



Work of Water

Draft Date 02-06-2026	Course (Draft) Grade 2 English Language Arts, Grade 2 Science	Duration 7 Week(s)	Grades 2	Subjects English Language Arts	Team Amanda Schlee, Amanda Schlee, Kathy Nonthakan, Campbell Nicole, Brubaker Khristine, Linton Shelly, Ashleigh Harbeck, Kendra Schreffler, Brittany Haines
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Focus

Now that we've spent some time learning about countries in our world, it's time to continue our journey of learning about the Earth, but this time from a science perspective. In this unit, we'll explore how water shapes the Earth's surface. We'll read about soil and erosion and we'll construct and use models of mountains to show how water flows downhill, breaking down huge rocks into the tiny grains of sand you find at the beach. You'll also build and use model hills to investigate the causes of erosion and design solutions to address problems caused by erosion. At the end of the unit, you'll work with your classmates to discover and brainstorm solutions to problems caused by erosion right at your own school!

Stage 1: Learning Goals

Established Goals	Transfer
Standards	Long-Term Transfer Goals
Pennsylvania Core Standards English Language Arts: 2 - Identify the main idea of a multi-paragraph text as well as the focus of specific paragraphs within the text. (CC.1.2.2.A) - Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (CC.1.2.2.B) Explain how graphic representations contribute to and clarify a text. (CC.1.2.2.G)	What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to... - Reading Informational Text / Reading Literature: Read to gain knowledge, build critical thinking skills, and spark curiosity and interest. (T1) - Writing: Communicate information and ideas clearly to address task, purpose, and intended audience. (T2) - Speaking and Listening: Effectively utilize appropriate speaking techniques (volume, inflection, pace, etc.) and vocabulary in a variety of settings to clearly communicate ideas and information. (T3) - Weigh evidence and use scientific approaches to ask questions, investigate, and make informed decisions. (Innovative Problem Solver) (T4)

- Write opinion pieces on familiar topics or texts. (CC.1.4.2.G)
- Identify the topic and state an opinion. (CC.1.4.2.H)
- Support the opinion with reasons that include details connected to the opinion. (CC.1.4.2.I)
- Create an organizational structure that includes reasons and includes a concluding statement. (CC.1.4.2.J)
- **Use a variety of words and phrases to appeal to the audience.** (CC.1.4.2.K)
- **Demonstrate a grade appropriate command of the conventions of standard English grammar and spelling.** (CC.1.4.2.L)
- With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing. (CC.1.4.2.T)
- **Participate in individual or shared research and writing projects.** (CC.1.4.2.V)
- **Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.** (CC.1.5.2.C)

Pennsylvania Academic Standards

Science (2023): 2 Standards

- Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Meaning	
Understandings	Essential Questions
What specifically do you want students to understand? What inferences should they make? Students will understand that... ■ EU1: Effective readers identify key details of informational texts to determine main ideas. (U1) ■ EU2: Diverse media that features a range of perspectives on a given topic helps individuals deepen and challenge their thinking. (U2) ■ EU3: Effective writers make deliberate and strategic choices when considering purpose and audience to prove an opinion/claim about a topic. (U3) ■ EU4: Effective writers choose appropriate/relevant evidence from text(s) to support their opinion. (U4) ■ EU5: Including accurate facts and relevant, descriptive details in oral reports and storytelling enhances the credibility, depth and focus of communication. (U5) ■ EU6: Engaging in collaborative discussions allows students to learn from each other, deepen their understanding of topics and gain new perspectives. (U6) ■ EU7: Earth is often called the water planet because of the abundance of liquid water on its surface and because water's unique combination of physical	What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering... ■ EQ1A: What details help me find the main idea? (Q1) ■ EQ1B: What do I need to know to retell/ summarize this text? (Q2) ■ EQ2: How does this text (for example, illustration, table, video clip) help me understand the topic? (Q3) ■ EQ3: How does who I am writing for impact the way I am supporting my opinion about the topic? (Q4) ■ EQ4: How do I choose relevant information to include in my writing? How does that help support my claim? (Q5) ■ EQ5: How do I stay focused when sharing information or telling a story? How do I make sure my information is accurate? How do I choose interesting details when I talk about something or tell a story? (Q6) ■ EQ6: How do I learn from others in group discussions? How do I build on others' ideas? How do I share my thoughts clearly? How do I show others I am listening? (Q7) ■ EQ7: How do the properties and movements of water shape Earth's surface and affect its systems? (Q8)

Clarifying Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.

