

UTAH ALIGNMENT FORM**Resource Title:** Science Techbook - Grade 4**Publisher:** Discovery Education**ISBN (10 or 13 digit unique identifier is required):** 978-1-61708-790-5**Media (text, software, internet, multimedia):** Internet **Author:** Discovery Education**Copyright:** 2020 **Review Date:** July 19, 2021**Core Subject Area:** Science, Grade 4**Science, Grade 4**

Standard	Designated Sections, or URLs
Strand 4.1: ORGANISMS FUNCTIONING IN THEIR ENVIRONMENT	
Through the study of organisms, inferences can be made about environments both past and present. Plants and animals have both internal and external structures that serve various functions for growth, survival, behavior, and reproduction. Animals use different sense receptors specialized for particular kinds of information to understand and respond to their environment. Some kinds of plants and animals that once lived on Earth can no longer be found. However, fossils from these organisms provide evidence about the types of organisms that lived long ago and the nature of their environments. Additionally, the presence and location of certain fossil types indicate changes that have occurred in environments over time.	
4.1.1 Construct an explanation from evidence that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Emphasize how structures support an organism's survival in its environment and how internal and external structures of plants and animals vary within the same and across multiple Utah environments. Examples of structures could include thorns on a stem to prevent predation or gills on a fish to allow it to breathe underwater. (LS1.A)	Unit 5: Senses and Survival https://app.discoveryeducation.com/learn/techbook/units/831aa5af-4220-4939-9ae4-83bd865fc82a Concept 5.1: Adaptation and Survival Activity 5: Adaptations https://app.discoveryeducation.com/learn/techbook/units/831aa5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0bd9a240-6e41-486e-ae45-3cd9f3ca6cf6

Activity 6: The Panther Chameleon

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/d2ec81d1-f176-4a92-883c-c446c3ac7f35>

Activity 7: Birds and Their Beaks

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/da9ff605-6b22-4ad4-85ac-07d3b0a9923e>

Activity 8: Plant Adaptations

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/c8ef4c3d-6933-4c44-8e83-96b41e38df31>

Activity 9: Plant Adaptations

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/aadcd1e8-b9e6-45d4-9136-baef59e162cf>

Activity 10: Shaped for the Savannah

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/379b98ab-7598-4828-a2a3-6953c47a79ae>

Activity 11: Identifying Adaptations

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/adf8ca96-9d8b-4596-9044-b318b371b9ca>

Activity 12: Body Systems

<https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/39e516ab-779b-48ce-b270-dfc3744e57a7>

	Activity 13: Digestive System https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/cf8e2a3b-7ce8-4562-9411-7dbd46d4621e Activity 14: Respiratory System https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/21ba43c6-3ea0-44ce-8e2f-2517c07f4bd9 Activity 15: How Fish Breathe https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/1fc799ff-f0bf-458a-9629-fe02828727cb Activity 18: Where Will I Survive? https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/bc09d31a-3e6a-4fad-96c8-499bbd811434/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0efe2463-35c8-4d3f-9361-825f0ff558b0
4.1.2 Develop and use a model of a system to describe how animals receive different types of information from their environment through their senses, process the information in their brain, and respond to the information. Emphasize how animals are able to use their perceptions and memories to guide their actions. Examples could include models that explain how animals sense and then respond to different aspects of their environment such as sounds, temperature, or smell. (LS1.D)	Unit 5: Senses and Survival https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a Concept 5.2: Senses at Work Activity 5: Using Our Five Senses https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/dfc7cc5a-dc7b-4453-8852-0008b0d98eea Activity 6: Sensing the Environment https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/9dd0184a-e868-4456-af9c-a80b786e40ff

Activity 7: What Is the Nervous System? https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/85cec56d-675c-49b4-9ab9-fcbb9c1f653c Activity 8: Pizza and the Nervous System https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/2bd78ab7-a16a-4f8c-b865-4fc2ebff1440 Activity 9: Processing Sensory Information https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/d4a91629-de86-496a-9169-1f0172a2c9b7 Activity 10: Sensing the Environment https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/2f387277-8d6d-4605-a11a-45906ee0f06b Activity 11: Nerves https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/af6b47bb-3d09-4557-b709-b03ade6e5209 Activity 12: Hands-On Investigation: Reaction Time https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/e278d2f4-7111-444a-aef4-a2c0ca992fdf Activity 13: How the Nervous System Works https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/a5f6119d-1d85-4988-a08e-4ff13a4f5655 Activity 14: The Nervous System, Job of the Nervous System, and Describe the Nervous System https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/d787e661-00ec-43a9-9505-7d3889a7a04f

