

UNIT | Sun and Stars (2.5 weeks)

- 1.1 | Our Star the Sun (3 days)**
- 1.2 | Gravity (3 days)**
- 1.3 | Constellations (3 days)**
- 1.4 | Astronomy (3 days)**

UNIT | Amazing Plants (4.5 weeks)

- 1.1 | Basic Needs of Plants (6 days)**
- 1.2 | Stems (3 days)**
- 1.3 | Roots (3 days)**
- 1.4 | Leaves (4 days)**
- 1.4 | Flowering Plants (3 days)**
- 1.4 | Ferns (3 days)**

UNIT | Grouping Organisms (4 weeks)

- 1.1 | Grouping Organisms (8 days)**
- 1.2 | Criteria (3 days)**
- 1.3 | Classification (3 days)**
- 1.4 | Conifers (3 days)**
- 1.4 | Mosses, Liverworts, and Hornworts (3 days)**

UNIT | Survival (2.5 weeks)

- 1.1 | Responses to Environment (6 days)**
- 1.2 | Receiving and Using Information (3 days)**
- 1.3 | Shelter and Defense (2 day)**

UNIT | Human Health (4 days)

- 1.1 | Immune System (4 days)**

UNIT | Energy: Light and Heat (6 weeks)

- 1.1 | What is Energy? (6 days)**
- 1.2 | Light Energy (7 days)**
- 1.3 | Reflection (5 days)**
- 1.4 | Refraction (5 days)**
- 1.5 | Color (4 days)**
- 1.6 | Friction (3 days)**

UNIT | Solids, Liquids, and Gases (5 weeks)

- 1.1 | Density (3 days)**
- 1.2 | Three States of Matter (10 days)**
- 1.3 | Changing States (7 days)**
- 1.4 | Materials (3 days)**

UNIT: Sun and Stars		<u>Unit Assessment</u>
1.1 Our Star the Sun		
Recommended Timeframe: (3 Days)		
<p>Benchmarks:</p> <p>SC.3.E.5.1 - Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light. (Cognitive Complexity/Depth of Knowledge Rating: High)</p> <p>SC.3.E.5.2 - Identify the Sun as a star that emits energy; some of it in the form of light. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p> <p>SC.3.E.5.3 - Recognize that the Sun appears large and bright because it is the closest star to Earth. (Cognitive Complexity/Depth of Knowledge Rating: High)</p> <p>SC.3.E.6.1 - Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost. (Cognitive Complexity/Depth of Knowledge Rating: High)</p>		
<p>Key Resources:</p> <p>Explore: The Sun is a Star (Video) (SC.3.E.5.3, SC.3.E.5.1)</p> <p>Explore More Resources: Just an Average Star (Reading Passage) (SC.3.E.5.1)</p> <p>Explore: Our Star the Sun (exploration) (SC.3.E.5.3, SC.3.E.5.1)</p> <p>Explore More Resources: The Sun's Energy (Video) (SC.3.E.5.2, SC.3.E.6.1)</p> <p>Explore: What Happens to Objects That Are Exposed to the Sun and Why? (CIT & TEI) (SC.3.E.6.1)</p> <p>Explain: Explaining Our Star the Sun (CIT & TEI) (SC.3.E.5.1, SC.3.E.5.2, SC.3.E.5.3, SC.3.E.6.1)</p>		<p>Hands-On Activities & Hands-On Labs: Brightness and Distance of Stars</p> <p>Our Star the Sun Assessment</p> <p>Key Vocabulary: radiant energy, star, solar system, ultraviolet, filament, telescope, radiation, astronomy, transmit, energy (physical), rotate, light, heat, universe, sun</p>

UNIT: Sun and Stars		<u>Unit Assessment</u>
1.2 Gravity		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.E.5.4 - Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome. (Cognitive Complexity/Depth of Knowledge Rating: High)		
Key Resources: Engage: What is Gravity? (Video) (SC.3.E.5.4) Explore: How Does Gravity Affect Things on or near Earth? (CIT) (SC.3.E.5.4) Explain: Explaining Gravity (CIT & TEI) (SC.3.E.5.4) Elaborate: Gravity and Other Forces (STEM Project Starter) (SC.3.E.5.4)		Hands-On Activities & Hands-On Labs: Universal Gravity Gravity Assessment Key Vocabulary: attract, weight, mass, kilogram, force, matter, gravity, surface