Assessment Boundary: Assessment does not include quantitative measurements of timescales. (3.3.2.A)

- Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

Clarifying Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

Assessment Boundary: N/A (3.3.2.B)

- Develop a model to represent the shapes and kinds of land and bodies of water in an area.

Clarifying Statement: N/A

Assessment Boundary: Assessment does not include quantitative scaling in models. (3.3.2.C)

- Obtain information to identify where water is found on Earth and that it can be solid or liquid.

Clarifying Statement: N/A

and chemical properties is central to Earth's dynamics. (U7)

Acquisition of Knowledge & Skill

Knowledge

What facts and basic concepts should students know and be able to recall?
Students will know...

- Water is found in lakes, rivers, ponds and the ocean in solid and liquid forms. Water has an effect on the shape of landforms and these changes to Earth's surface can happen quickly or slowly over time. (K1)
- Changes to the Earth's surface due to water movement can be prevented through natural and man-made means. (K2)
- Graphic representations of information can provide main ideas and key details about a topic (K3)
- Writers make deliberate choices about how to share information with a specific audience for the purpose of solving an erosion problem in the community. (K4)

Skills

What discrete skills and processes should students be able to use? Students can...

- I can use graphic representation(s) in a variety of ways: to interpret the meaning of the information being presented, to identify the important details being described, to identify and describe an extension of the written text. (S1)
- I can collaborate with peers to craft an opinion on the best way to solve a community problem, preparing a shared written product using the writing process. The final opinion will be thoughtfully shared with an audience through speaking. (S2)
- I can engage in dialogue with the intended audience during the sharing of the class opinion on the topic, asking and answering questions to enhance the sharing of information. (S3)
- I can describe evidence from observation (firsthand or from text/ visuals). I can use my observations to collaborate with my peers in designing a model that presents a solution to an erosion issue in the local community. (S4)

Assessment Boundary: N/A (3.3.2.D)

Profile of a CV Learner

- Innovative Problem Solving: Students will be able to independently use their learning to approach new problems with curiosity and creativity while consistently seeking growth through self-reflection and a willingness to accept constructive feedback. (PCVL.IPS)

- I can develop models of various landforms and bodies of water to identify and describe relationships between the Earth and water. (S5)



States of Matter

Draft Date 08-07-2025	Course Grade 2 Science	Duration 5 Day(s)	Grades 2	Subjects Science	Team Jill Koser, Ashleigh Harbeck
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Focus

In this unit, students delve into the fascinating world of solid and liquid states of matter. They investigate how water exists in various forms around the globe and how it can transition into solid ice through freezing. Additionally, students explore the properties of a variety of materials, making observations to build explanations regarding the changes induced by heating and cooling. They will learn to differentiate between reversible changes, such as melting and freezing, and irreversible changes, enhancing their understanding of physical transformations.

Stage 1: Learning Goals

Established Goals	Transfer	
Standards	Long-Term Transfer Goals	
Pennsylvania Academic Standards Science (2023): 2 Standards Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Clarifying Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency. Assessment Boundary: Assessment of quantitative measurements is limited to length. (3.2.2.B)	What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to... Approach science as a reliable and testable way of knowing and explaining the natural world and designed world. (Life-Long Learner) (T1)	
	Meaning	
	Understandings	Essential Questions
	What specifically do you want students to understand? What inferences should they make? Students will understand that... Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms. (U1)	What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering... - How can one explain the structure, properties, and interactions of matter? (Q1) - How can one explain and predict interactions between objects within systems? (Q2)

- Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Clarifying Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.

Assessment Boundary: N/A (3.2.2.D)

- Obtain information to identify where water is found on Earth and that it can be solid or liquid.

