerals help form fossils?**

- Video – Fossils

- Literacy Toolbox – Use Evidence from Text

- ***u*Be a Scientist – Make a Fossil**

- Quest Connection

- Visual Literacy Connection – How does a fossil form?

**Synthesize** - TE/SB pp. 264-266

- Interactivity – Exploring Fossils
- Question It!
- Quest Check-In – Plant, Animal, or Trace

**Demonstrate** - TE/SB p. 265

- Lesson 1 Check
- Lesson 1 Quiz

**Lesson 2 Fossils as a Record****PE:** 3-LS4-1**SEP:** Analyzing and Interpreting Data\***DCI:****LS4.A** - Evidence of Common Ancestry and Diversity

- Some kinds of plants and animals that once lived on Earth are no longer found anywhere.
- Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments.

**CCC:** Scale, Proportion, and Quantity\*

\*Denotes Higher Order Thinking Skill

**Savvas****Guiding Objective**

- Students will use fossil data to give evidence of organisms and environments that existed long ago.

**Literacy Skill**

- Use Evidence from Text

**Vocabulary**

- Fossil record

**Academic Vocabulary**

- data

**Connect** - TE/SB p.268

- STEM Connection
- Make Meaning

**Investigate** - TE/SB pp. 296-270, 727-273

- Video – Fossils as a Record
- **Investigate Lab – What can fossil footprints tell you about an animal?**
- Virtual Lab – The Stories Fossils Tell
- Quest Connection
- Visual Literacy Connection – When did animals appear on Earth?

**Synthesize** - TE/SB pp. 271, 275

- Interactivity – Fossils and the Geological Time Scales
- Question It!
- Science Practice Toolbox – Analyze and Interpret Data
- Quest Connection
- Quest Check-In – Long Ago and Today

**Demonstrate** - TE/SB p. 274

- Lesson 2 Check
- Lesson 2 Quiz

**Lesson 3 Living Things and Climate Change****PE:** 3-LS4-3**SEP:** Analyzing and Interpreting Data\*  
Engaging and Interpreting Data\***DCI:****LS4.A** - Evidence of Common Ancestry and Diversity

- Some kinds of plants and animals that once lived on Earth are no longer found anywhere.
- Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments.

**CCC:** Patterns\*

Scale, Proportion, and Quantity\*

\*Denotes Higher Order Thinking Skill

**Savvas****Guiding Objective**

- Students will use fossil data to argue how some living things have responded to climate changes.

**Literacy Skill**

- Use Evidence from Text

**Academic Vocabulary**

- argue

**Connect** - TE/SB p.278

- SPORTS Connection
- Identify

**Investigate** - TE/SB pp. 279-280, 282

- Video – Living Things and Climate Change
- **Investigate Lab – How can you use evidence to infer climate change?**

- Quest Connection

**Synthesize** - TE/SB p. 281

- Interactivity – Piecing Together the Past

**Demonstrate** - TE/SB pp. 283-285

- Lesson 3 Check
- Reading Check – Use Evidence from Text
- Lesson 3 Quiz
- Quest Check-In Lab – Where did those fossils come from?

**Topic Close**

- Assessment and Remediation TE/SE pp. 288-293
- Quest Finding p.286

**Topic 7 Enrichment**

**Topic 7 Lesson 1 Enrichment** - TE p. 264 - This activity extends student understanding of the lesson by learning about the La Brea Tar Pits in Los Angeles, California. Then, students will use a graphic organizer to describe three causes that resulted in the trapped animal bones becoming fossils.

**Enrichment Skill - Cause and Effect**

**Topic 7- Lesson 2 Enrichment** - TE p. 270 - This activity extends student understanding of the lesson by learning about Dinosaur Provincial Park. Then, students will use reliable resources to conduct research about this abundant fossil bed.

**Enrichment Skills - Research**

**Topic 7- Lesson 3 Enrichment** - TE p. 281 - This activity extends student understanding of the lesson by learning about animals that are threatened by climate change. Then, students will predict the effects of climate change on animals that live on islands near sea level.

**Enrichment Skill - Inferencing**

**Cumulative Enrichment Project- [Grade 3](#) - ( Categorize, Inferring, Relevant and Irrelevant Details, Attributes, Academic Vocabulary)**

Page 1: Students will look for patterns among a set of animal cards pertaining to how animals are like their young and how they are not like their young.

Page 2: Animal Cards (can be printed and cut into cards)

Page 3: Students will observe animal cards depicting behaviors and categorize each behavior as “teaching”, “feeding” or “protecting”.