	Activity 15: Your Nervous System https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c80adf34-5931-43f4-ab9e-c9502ef1c0d9/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/62991099-d812-4784-941c-15a402ff7bcb Concept 5.3: Light and Sight Activity 5: Light Is Energy https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/49309e43-ff8b-4202-9b12-ca36b6df779f Activity 7: Hands-On Investigation: Light Observations https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/457b59ee-8c1f-47af-9238-9866cd627f39 Activity 11: Light Strikes Matter https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/e2e56649-57c4-4015-b095-18d8cd6cf28e Activity 14: Sight Model https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/a9149a79-2632-41e6-b097-9c9645c1ba88
4.1.3 Analyze and interpret data from fossils to provide evidence of the stability and change in organisms and environments from long ago. Emphasize using the structures of fossils to make inferences about ancient organisms. Examples of fossils and environments could include comparing a trilobite with a horseshoe crab in an ocean environment or using a fossil footprint to determine the size of a dinosaur. (LS4.A)	Unit 3: Surviving in Changing Environments https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b Concept 3.1: Understanding Fossils Activity 6: What Are Fossils? https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/23c11772-fb7f-49ae-bda0-9b2611ddb3ae

Activity 7: Earth History
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/a5aecbc3-5500-41ba-9eef-6026beeb9700>

Activity 8: Clues in Fossils
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/fcd9ec77-792e-420c-a253-f27c9cd5e5df>

Activity 9: Where Did I Come From?
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0a13cccf-c80d-4c87-b919-4bae5a7c1a0d>

Activity 10: Hands-On Investigation: Making Fossils
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/044a7ffe-1bcd-496b-b8ab-c74494de9d97>

Activity 11: No Bones About It!
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/3ec79862-3e71-4670-91bc-249ce57921ba>

Activity 12: Learning from Fossils
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/7a49bd9f-f3df-4314-9e52-5b2ace75aed4>

Activity 13: Changing Environments
<https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/1c09c8dc-e55f-428b-b161-8b5f2b8fff4f>

	Activity 14: Discovering Fossils https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/2db74e53-1bb2-4f66-8c48-924fb57911ab Activity 15: Describe Fossils https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0847eccc-572d-45e5-8153-8c51ef1d5a9e
4.1.4 Engage in argument from evidence based on patterns in rock layers and fossils found in those layers to support an explanation that environments have changed over time. Emphasize the relationship between fossils and past environments. Examples could include tropical plant fossils found in Arctic areas and rock layers with marine shell fossils found above rock layers with land plant fossils. (ESS1.C)	Unit 3: Surviving in Changing Environments https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b Concept 3.1: Understanding Fossils Activity 7: Earth History https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/a5aecbc3-5500-41ba-9eef-6026beeb9700 Activity 9: Where Did I Come From? https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0a13cccf-c80d-4c87-b919-4bae5a7c1a0d Activity 12: Learning from Fossils https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/7a49bd9f-f3df-4314-9e52-5b2ace75aed4 Activity 13: Changing Environments https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/1c09c8dc-e55f-428b-b161-8b5f2b8fff4f

	Activity 14: Discovering Fossils https://app.discoveryeducation.com/learn/techbook/units/4d65e0b9-6aa3-4937-9693-d146fda0891b/concepts/a292ed05-d838-4bd7-9dd5-a5e8ff028a0e/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/2db74e53-1bb2-4f66-8c48-924fb57911ab
Strand 4.2: ENERGY TRANSFER	
Energy is present whenever there are moving objects, sound, light, or heat. The faster a given object is moving, the more energy it possesses. When objects collide, energy can be transferred from one object to another causing the objects' motions to change. Energy can also be transferred from place to place by electrical currents, heat, sound, or light. Devices can be designed to convert energy from one form to another.	
4.2.1 Construct an explanation to describe the cause and effect relationship between the speed of an object and the energy of that object. Emphasize using qualitative descriptions of the relationship between speed and energy like fast, slow, strong, or weak. An example could include a ball that is kicked hard has more energy and travels a greater distance than a ball that is kicked softly. (PS3.A)	Unit 1: Car Crashes https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836 Concept 1.3: Speed Activity 15: Hands-On Investigation: Hit the Slopes! https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/751d7796-2be1-43dc-a9f1-535e2febf811/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/5eb69c4c-3d33-4bc3-8b1b-149bc6912f00 Activity 16: Changing Speed https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/751d7796-2be1-43dc-a9f1-535e2febf811/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/5842c13c-ff82-4e00-9636-ac29626f45c5 Activity 17: RC Racing Cars https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/751d7796-2be1-43dc-a9f1-535e2febf811/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/96ff7976-37e9-4b54-b51c-6e2ee2a7f283 Activity 18: Train Race and Going for a Drive https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/751d7796-2be1-43dc-a9f1-535e2febf811/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0e56e807-2859-41a5-baed-3f2eb3f7c905

