

Elementary - 1st Grade Science

North Boone CUSD 200

UNITS (3/3 SELECTED)

Unit 1: Sound and Light Energy

Unit 2: Earth & Space

Unit 3: Plants, Animals, and Offspring

SUGGESTED DURATION

17 lessons

20 lessons

34 lessons

Unit 1: Sound and Light Energy

Elementary - 1st Grade Science - Last Updated on June 4, 2019

STANDARDS

1-PS4-1.: Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

1-PS4-2.: Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.

1-PS4-3.: Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.

PRIORITY STANDARDS

1-PS4-1.	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
1-PS4-2.	Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.

Unit 1: Sound and Light Energy

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DESIRED RESULTS

Enduring Understandings	Essential Question(s)
<p>Sound can make matter vibrate.</p> <p>Vibrating matter can make sound.</p> <p>Objects can be seen when illuminated with light or if they create their own light.</p> <p>Different materials let different amounts of light pass through.</p> <p>A shadow is created when a material blocks all the light.</p>	<p>How is sound made?</p> <p>How does sound change?</p> <p>What is light?</p> <p>How does light travel through different materials?</p>

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none"> • Key concepts and vocabulary associated with sound and light energy, including: sound, energy, vibrate, matter, waves, volume, pitch, light, shadow, materials, transparent, opaque, translucent • How sound can make matter vibrate • Vibrating matter can make sound • Sound vibrations can be seen but sound waves cannot • The sound of the human voice starts in the throat • Some animals make sound by rubbing parts of their body together • Loud sounds have larger sound waves that travel further than soft sounds that have smaller sound waves • Faster vibrations produce sounds with higher pitches; and slower vibrations produce sounds with lower pitches • Shadows are created when solid objects block light • The shape of the shadow is the same as the shape of the object 	<ul style="list-style-type: none"> • Use key concepts and vocabulary associated with sound and light in discussions, inquiry activities, and performance tasks • Generate and record observations about the relationship between sound and vibrations, the connection between light and sight, and the behavior of light • Formulate questions about instruments and sound, animal sounds, shadows, and light shining through an object • Describe and/or vocally mimic the sounds of different musical instruments • Design and create an instrument that will make sound • Observe the relationship between how loud a sound is and sound waves • Observe how sound waves radiate from musical instruments at various volumes • Observe how the vibrations of their throat change when they make sounds of different pitch and volume with their voice

Unit 1: Sound and Light Energy

Elementary - 1st Grade Science - Last Updated on June 4, 2019

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• Light is a form of energy that helps us see• Light is both natural and man-made• Shadows change size and shape depending on where the light is when it is hitting the object• How much light can pass through an object determines whether the object is called transparent, translucent, or opaque	<ul style="list-style-type: none">• Compare vibrations of low and high pitched sounds• Plan an investigation to show how shadows change size during the course of a day• Make a model and write instructions for lighting a school play• Explore which items let light pass through them, which let light partially pass through, and which totally block light• Observe different materials in their school that are transparent, translucent, and opaque and how the materials are used

Unit 2: Earth & Space

Elementary - 1st Grade Science - Last Updated on June 4, 2019

STANDARDS

1-ESS1-1.: Use observations of the sun, moon, and stars to describe patterns that can be predicted.

1-ESS1-2.: Make observations at different times of year to relate the amount of daylight to the time of year.

PRIORITY STANDARDS

1-ESS1-2.	Make observations at different times of year to relate the amount of daylight to the time of year.
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Unit 2: Earth & Space

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DESIRED RESULTS

Enduring Understandings	Essential Question(s)
<p>Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.</p> <p>Seasonal patterns of sunrise and sunset can be observed, described, and predicted.</p>	<p>What causes the pattern of day and night?</p> <p>What causes the seasons?</p>

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• Key concepts and vocabulary associated with earth and space, including: sun, planet, daytime, nighttime, rotate, season, summer, fall, winter, spring• Earth's rotation causes day and night: it is daytime for the part of the earth facing the sun and nighttime for the part of the earth faces away from the sun• Earth is a planet that moves around the sun• Shadows are short when the sun is high in the sky and long when the sun is low in the sky• The sun is low in the sky in the morning, high in the sky at noon, and lower in the sky in the afternoon• Weather in each season is different in different places in the world, e.g. it is summer in New Zealand while it is winter in North America• The amount of daylight hours changes during the seasons• Typical things that happen during each season• Earth has seasons because it moves around the Sun and it tilts• The amount of daylight hours changes in each season	<ul style="list-style-type: none">• Use key concepts and vocabulary associated with earth and space in discussions, inquiry activities, and performance tasks• Generate and record observations about the day-night cycle and seasonal patterns of night and day• Formulate questions about the sun and the sky and seasonal changes in leaves of trees• How light shining from different angles affects the length and direction of the shadow cast by the object• Explore how light creates shadows.• Investigate how Earth's rotation causes day and night• Investigate how the length and direction of their shadow changes during the day• Observe that the Sun is at different places in the sky at different times of day• Investigate (via simulation) seasonal changes to sunrise, sunset, and weather in different places around the world• Show how some trees change at different times of the year

