

Winslow Township School District

Grade 1 Science

Unit 4: About Our Earth

Overview: In this unit of study, students develop an understanding of how plants and animals use their parts to help them survive, grow, and meet their needs. Students will construct possible solutions, sketching their ideas or make a physical model. Students are expected to demonstrate grade-appropriate proficiency in constructing explanations, designing solutions, and in developing and using models. Students are expected to use these practices to demonstrate understanding of the core ideas.

Overview	Standards for Science	Unit Focus	Essential Questions
<p>Unit 4</p> <p style="text-align: center;">About Our Earth</p>	<ul style="list-style-type: none"> ● 1-LS1-1 ● 1-LS1-2 ● K-2-ETS1-2 ● WIDA 1,4 	<ul style="list-style-type: none"> ● Researching texts and media to analyze the physical characteristics of plants and animals. ● Describing the physical characteristics of plants and animals as well as their purpose. ● Determining the function of an object based on its shape and structure. (Describing the purpose of plants or animals' physical characteristics.) ● Designing logical solutions to real problems. ● Explaining how animals respond to danger in their surroundings. 	<ul style="list-style-type: none"> ● What are some kinds of lands? ● What are some kinds of water? ● How does Earth change? ● What are natural resources? ● What can we observe about rocks and soil?
<p><i>Unit 4: Enduring Understandings</i></p>	<ul style="list-style-type: none"> ● Every human-made product is designed by applying some knowledge of the natural world. ● The shape of natural and human-made objects are related to their function. ● 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. ● Animals have different behaviors that help them survive. ● Plants have different parts that help them survive and grow. (Roots, stems, leaves, flowers, fruits) 		<ul style="list-style-type: none"> ● How can we protect Natural Resources? ● What is an environment? ● What helps plants and animals live in places? ● How do plants and animals need each other? ● What lives in a forest, desert, and an ocean?

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Curriculum Unit 4	Standards		Pacing	
			Days	Unit Days
Unit 4: About Our Earth	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.	13	45
	1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	13	
	K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	13	
	Assessment, Re-teach and Extension		6	

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Disciplinary Core Ideas	Indicator #	Indicator
<p>LS1.A: Structure and Function 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. (1-LS1-1)</p> <p>LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)</p> <p>LS1.D: Information Processing Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)</p> <p>ETS1.B: Developing Possible Solutions Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. (K-2-ETS1-2)</p>	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.
	1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
	K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

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• Assessment Plan

<ul style="list-style-type: none"> • Class discussions • Independent & group work/projects • Teacher and/or book series provided quizzes, tests, and a performance task to assess student mastery • Homework monitor and assess class work • Benchmark assessments • Teacher Observations • Performance Tasks 	<ul style="list-style-type: none"> • Short Constructed Responses • How Animals Meet Their Needs: Play an interactive game and learn about how animals meet their needs. Students click on a projector button and an animal appears on the screen. The animal's adaptation is revealed as a clue for the students to choose which need the adaptation provides. A provided list of needs includes: oxygen, climate, food, water, shelter/protection. If the student chooses correctly, a short explanation and more information is revealed about the adaptation. If the student's choice is incorrect, the student is directed to re-read the original clue and try again.
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Resources

Activities

<ul style="list-style-type: none"> • Chromebooks • HSP Science Teacher Manual • Lab Explorations • Big Books pg. • Leveled Readers • Songs on CD • Activity book • Vocab activities • vocab cards • Group discussions • Manipulatives • SMARTboard / Mimio Technology • Google Applications (Documents, Forms, Spreadsheets, Presentation) • Linkit • Readworks website • NJ Department of Education 	<ul style="list-style-type: none"> • How Do Animals Move? Students will identify how animals use different body parts (structures) to move and survive in nature. • Bee-ing an Engineer with Wisconsin Fast Plants: Students will explore Fast Plants' flowers and learn how flowers and their internal structures are related to their functions (in pollination and reproduction). Students will also explore how bees have structures that are associated with pollination functions, using "bee sticks" to pollinate their flowers and observing bee and flower structures with guides. • Where in the Wild?: Using the book titled Where in the Wild? Camouflages Creatures Concealed and Revealed by Davide Schwartz and Yeal Schy students develop an understanding of how particular features help animals survive. This lesson focuses on the use of camouflage as a feature animals use to hide from predators and help them to catch prey.
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Instructional Best Practices and Exemplars

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| 1. Identifying similarities and differences | 6. Cooperative learning |
| 2. Summarizing and note taking | 7. Setting objectives and providing feedback |
| 3. Reinforcing effort and providing recognition | 8. Generating and testing hypotheses |
| 4. Homework and practice | 9. Cues, questions, and advance organizers |
| 5. Nonlinguistic representations | 10. Manage response rates |

9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, Preparation and Training & 9.4 Life Literacies and Key Skills

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).