Page 4: Animal behavior cards - cut out and use for p.3

**English Language Learners (ELL) Enhancements**

To access [hyperlinked](#) material, you must be logged into your BPS Google Drive

**Listening**

- **[Cross- Linguistic Practices](#)**: Gives students opportunities to make connections between what they hear and their home language (For example, allow students to listen to a passage and identify cognates).
- **[Activating Prior Knowledge](#)** Activating prior knowledge means both eliciting from students what they already know and building initial knowledge that they need in order to access upcoming content.
- **[Activating Prior Knowledge](#)**
- **[Visuals](#)** - GIFs, pictures- will assist students in understanding what they are listening to. Use **[visual thinking strategies](#)** to set the lens for learning.
- Video to review or introduce a topic – use **[closed captioning](#)** to help students see the words and pronunciations while they listen to the content.
- **[Word stretching / Vowel stretching](#)** when instructing allows student to listen closely to the pronunciation of the word.
- **[Performance Level Descriptors](#)** this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of listening. Scroll for grade 3.

**Speaking**

- **Sentence Stems/Frames** - to begin a sentence - such as *Evolution is...* or *I think that evolution is...*
- **Academic Conversation Starters**: Have a visual of a list of academic sentence starters that students can refer to in a discussion.
- **Choral Reading** - To build fluency, self-confidence and motivation with [reading/speaking](#).
- Create **movement** to go with the word. Movement can be a motivating factor, as well as a kinesthetic tool for conceptualizing the rhythm and flow of fluent reading while triggering brain function for optimal learning.
- **Performance Level Descriptors** This document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of speaking. Scroll for grade 3.

**Reading**

- Supplementary Text to help reinforce concepts.
- **Visual Aids** - Pictures or models to support vocabulary words and concepts
- Video to review or introduce a topic - use **closed captioning** to help students read along while they listen to the content.
- **4 Square / Frayer models** to help students gain a deeper understanding of vocabulary.
- **Highlighting** important text to assist students in answering questions after the reading.
- **Chunking**-Break reading of text into chunks or paragraphs
- **Performance Level Descriptors** this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of reading. Scroll for grade 3.
- **Vocabulary Morphology**- Morphology relates to the segmenting of words into affixes (prefixes and suffixes) and roots or base words, and the origins of words. Understanding that words connected by meaning can be connected by spelling can be critical to expanding a student’s vocabulary.

**Instructional Accommodations (depending on the student’s needs)**

- **Extended time** for tests in class, projects and assignments
- **Directions read.** Broken down as necessary
- **Model** how to complete the activity in the lesson
- **Oral simplification** of directions or questions
- **Translated version** of test when available. Student may have both version English and native language version
- Use of **approved bilingual glossaries** from NYS in each subject

**Special Education Modifications**

Special Education students must have accommodations as per Individual Educational Plan (IEP)

**Instructional**

- **Pre-teach** vocabulary
- Use **picture vocabulary**
- Scaffold **Depth of Knowledge** questions
- Provide copy of notes/**notes in “cloze”** form
- Use of **Think, Pair, and Share** strategy to help process information
- **Scaffold** written assignments with the use of **graphic organizers**
- Allow for **multiple ways to respond** (verbal, written, response board)
- Provide **model of performance task**
- **Modify informational text** to fit the needs of the students
- Provide a digital or paper **interactive notebook**
- Present complex **tasks in multiple ways**
- Provide **mnemonic strategies** for scientific concepts

	<p><b>Technology:</b></p> <ul style="list-style-type: none"> <li>● <b>Audio</b> reading of text</li> <li>● <b>Text to type</b> functions</li> <li>● <b>Videos</b> to clarify/visualize science concepts</li> <li>● <b>Record class lecture/discussions</b> and make accessible to student</li> <li>● <b>Nearpod</b>- interactive presentations of notes</li> </ul> <p><b>In Class Assessments</b></p> <ul style="list-style-type: none"> <li>● Provide <b>multiple options</b> for projects</li> <li>● <b>Use of timer</b> in class</li> <li>● Break all complex tasks into chunks</li> </ul>
<p><b>Step Up to Writing</b> Step Up to Writing materials can be found in BPS Science K-12 Schoology Folder Grade 3 Resources Grade 3 Curriculum Materials SUTW materials</p>	<ul style="list-style-type: none"> <li>● Breaking Down Definitions</li> <li>● Four-Step summary Paragraph</li> <li>● Sketch Then Write Responses</li> <li>● Traffic Light Colors for Informative/Explanatory Paragraphs</li> <li>● <a href="#">Performance Level Descriptors</a> this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of writing. Scroll for grade 3.</li> </ul>
<p><b>Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom</b></p>	<ul style="list-style-type: none"> <li>● Materials, resources, and/or discussions address diverse cultural backgrounds and real-world applications</li> <li>● Artifacts (posters, charts, etc.) in the science classroom are representative of the cultures of the student population</li> <li>● All students are given an opportunity to engage in science discourse</li> <li>● Teacher demonstrates high expectations for all students</li> </ul>