Clarifying Statement: N/A

Assessment Boundary: N/A (3.3.2.D)

Profile of a CV Learner

- Life-Long Learner: Students will be able to independently use their learning to analyze past and ongoing performance, adjust thinking processes to new contexts, and use information to make informed and conscientious decisions. (PCVL.LLL)

Acquisition of Knowledge & Skill

Knowledge	Skills
What facts and basic concepts should students know and be able to recall? Students will know... ■ When some things are mixed or changed, they can turn into something new with different properties. (K1) ■ How to describe how things change when they are mixed or heated, and how to make good predictions about what will happen next. (K2) ■ That all matter is made of tiny particles that can combine in different ways to make many different materials. (K3) ■ Water can change the land through moving, freezing, and melting. It can shape the Earth by washing away soil, making rivers and lakes, and helping plants grow. (K4)	What discrete skills and processes should students be able to use? Students can... ■ Observe and describe how materials change when they are mixed or changed. (S1) ■ Explain how a new substance is different from what I started with. (S2) ■ Describe what happens when materials are heated or mixed. (S3) ■ Make predictions about how materials will change before testing them (S4) ■ Explain that everything is made of tiny parts called particles. (S5) ■ Sort and describe materials based on how their parts are put together. (S6) ■ Describe how water moves and changes. (S7) ■ Explain how water can change the land and help plants grow. (S8)



Material Magic

Draft Date 02-06-2026	Course (Draft) Grade 2 English Language Arts, Grade 2 Science	Duration 4 Week(s)	Grades 2	Subjects English Language Arts	Team Amanda Schlee, Amanda Schlee, Kathy Nonthakan, Campbell Nicole, Brubaker Khristine, Linton Shelly, Ashleigh Harbeck, Kendra Schreffler, Brittany Haines
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Focus

As we continue to journey around the world, we haven't yet taken the time to understand what the objects we've seen so far are made of. In this next unit, we will explore the properties of materials and matter. We will describe and classify different types of materials by properties like hardness, flexibility, and absorbency and investigate how those properties are useful in meeting basic needs such as clothing and cooking. We will also investigate how heating and cooling affect the properties of materials. After learning about the basic properties of matter, we will extend our learning to focus on bridges. We'll compare and contrast concrete and steel bridges to determine the unique features of each material and how these features affect how bridges are designed and how they function each day.

Stage 1: Learning Goals

Established Goals	Transfer
Standards	Long-Term Transfer Goals
Pennsylvania Core Standards English Language Arts: 2 - Identify the main idea of a multi-paragraph text as well as the focus of specific paragraphs within the text. (CC.1.2.2.A) - Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (CC.1.2.2.B)	What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to... - Reading Informational Text / Reading Literature: Read to gain knowledge, build critical thinking skills, and spark curiosity and interest. (T1) - Writing: Communicate information and ideas clearly to address task, purpose, and intended audience. (T2) - Evaluate systems, in order to connect how form determines function and how any change to one component affects the entire system. (Global Citizen, Innovative Problem Solver) (T3)

- **Describe how reasons support specific points the author makes in a text.** (CC.1.2.2.H)
- **Write opinion pieces on familiar topics or texts.** (CC.1.4.2.G)
- Identify the topic and state an opinion. (CC.1.4.2.H)
- Support the opinion with reasons that include details connected to the opinion. (CC.1.4.2.I)
- **Create an organizational structure that includes reasons and includes a concluding statement.** (CC.1.4.2.J)
- Use a variety of words and phrases to appeal to the audience. (CC.1.4.2.K)
- Demonstrate a grade appropriate command of the conventions of standard English grammar and spelling. (CC.1.4.2.L)

Pennsylvania Academic Standards

Science (2023): 2 Standards

- Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Clarifying Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.