Unit 3: Plants, Animals, and Offspring

Elementary - 1st Grade Science - Last Updated on June 4, 2019

STANDARDS

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.

1-LS3-1.: Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

PRIORITY STANDARDS

1-LS1-2.	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
1-LS3-1.	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

Unit 3: Plants, Animals, and Offspring

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DESIRED RESULTS

Enduring Understandings	Essential Question(s)
<p>Plants and animals have external parts.</p> <p>Animals use their external parts as well as internal signals and processing to help them survive and grow</p> <p>Plants use their roots, stems, leaves, flowers, and fruits as well as some external signals to help them survive and grow</p> <p>Adult plants and animals can have offspring. Animal parents and offspring have behaviors that help the offspring survive.</p> <p>Young animals and plants are very much, but not exactly like their parents.</p> <p>Individual plants and animals of the same kind are similar, but can also vary in many ways.</p>	<p>How do different parts of a plant help it live?</p> <p>How do different body parts help animals?</p> <p>How do plants grow and change?</p> <p>How are plants like their parents?</p> <p>How are young animals like and unlike their parents?</p> <p>How do animal offspring survive?</p>

Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none"> • Key concepts and vocabulary associated with plants, animals, and offspring, including: flower, leaves, root, stem, fruit, nutrient, seed, mammal, bird, reptile, amphibian, fish, insect, gills, lungs, life cycle, seedling, inherit, trait, young, carnivore, herbivore, omnivore, behavior, learn, signal, adaptation • How the stem, leaves, flower, and root help a plant • Plants are living things because they need air, water, nutrients, sunlight, and space to exist and grow • Plants grow where they get what they need to live • How the different body parts of animals help them survive where they live it live 	<ul style="list-style-type: none"> • Use key concepts and vocabulary associated with plants, animals, and offspring in discussion, inquiry activities, and performance tasks • Generate and record observations about how young plants and animals are similar to and different from their parents; and, how young animals learn behaviors that help them survive • Formulate questions about: the parts of a plant; swimming sea turtles; a sprouting seed; how tulips are alike and different; how kittens are like and different from their mother cat; and, chirping birds • Design a model of a plant

Unit 3: Plants, Animals, and Offspring

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Students will know (Knowledge):	Students will be able to (Skills):
<ul style="list-style-type: none">• How seeds are formed and can grow into adult plants• The life cycle of plants is the sequence of a seed sprouting and becoming a seedling and then growing into an adult plant which makes seeds to start the cycle again• Another way that plants can grow is from pieces of the parent plant like leaf cuttings or pieces of potatoes with eyes• Young plants are very much, but not exactly, like their parents• Plants of the same kind are similar and yet can vary in many ways• Baby animals can look very different from their parents at the beginning, but over time grow to look more like their parents• Baby animals use sounds or behaviors to communicate their needs to their parents• Parent animals provide what their young need, take care of their young, and make adaptations in order to help their young survive• All animals need food and water and can be grouped as herbivores or carnivores based on what food they eat	<ul style="list-style-type: none">• Draw a model of an animal and explain how the animal uses its body parts to get what it needs• Investigate how to grow a sweet potato plant from its parts• Describe and illustrate how an apple tree grows from a seed, to a seedling, to an adult tree that flowers and produces apples• Observe, draw, and explain how two plants of the same kind are alike and different• Investigate how plants grow and survive in different amounts of sunlight• Create a model of a plant and its parent and label and explain what is alike and different between the seedling and the adult• Draw models to show relationships between young animals and their parents• Research the life cycle of a butterfly and show the differences at each stage of a butterfly's life in a model• Use a Venn diagram to show how a baby animal and its parent are alike and different• Explore different ways animals protect their young• Use a model to show what carnivore teeth and herbivore teeth look like• Research an animal and create a presentation (research project) that tells how the animal helps its offspring survive