	Concept 1.4: Energy and Collisions Activity 5: Energy and Collisions https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/35de1f5e-0157-4dca-a35a-4989b7620ec8 Activity 6: The Effect of Speed on Collisions https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/951c1586-b78c-4b0a-915d-5fb28895fac3 Activity 7: Hands-On Investigation: Speed and Collisions https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/8932b933-5ec9-4c49-a76d-c8861ccc27f3 Activity 8: Micrometeorites https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/3c99e1a9-d732-44dc-a620-8f07a643a6fd
4.2.2 Ask questions and make observations about the changes in energy that occur when objects collide. Emphasize that energy is transferred when objects collide and may be converted to different forms of energy. Examples could include changes in speed when one moving ball collides with another or the transfer of energy when a toy car hits a wall. (PS3.B, PS3.C)	Unit 1: Car Crashes https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836 Concept 1.4: Energy and Collisions Activity 11: Energy Conversions during a Collision https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/ceac651e-77cc-4dd0-92b1-4b9c9c4e50c2 Activity 12: Hands-On Investigation: What Happens to Energy in Collisions? https://app.discoveryeducation.com/learn/techbook/units/b9bb588e-b591-47b7-9f5e-d67ac3874836/concepts/785dc51b-9b63-4771-ab9d-34ce34894e02/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/f35c8069-08f8-402b-bb29-db444947950d

4.2.3 Plan and carry out an investigation to gather evidence from observations that energy can be transferred from place to place by sound, light, heat, and electrical currents. Examples could include sound causing objects to vibrate and electric currents being used to produce motion or light. (PS3.A, PS3.B)

Unit 2: Energy Resources

<https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1>

Concept 2.3: Renewable Energy Resources

Activity 12: Hands-On Investigation: Make a Solar House

<https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1/concepts/2b61c9d9-e19c-413d-86a7-8a8092b49b9a/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/b8267b86-7e62-4abe-99c5-9b3b8d8a4101>

Activity 14: How Do We Use Solar Energy?

<https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1/concepts/2b61c9d9-e19c-413d-86a7-8a8092b49b9a/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/1cfd8ee2-dac8-4a8f-a108-5537afe43a53>

Unit 5: Senses and Survival

<https://app.discoveryeducation.com/learn/techbook/units/831aa5af-4220-4939-9ae4-83bd865fc82a>

Concept 5.3: Light and Sight

Activity 7: Hands-On Investigation: Light Observations

<https://app.discoveryeducation.com/learn/techbook/units/831aa5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/457b59ee-8c1f-47af-9238-9866cd627f39>

Activity 8: Light Transfers Energy

<https://app.discoveryeducation.com/learn/techbook/units/831aa5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/3c6e42c3-b681-4e2d-995c-44e6e2e3feb3>

4.2.4 Design a device that converts energy from one form to another. Define the problem, identify criteria and constraints, develop possible solutions using models, analyze data from testing solutions, and propose modifications for optimizing a solution. Emphasize identifying the initial and final forms of energy. Examples could include solar ovens that convert light energy to heat energy or a simple alarm system that converts motion energy into sound energy.

Unit 2: Energy Resources

<https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1>

Concept 2.3: Renewable Energy Resources

Activity 12: Hands-On Investigation: Make a Solar House

<https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1/concepts/2b61c9d9-e19c-413d-86a7-8a8092b49b9a/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/b8267b86-7e62-4abe-99c5-9b3b8d8a4101>

(PS3.B, PS3.D, ETS1.A, ETS1.B, ETS1.C)	Activity 13: Solar Energy https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1/concepts/2b61c9d9-e19c-413d-86a7-8a8092b49b9a/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0f5bffd7-ed85-485f-8e1e-a1c756b99cbb Activity 14: How Do We Use Solar Energy? https://app.discoveryeducation.com/learn/techbook/units/3a4a05a1-58ec-47ae-a504-325bd4c254c1/concepts/2b61c9d9-e19c-413d-86a7-8a8092b49b9a/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/1cfd8ee2-dac8-4a8f-a108-5537afe43a53
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Strand 4.3: WAVE PATTERNS

Waves are regular patterns of motion that transfer energy and have properties such as amplitude (height of the wave) and wavelength (spacing between wave peaks). Waves in water can be directly observed. Light waves cause objects to be seen when light reflected from objects enters the eye. Humans use waves and other patterns to transfer information.