Assessment Boundary: N/A (3.2.2.A)

Meaning	
Understandings	Essential Questions
What specifically do you want students to understand? What inferences should they make? Students will understand that... ■ EU1: Effective readers identify key details of informational texts to determine main ideas. (U1) ■ EU2: Strong inferences are based on specific text details that lead to a broader topic, point or conclusion. (U2) ■ EU3: Effective readers evaluate the style, tone and use of evidence that an author chooses to include in the text to convey an idea. (U3) ■ EU4: Effective writers make deliberate and strategic choices when considering purpose and audience to convey information clearly about a topic. (U4) ■ EU1: All forms of matter exist as a result of the combination or rearrangement of atoms. (U5) ■ EU2: The atoms of some substances combine or rearrange to form new substances that have different properties. (U6)	What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering... ■ EQ1A: What details help me find the main idea? (Q1) ■ EQ1B: What do I need to know to retell/ summarize this text? (Q2) ■ EQ2: What is the author trying to tell me based on the evidence used? How does this connect to what I already know and believe? (Q3) ■ EQ3: How does the author support their argument? (Q4) ■ EQ4A: How do I choose relevant information to include in my writing? How does that help support my explanation? (Q5) ■ EQ4B: What is the best way to organize this information? (Q6) ■ EQ1: How do particles combine to form the variety of matter one observes? (Q7) ■ EQ2: How do substances combine or change (react) to make new substances? (Q8)

- Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

Clarifying Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.

Assessment Boundary: Assessment of quantitative measurements is limited to length. (3.2.2.B)

- Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

Clarifying Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.

Assessment Boundary: N/A (3.2.2.C)

- Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Clarifying Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.

Assessment Boundary: N/A (3.2.2.D)

Acquisition of Knowledge & Skill	
Knowledge	Skills
What facts and basic concepts should students know and be able to recall? Students will know... ■ Authors have a purpose for writing informational text (to inform, persuade, or entertain). (K1) ■ Authors make choices about the order of reasons provided in the text to share multiple key points about a topic. (K2) ■ Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (K3) ■ Different properties of matter are suited to different purposes. (K4) ■ A great variety of objects can be built from a small set of pieces. (K5) ■ Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (K6)	What discrete skills and processes should students be able to use? Students can... ■ I can identify the author's purpose for writing the text and explain how the key points are important to the topic. (S1) ■ I can explain how the order of reasons/details, inclusion of specific text features and author's word choice supports the purpose and key points. (S2) ■ I can write in response to my reading and analyze the author's strategic choices about a topic. (S3) ■ I can plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (S4) ■ I can make observations (firsthand or from media) to construct an evidence-based account for natural phenomena, and I can use these observations to make a claim about different materials/types of matter. (S5)

Profile of a CV Learner

- Innovative Problem Solving: Students will be able to independently use their learning to approach new problems with curiosity and creativity while consistently seeking growth through self-reflection and a willingness to accept constructive feedback. (*PCVL.IPS*)



Animal and Plant Adventures

Draft Date 02-06-2026	Course (Draft) Grade 2 English Language Arts, Grade 2 Science	Duration 5 Week(s)	Grades 2	Subjects English Language Arts	Team Amanda Schlee, Kathy Nonthakan, Campbell Nicole, Amanda Schlee, Brubaker Kristine, Linton Shelly, Ashleigh Harbeck, Kendra Schreffler, Brittany Haines
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Focus

As we continue our journey around the world, we turn our focus to the plant and animal habitats that surround us. In this unit, you will get an opportunity to read texts and make observations about plants and animals in particular habitats, which is what real scientists do every day in their jobs. Scientists also write reports to share their findings. A report is a specific structure for writing that includes facts from your learning and observations (what you can see and hear). During this unit, you'll get to choose an animal to research and share information about so others can learn from you!

Stage 1: Learning Goals

Established Goals	Transfer
Standards	Long-Term Transfer Goals
Pennsylvania Core Standards English Language Arts: 2 - Identify the main idea of a multi-paragraph text as well as the focus of specific paragraphs within the text. (CC.1.2.2.A) - Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (CC.1.2.2.B) Describe the connection between a series of events, concepts, or steps in a procedure within a text. (CC.1.2.2.C)	What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to... - Reading Informational Text / Reading Literature: Read to gain knowledge, build critical thinking skills, and spark curiosity and interest. (T1) - Writing: Communicate information and ideas clearly to address task, purpose, and intended audience. (T2) - Approach science as a reliable and testable way of knowing and explaining the natural world and designed world. (Life-Long Learner) (T3)

