March Gr. 1 Unit 4 : Plant and Animal Structures

Content Area: **Science**
Course(s):
Time Period: **March**
Length: **6-8 Weeks**
Status: **Published**

Unit Overview

In this unit students will:

- describe how parts of a plant help it to survive and grow;
- explain how parts of an animal help it to survive and grow;
- relate the shape and stability of structures to their function(s);
- use evidence to describe how plants and animals process and respond to information;
- describe how human-made products are designed by applying knowledge of the natural world;
- use observations to design a solution to a human problem by mimicking how plants use their parts to survive.

Enduring Understandings

Animal and plant structures help them to survive and grow.

Different parts of plants and animals have different functions.

We can learn from plants and animal structures to improve our world.

Essential Questions

What are the different parts of plants and how do they help the plant survive and grow?

What are the different parts of plants and animals and how do they help them survive and grow?

What can we learn from studying plants and animals?

Instructional Strategies & Learning Activities

- Unit 4: Plant and Animal Structures

  Assessment Guide

Plant and Animal Structures: Unit Pretest

The Unit Pretest for "Plant and Animal Structures" focuses on prerequisite knowledge. The test is composed primarily of DOK 1 items that evaluate student preparedness for the upcoming content.
Launch

- Unit 4: Plant and Animal Structures

  Online Assessment

  Plant and Animal Structures: Unit Test

  The interactive Unit Test for "Plant and Animal Structures" assesses students' ability to apply knowledge to solve problems and explain phenomena in relation to the Performance Expectations associated with the unit. In this unit, children:
  - describe how parts of a plant help it to survive and grow;
  - explain how parts of an animal help it to survive and grow;
  - relate the shape and stability of structures to their function(s);
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  Launch

- Unit 4: Plant and Animal Structures

  Student eBook

  Plant and Animal Structures: Unit Opener

  The Unit Opener for "Plant and Animal Structures" introduces the unit project, Explore a Favorite Animal. During this unit project, children will:
  - Develop questions about how an animal meets its particular needs for survival.
  - Conduct focused research to collect information that will help answer those questions.
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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Unit At a Glance

  Unit at a Glance for "Plant and Animal Structures" includes the unit table of contents, unit vocabulary words, and the vocabulary game, Make a Match. In this unit, children will:
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- Unit 4: Plant and Animal Structures

  Home Letter

  Plant and Animal Structures: Home Letter

  This is the home letter for the unit "Plant and Animal Structures."

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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: 3D Unit Planning

  Planning resources are available for each lesson and hands-on activity in the unit "Plant and Animal Structures."

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- Unit 4: Plant and Animal Structures

  Teacher eBook

  Plant and Animal Structures: Unit Opener

  The Unit Opener introduces the unit "Plant and Animal Structures" and the unit project, Explore a

Favorite Animal.
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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Connecting with NGSS

  These opportunities for informal science learning provide local context and extend and enhance concepts from the unit "Plant and Animal Structures."
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- Unit 4: Plant and Animal Structures

  Student Edition

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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Integrating the NGSS* Three Dimensions of Learning

  This section details the Performance Expectations covered in the unit "Plant and Animal Structures."
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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Unit Opener

  The Unit Opener introduces the unit "Plant and Animal Structures" and the unit project, Explore a Favorite Animal.
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- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Differentiate Instruction

  This page provides differentiated support for this unit's Science & Engineering Leveled Readers, "What Can We Learn About Animals?" "What Is a Plant?" "Amazing Animals," and "Weird and Wacky Plants."
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- Unit 4: Plant and Animal Structures

  Teacher eBook

  Plant and Animal Structures: Unit Project: Explore a Favorite Animal

  During the unit project "Explore a Favorite Animal," children will:
  - Develop questions about how an animal meets its particular needs for survival.
  - Conduct focused research to collect information that will help answer those questions.
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- Unit 4: Plant and Animal Structures

  Student Edition

  Plant and Animal Structures: Unit Review

  The Unit Review assesses student understanding of key ideas and concepts from the unit "Plant and Animal Structures."

  Launch
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Unit 4: Plant and Animal Structures

Unit Performance Task Worksheet

Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House (Editable)

This is the editable Unit Performance Task worksheet for "Engineer It - Design a House." During this task, children will define a problem and design a solution by applying the structure and function of the parts of water plants.
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Unit 4: Plant and Animal Structures

Student eBook

Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House

During the Performance Task "Engineer It - Design a House," children will define a problem and design a solution by applying the structure and function of the parts of water plants.
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Unit 4: Plant and Animal Structures

You Solve It

Build a Safety Helmet

In Build a Safety Helmet, students use their knowledge of biomimicry to complete an engineering challenge. Students first explore how animals inspired objects and tools used in a school. Then, students are tasked to construct a safety helmet for a construction worker using animal structures as inspiration for their designs.
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Unit 4: Plant and Animal Structures

Leveled Readers Teacher's Guide

Topic 9: Animals

The Leveled Readers Teachers Guide provides teaching strategies and support (as well as reproducible English and Spanish worksheets) for the Unit 4 readers "What Can We Learn About Animals?" and "Amazing Animals." On-Level and Extra-Support worksheets focus on vocabulary development, while Enrichment worksheets reinforce and enrich content.
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Unit 4: Plant and Animal Structures

Teacher eBook

Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House

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- Unit 4: Plant and Animal Structures

  Leveled Readers - Green

  Enrichment: Amazing Animals

  The leveled reader "Amazing Animals" is designed for above-level readers and can be used to extend key concepts from the unit "Plant and Animal Structures."
  Launch

- Unit 4: Plant and Animal Structures

  Leveled Readers - Red

  Extra-Support: What is a Plant?