UNIT: Sun and Stars		<u>Unit Assessment</u>
1.3 Constellations		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.E.5.1 - Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light. (Cognitive Complexity/Depth of Knowledge Rating: High) SC.3.E.5.5 - Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Star Field (Image) (SC.3.E.5.1) Engage: On a Clear Night, You Can See Lots and Lots of Stars (Video) (SC.3.E.5.1) Explore: Characteristics of Stars? (Video) (SC.3.E.5.1) Explore: How Do Telescopes Help Us Study the Stars? (CIT) (SC.3.E.5.5) Explain: Explaining Constellations (CIT & TEI) (SC.3.E.5.1, SC.3.E.5.5)		Hands-On Activities & Hands-On Labs: Constellations Summative Concept Assessment Key Vocabulary: space, radiant energy, star, axis, satellite, telescope, astronomy, galaxy, orbit, transmit, constellation, rotate, light, universe, focus, magnify

UNIT: Sun and Stars		<u>Unit Assessment</u>
1.4 Astronomy		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.E.5.5 - Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Elaborate: STEM in Action: Astrophysicists (CIT & TEI) (SC.3.E.5.5) Explore: Astronomy (Exploration) (SC.3.E.5.5) Explore: How Do Different Technologies Change Our View of the Universe? (CIT) (SC.3.E.5.5) Explore: Explaining Astronomy (CIT & TEI) (SC.3.E.5.5)		Hands-On Activities & Hands-On Labs Astronomy Assessment Key Vocabulary: star , radiant energy, solar system, orbit, galaxy, radiation, infrared radiation, refract, reflect, planet, satellite, transmit, position, optical, space, moon, sun, radio wave, telescope, astronomy, light, universe, magnify

UNIT: Amazing Plants		<u>Unit Assessment</u>
1.1 Basic Needs of Plants		
Recommended Timeframe: (6 Days)		
Benchmarks: SC.3.L.14.1 - Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.L.17.2 - Recognize that plants use energy from the Sun, air, and water to make their own food. (Cognitive Complexity/Depth of Knowledge Rating: Low)		
Key Resources: Engage: How Are You and Plants the Same and Different? (CIT) (SC.3.L.14.1) Explore: Parts of a Plant (Video) (SC.3.L.14.1) Explore: Basic Needs (exploration) (SC.3.L.14.1) Explore: How Does a Plant Use Materials from Air and Water? (CIT & TEI) (SC.3.L.17.2) Explain: Explaining Basic Needs of Plants (CIT & TEI) (SC.3.L.17.2, SC.3.L.14.1) Elaborate: The Magic of Photosynthesis (STEM PS) (SC.3.L.17.2, SC.3.L.14.1)		Hands-On Activities & Hands-On Labs: Germination and Plant Growth Basic Needs of Plants Assessment
		Key Vocabulary: light energy , nitrogen , root , stomata , respiration , stem , system , survive , energy (organisms) , solar energy , stem , plant , organism , nutrients , adaptation , photosynthesis , water , reproduce , chloroplast , oxygen , matter , freshwater , chlorophyll , carbon dioxide , hibernate , leaf

UNIT: Amazing Plants		<u>Unit Assessment</u>
1.2 Stems		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.14.1 - Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.L.14.2 - Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. (Cognitive Complexity/Depth of Knowledge Rating: High)		
Key Resources: Explore: Stems (Exploration) (SC.3.L.14.1, SC.3.L.14.2) Explore: Plants Need Stems (Reading Passage) (SC.3.L.14.1) Explain: Explaining Stems (CIT & TEI) (SC.3.L.14.2, SC.3.L.14.1)		Hands-On Activities & Hands-On Labs: Connect learning to HOA in Basic Needs of Plants Stems Assessment
		Key Vocabulary: cell , transportation system , root , transportation , leaf , stem , plant , system , nutrients , function , water

UNIT: Amazing Plants		<u>Unit Assessment</u>
1.3 Roots		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.14.1 - Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.L.14.2 - Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. (Cognitive Complexity/Depth of Knowledge Rating: High)		
Key Resources: Engage: Root Types and Adaptations (Video) (SC.3.L.14.1, SC.3.L.14.2) Explore: Why Are Roots Important to Plants? (CIT) (SC.3.L.14.1) Explain: Explaining Roots (CIT & TEI) (SC.3.L.14.2, SC.3.L.14.1)		Hands-On Activities & Hands-On Labs: Connect learning to HOA in Basic Needs of Plants Roots Assessment
		Key Vocabulary: nitrogen , minerals , root , soil , bacteria , nutrients , root hair , function , water