4.3.1 Develop and use a model to describe the regular patterns of waves. Emphasize patterns in terms of amplitude and wavelength. Examples of models could include diagrams, analogies, and physical models such as water or rope. (PS4.A)	Unit 4: Earthquakes https://app.discoveryeducation.com/learn/techbook/units/426d6edf-b5b4-4d06-ac8d-344fb7c60d58 Concept 4.2: Earthquake Waves Activity 6: Model Earthquake Waves https://app.discoveryeducation.com/learn/techbook/units/426d6edf-b5b4-4d06-ac8d-344fb7c60d58/concepts/7026215f-2b5e-4134-b3df-9e60f970abac/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/aaaa09f9-32ab-4bba-94c5-a927129ed2f1 Activity 8: Moving Waves https://app.discoveryeducation.com/learn/techbook/units/426d6edf-b5b4-4d06-ac8d-344fb7c60d58/concepts/7026215f-2b5e-4134-b3df-9e60f970abac/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/fcbf3bcd-5807-4a67-bc49-efc9d3a57aa5 Activity 9: Amplitude and Wavelength https://app.discoveryeducation.com/learn/techbook/units/426d6edf-b5b4-4d06-ac8d-344fb7c60d58/concepts/7026215f-2b5e-4134-b3df-9e60f970abac/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/5ab17844-6f29-4588-b5c8-flc9a5c52bf3
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4.3.2 Develop and use a model to describe how visible light waves reflected from objects enter the eye causing objects to be seen. Emphasize the reflection and movement of light. The structure and function of organs and organ systems and the relationship between color and wavelength will be taught in Grades 6 through 8. (PS4.B)	Unit 5: Senses and Survival https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a Concept 5.3: Light and Sight Activity 11: Light Strikes Matter https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/e2e56649-57c4-4015-b095-18d8cd6cf28e Activity 14: Sight Model https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/500007c5-3e5e-45db-a142-dc85873f4a0f/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/a9149a79-2632-41e6-b097-9c9645c1ba88
4.3.3 Design a solution to an information transfer problem using wave patterns. Define the problem, identify criteria and constraints, develop possible solutions using models, analyze data from testing solutions, and propose modifications for optimizing a solution. Examples could include using light to transmit a message in Morse code or using lenses and mirrors to see objects that are far away. (PS4.C, ETS1.A, ETS1.B, ETS1.C)	Unit 5: Senses and Survival https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a Concept 5.4: Communication and Information Transfer Activity 6: Transferring Information https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c20523bb-6d89-4726-8c80-a1710f1e9747/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/19db205e-31ab-4e1b-944e-2c557444f85a Activity 7: Inventing a Code https://app.discoveryeducation.com/learn/techbook/units/831a5af-4220-4939-9ae4-83bd865fc82a/concepts/c20523bb-6d89-4726-8c80-a1710f1e9747/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/0f2ed6e9-53bc-4419-a1dd-55624af37049
Strand 4.4: OBSERVABLE PATTERNS IN THE SKY	
4.4.1 Construct an explanation that differences in the apparent brightness of the Sun compared to other stars is due to the relative distance (scale) of stars from Earth. Emphasize relative distance from Earth. (ESS1.A)	Unit 4: Patterns in the Night Sky https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bf1a49a9cd

	Concept 4.3: Sun and Star Brightness Activity 9: Hands-On Investigation: Brightness and Distance of Stars https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/ee3d09c3-9d78-4757-b495-8ab2e7373082/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/48e5e5bd-6019-4162-8dd6-82d65399368c
4.4.2 Analyze and interpret data of observable patterns to show that Earth rotates on its axis and revolves around the Sun. Emphasize patterns that provide evidence of Earth's rotation and orbits around the Sun. Examples of patterns could include day and night, daily changes in length and direction of shadows, and seasonal appearance of some stars in the night sky. Earth's seasons and its connection to the tilt of Earth's axis will be taught in Grades 6 through 8. (ESS1.B)	Unit 4: Patterns in the Night Sky https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd Concept 4.2: Patterns of Motion in the Sky Activity 4: Rotation https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/46e4966a-5399-4fb3-b172-feacd662522d Activity 5: Cycles in the Sky https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/6ae70d36-674f-4412-bbfd-04f39e63abee Activity 6: Sunrise Times https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/38bfcf7c-eb4c-4521-a848-91638db9669a Activity 7: Effects of Earth's Rotation https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/eda89c53-a54c-4b1e-8b29-1e886d1106fb Activity 9: Apparent Motion https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/212d26f4-79c7-4d91-b1eb-756bed7452c7

	Activity 10: Hands-On Investigation: What Can Shadows Tell Us? https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/b965c9c1-ed71-46c6-b629-7f9d0ba6a8f2 Activity 11: Constellations visible during Different Seasons https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/9a6c5b99-3fb4-4df3-8412-e688c3a155bd Activity 12: Constellations https://app.discoveryeducation.com/learn/techbook/units/1e4897c1-7d41-4e42-a01a-f1bfla49a9cd/concepts/a25c5247-5a3f-4855-a7ec-b57420ededc2/tabs/74cc2f35-c00c-4035-9e3f-7dd677b76b0f/pages/ba7581a0-15ea-4013-a7ab-2c2476efaf5a
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