  The leveled reader "What is a Plant?" is designed for below-level readers and can be used to reinforce key concepts from the unit "Plant and Animal Structures."
  Launch

- Unit 4: Plant and Animal Structures

  Teacher Edition

  Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House

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- Unit 4: Plant and Animal Structures

  Leveled Readers - Blue

  On-Level: What is a Plant?

  The leveled reader "What is a Plant?" is designed for on-level readers and can be used to enrich key concepts from the unit "Plant and Animal Structures."
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- Unit 4: Plant and Animal Structures

Student Edition

Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House

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- Unit 4: Plant and Animal Structures

  Unit Project Worksheet

  Plant and Animal Structures: Unit Project: Explore a Favorite Animal

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  Launch
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  Unit 4: Plant and Animal Structures

  Student eBook

  Plant and Animal Structures: Unit Review

  The Unit Review assesses student understanding of key ideas and concepts from the unit "Plant and Animal Structures."
  Launch
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  Unit 4: Plant and Animal Structures

  Leveled Readers Teacher's Guide

  Topic 10: Plants

  The Leveled Readers Teachers Guide provides teaching strategies and support (as well as reproducible English and Spanish worksheets) for the Unit 4 readers "What is a Plant?" and "Weird and Wacky Plants." On-Level and Extra-Support worksheets focus on vocabulary development, while Enrichment worksheets reinforce and enrich content.
  Launch
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  Unit 4: Plant and Animal Structures

  Unit Performance Task Worksheet

Plant and Animal Structures: Unit Performance Task: Engineer It - Design a House

This is the Unit Performance Task worksheet for "Engineer It - Design a House." During this task, children will define a problem and design a solution by applying the structure and function of the parts of water plants.
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Unit 4: Plant and Animal Structures

Teacher eBook

Plant and Animal Structures: Unit Review

The Unit Review assesses student understanding of key ideas and concepts from the unit "Plant and Animal Structures."
Launch

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Unit 4: Plant and Animal Structures

Leveled Readers - Blue

On-Level: What Can We Learn About Animals?

The leveled reader "What Can We Learn About Animals?" is designed for on-level readers and can be used to enrich key concepts from the unit "Plant and Animal Structures."
Launch

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Unit 4: Plant and Animal Structures

Leveled Readers - Green

Enrichment: Weird and Wacky Plants

The leveled reader "Weird and Wacky Plants" is designed for above-level readers and can be used to extend key concepts from the unit "Plant and Animal Structures."
Launch

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Unit 4: Plant and Animal Structures

Leveled Readers - Red

Extra-Support: What Can We Learn About Animals?

The leveled reader "What Can We Learn About Animals?" is designed for below-level readers and can be used to reinforce key concepts from the unit "Plant and Animal Structures."
Launch

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Unit 4: Plant and Animal Structures

Unit Project Worksheet

Plant and Animal Structures: Unit Project: Explore a Favorite Animal (Editable)

This is the editable Unit Project worksheet for "Explore a Favorite Animal." During this project, children will:

- Develop questions about how an animal meets its particular needs for survival.
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Unit 4: Plant and Animal Structures

Teacher Edition

Plant and Animal Structures: Unit Review

The Unit Review assesses student understanding of key ideas and concepts from the unit "Plant and Animal Structures."

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Unit 4: Plant and Animal Structures

You Solve It

Build a Safety Helmet (Teacher)

Teacher support materials are available for "Build a Safety Helmet." During this activity, students will use their knowledge of biomimicry to complete an engineering challenge. Students first explore how animals inspired objects and tools used in a school. Then, students are tasked to construct a safety helmet for a construction worker using animal structures as inspiration for their designs.

Integration of Career Exploration, Life Literacies and Key Skills

Students will establish and follow rules, routines, and responsibilities throughout the year

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
TECH.9.4.2.IML.1	Identify a simple search term to find information in a search engine or digital resource.

CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
	Young people can have a positive impact on the natural world in the fight against climate change.
TECH.9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
	Digital tools and media resources provide access to vast stores of information that can be searched.
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.
TECH.9.4.2.DC.7	Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
TECH.9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
WRK.9.2.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
	Different types of jobs require different knowledge and skills.

Technology and Design Integration

Students will interact with the lessons through the Smartboard.

TECH.8.1.2	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e., games, museums).

Interdisciplinary Connections

Students go to the STEM lab bi-monthly to create hands-on projects that align with the unit.

Students will listen to and read non-fiction texts about plant and animal structures.

LA.RI.1.1	Ask and answer questions about key details in a text.
LA.RI.1.2	Identify the main topic and retell key details of a text.
LA.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
LA.RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
LA.RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
LA.RI.1.8	Identify the reasons an author gives to support points in a text and explain the application of this information with prompting as needed.

LA.RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
LA.RI.1.10	With prompting and support, read informational texts at grade level text complexity or above.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

See suggestions in the teacher manual for differentiation for struggling and advanced learners.

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

IEP and 504 accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a

standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Unit tests that will show growth over time.

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Self-Check and Unit Reviews

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

Self-Check and Unit Reviews

Instructional Materials

HMH Science Dimensions prgram materials

Materials listed for hands on exploration.

Standards

SCI.1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. The shape and stability of structures of natural and designed objects are related to their function(s). All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. Structure and Function
SCI.1.LS1.A	Structure and Function Use materials to design a device that solves a specific problem or a solution to a specific problem. Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears. Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Constructing Explanations and Designing Solutions