- **Use various text features and search tools to locate key facts or information in a text efficiently.** (CC.1.2.2.E)
- Write informative/ explanatory texts to examine a topic and convey ideas and information clearly. (CC.1.4.2.A)
- Identify and introduce the topic. (CC.1.4.2.B)
- Develop the topic with facts and/or definitions (CC.1.4.2.C)
- **Group information and provide a concluding statement or section.** (CC.1.4.2.D)
- Choose words and phrases for effect. (CC.1.4.2.E)
- Demonstrate a grade appropriate command of the conventions of standard English grammar and spelling. Capitalize proper nouns. Use commas and apostrophes appropriately. Spell words drawing on common spelling patterns. Consult reference material as needed. (CC.1.4.2.F)
- **Participate in individual or shared research and writing projects.** (CC.1.4.2.V)

Pennsylvania Academic Standards

Science (2023): 2 Standards

- Plan and conduct an investigation to determine if plants need sunlight and water to grow.

Clarifying Statement: N/A

Meaning	
Understandings	Essential Questions
What specifically do you want students to understand? What inferences should they make? Students will understand that... ■ EU1: Effective readers identify key details of informational texts to determine main ideas. (U1) ■ EU2: Authors use a variety of features to help readers identify the organized text structure. (U2) ■ EU3: Effective writers make deliberate and strategic choices when considering purpose and audience to convey information clearly about a topic. (U3) ■ EU4: Strategic researchers gather information from a variety of reliable resources to answer a specific research question or explore a topic. (U4) ■ EU5: Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment. (U5) ■ EU6: Biodiversity - the multiplicity of genes, species, and ecosystems - provides humans with renewable resources, such as food, medicines and clean water. (U6)	What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering... ■ EQ1A: What details help me find the main idea? (Q1) ■ EQ1B: What do I need to know to retell/ summarize this text? (Q2) ■ EQ2: How does the way this information is organized help me understand the text? (Q3) ■ EQ3A: How do I choose relevant information to include in my writing? How does that help support my explanation? (Q4) ■ EQ3B: What is the best way to organize this information? (Q5) ■ EQ4: How do I find reliable and useful sources for my research? How do I compare information found from multiple sources to figure out what is accurate? (Q6) ■ EQ5A: How do organisms interact with the living and nonliving environments to obtain matter and energy? (Q7) ■ EQ6: What is biodiversity, how do humans affect it, and how does it affect humans? (Q8)

Assessment Boundary: Assessment is limited to testing one variable at a time. (3.1.2.A)

- Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Clarifying Statement: N/A

Assessment Boundary: N/A (3.1.2.B)

- Make observations of plants and animals to compare the diversity of life in different habitats.

Clarifying Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.

Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats. (3.1.2.C)

Environmental Literacy & Sustainability (2023): K-2 Environmental Literacy & Sustainability

- Categorize ways people harvest, redistribute, and use natural resources. (3.4.K-2.A)

Profile of a CV Learner

- Life-Long Learner: Students will be able to independently use their learning to analyze past and ongoing performance, adjust thinking processes to new contexts, and use information to make informed and conscientious decisions. (PCVL.LLL)

Acquisition of Knowledge & Skill

Knowledge

What facts and basic concepts should students know and be able to recall?
Students will know...

- Facts about three different types of habitats around the world (rainforest, desert, temperate forest) (K1)
- Scientists can research and gain information from both reading and observation (K2)
- How to structure an informational animal report using both details from text and observations (K3)
- Plants depend on sunlight and water to grow (K4)
- Plants depend on animals for pollination or to move their seeds around (K5)
- There are many different kind of living things in any area and they exist in different places on land and in water (K6)

Skills

What discrete skills and processes should students be able to use? Students can...

- I can use informational text features to efficiently locate information in a text that helps me understand a topic. (S1)
- I can make connections between details in a text to determine the main ideas. (S2)
- I can read informational text to research a specific topic with the end goal of writing an animal report. I can group similar ideas together as I organize my writing. (S3)
- I can plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (S4)
- I can develop a simple model based on evidence to represent a proposed object or tool. (S5)
- I can make observations (firsthand or from media) to collect data which can be used to make comparisons. (S6)