9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).

9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.IML.3: Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.

Additional opportunities to address 9.1, 9.2 & 9.4:

Philadelphia Mint

<https://www.usmint.gov/learn/kids/resources/educational-standards>

Different ways to teach Financial Literacy.

<https://www.makeuseof.com/tag/10-interactive-financial-websites-teach-kids-money-management-skills/>

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Modifications for Special Education/504

Students with special needs: The students' needs will be addressed on an individual and grade level using a variety of modalities.

Accommodations will be made for those students who need extra time to complete assignment. Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

- Small group instruction
- Audio books/ Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Modeling and guided practice
- Read directions aloud
- Repeat, rephrase and clarify directions
- Extended time as needed
- Break down assignments into smaller units
- Provide shortened assignments
- Modify testing format
- Repeat directions as needed
- Graphic organizers
- Study Guides, Study Aids and Re teaching as needed

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Modifications for At-Risk Students

Formative and summative data will be used to monitor student success. At first signs of failure, student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations

- Audio books and Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Extended time as needed
- Read directions aloud
- Assist with organization
- Use of computer
- Emphasize/highlight key concepts
- Recognize success
- Provide timelines for work completion
- Break down multi-step tasks into smaller chunks
- Provide copy of class notes and graphic organizer

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English Language Learners	Modifications for Gifted Students
<p>All WIDA Can Do Descriptors can be found at this link: https://wida.wisc.edu/teach/can-do/descriptors</p> <p><input type="checkbox"/> Grade 1 WIDA Can Do Descriptors:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing <input type="checkbox"/> Oral Language <p>Students will be provided with accommodations and modifications that may include:</p> <ul style="list-style-type: none"> • Relate to and identify commonalities in science studies in student’s home country • Assist with organization • Use of computer • Emphasize/highlight key concepts • Teacher Modeling • Peer Modeling • Label Classroom Materials - Word Walls 	<p>Students excelling in mastery of standards will be challenged with complex, high level challenges related to the topic.</p> <ul style="list-style-type: none"> • Raise levels of intellectual demands • Require higher order thinking, communication, and leadership skills • Differentiate content, process, or product according to student’s readiness, interests, and/or learning styles • Provide higher level texts • Expand use of open-ended, abstract questions • Critical and creative thinking activities that provide an emphasis on research and in-depth study • Enrichment Activities/Project-Based Learning/ Independent Study <p>Additional Strategies may be located at the links:</p> <ul style="list-style-type: none"> ❖ Gifted Programming Standards ❖ Webb’s Depth of Knowledge Levels and/or Revised Bloom’s Taxonomy ❖ REVISED Bloom’s Taxonomy Action Verbs

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Interdisciplinary Connections

Interdisciplinary Connections:

ELA Standards:

RI.1.1 Ask and answer questions about key details in a text. (1-LS1- 2)

RI.1.2 Identify the main topic and retell key details of a text. (1-LS1- 2)

RI.1.10 With prompting and support, read informational texts appropriately complex for grade. (1-LS1-2)

W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-LS1- 1)

Math Standards:

1.NBT.B.3 Compare two two-digit numbers based on the meanings of the tens and one digits, recording the results of comparisons with symbols. (1-LS1-2)

1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning uses. Understand that in adding two- digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (1- LS1-2)

1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (1-LS1-2)

1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (1-LS1- 2)

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Integration of Computer Science and Design Thinking NJSL 8

- 8.1.2.CS.1:** Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
- 8.1.2.DA.1:** Collect and present data, including climate change data, in various visual formats
- 8.1.2.DA.3:** Identify and describe patterns in data visualizations.
- 8.1.2.DA.4:** Make predictions based on data using charts or graphs.
- 8.2.2.ED.1:** Communicate the function of a product or device.
- 8.2.2.ED.2:** Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- 8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process.
- 8.2.2.ED.4:** Identify constraints and their role in the engineering design process.
- 8.2.2.ITH.1:** Identify products that are designed to meet human wants or needs.
- 8.2.2.ITH.2:** Explain the purpose of a product and its value.
- 8.2.2.ITH.3:** Identify how technology impacts or improves life.
- 8.2.2.ITH.4:** Identify how various tools reduce work and improve daily tasks.
- 8.2.2.ITH.5:** Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.
- 8.2.2.NT.2:** Brainstorm how to build a product, improve a designed product, fix a product that has stopped working, or solve a simple problem.