UNIT: Amazing Plants		<u>Unit Assessment</u>
1.4 Leaves		
Recommended Timeframe: (4 Days)		
Benchmarks: SC.3.L.14.1 - Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.L.17.2 - Recognize that plants use energy from the Sun, air, and water to make their own food. (Cognitive Complexity/Depth of Knowledge Rating: Low)		
Key Resources: Explore: Could Plants Grow on the Moon? (Reading Passage) (SC.3.L.14.1, SC.3.L.17.2) Explore: How Does the Process of Photosynthesis Work? (CIT & TEI) (SC.3.L.14.1, SC.3.L.17.2) Explore: How Does Leaf Structure Aid in the Processes of Photosynthesis and Transpiration (CIT & TEI) (SC.3.L.14.1, SC.3.L.17.2) Explain: Explaining Leaves (CIT & TEI) (SC.3.L.17.2, SC.3.L.14.1)		Hands-On Activities & Hands-On Labs: Photosynthesis: Act it Out
		Leaves Assessment
		Key Vocabulary: light energy , pigment , stomata , needles , transpiration , atmosphere , plant , nutrients , absorb , tissue , vein (plants), water , disease , photo synthesis , oxygen , sugar , chlor ophyll , light , carbon dioxide , cell wall , leaf , air , function

UNIT: Amazing Plants		Unit Assessment
1.5 Flowering Plants		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.2 - Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Seed Dispersion: Science Singalong (Video) (SC.3.L.15.2) Explore: Four Groups of Plants (Video) (SC.3.L.15.2) Explore: Why Do Some Plants Have Flowers? (CIT & TEI) (SC.3.L.15.2) Explain: Explaining Flowering Plants (CIT & TEI) (SC.3.L.15.2)		Hands-On Activities & Hands-On Labs: Reproductive Parts of a Flowering Plant Flowering Plants Assessment Key Vocabulary: pollination , digestive system , seed , petals , pistil , life cycle , anther , fruit , flowering plant , stigma , male , germination , light , ovule , fertilize , water , pollen , reproduce , flower , stamen , leaf , ovary , carbon dioxide , female

UNIT: Amazing Plants		Unit Assessment
1.6 Ferns		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.2 - Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Can You Recognize Ferns? Explaining Classification (TEI) (SC.3.L.15.2) Explore: Ferns and Mosses (Exploration) (SC.3.L.15.2) Explore: How Does the Reproduction of Ferns Compare to the Reproduction of Other Vascular Plants? (CIT & TEI) (SC.3.L.15.2) Explain: Explaining Ferns (CIT & TEI) (SC.3.L.15.2)		Hands-On Activities & Hands-On Labs: Ferns Assessment Key Vocabulary: reproduce , fern , life cycle , spore , light , water

UNIT: Grouping Organisms		<u>Unit Assessment</u>
1.1 Grouping Organisms		
Recommended Timeframe: (8 Days)		
Benchmarks: SC.3.L.15.1 - Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.L.15.2 - Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Classification (TEI) (SC.3.L.15.1) Elaborate: STEM in Action: Exploring Classification (CIT) (SC.3.L.15.1) Explore: Grouping Organisms (Exploration) (SC.3.L.15.1) Explore: Why Is It Important to Classify Organisms? (CIT & TEI) (SC.3.L.15.1, SC.3.L.15.2) Explain: Explaining Grouping Organisms (CIT & TEI) (SC.3.L.15.1, SC.3.L.15.2) Elaborate: Organisms in Your Neighborhood (STEM PS) (SC.3.L.15.1, SC.3.L.15.2)		Hands-On Activities & Hands-On Labs: Classifying Organisms Grouping Organisms Assessment
		Key Vocabulary: species , dissection , binomial nomenclature , trait , multicellular , warm-blooded , bird , fungus , kingdom , protist , classify , genetic trait , exoskeleton , feature , organism , taxonomy , characteristic , bacteria

UNIT: Grouping Organisms		<u>Unit Assessment</u>
1.2 Criteria		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.1 - Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Explore: How Does Observation Help Scientists Classify Organisms? (CIT & Video) (SC.3.L.15.1) Explore: Using Features to Classify Organisms (Reading Passage) (SC.3.L.15.1) Explain: Explaining Criteria (CIT & TEI) (SC.3.L.15.1)		Hands-On Activities & Hands-On Labs: Classifying Animals by Features and Behaviors Criteria Assessment
		Key Vocabulary: amphibian , warm-blooded , genetic trait , exoskeleton , reptile , multicellular , feature , organism , observe , invertebrate , analyze , vertebrate , characteristic , dissection , trait , inference , kingdom , classify , spore

UNIT: Grouping Organisms		<u>Unit Assessment</u>
1.3 Classification		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.1 - Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Tropical Fish from Noumean, New Caledonia (Image) (SC.3.L.15.1) Explore: Cat Classification (Exploration) (SC.3.L.15.1) Explore: How Do Different Types of Vertebrates Vary from Other Vertebrates? (CIT & TEI) (SC.3.L.15.1) Explain: Explaining Classification (CIT & TEI) (SC.3.L.15.1)		Hands-On Activities & Hands-On Labs: Classifying Animals Classification Assessment Key Vocabulary: mammal , animal , amphibian , warm-blooded , exoskeleton , reptile , molt , characteristic , fish , biological , diversity , invertebrate , analyze , marine , vertebrate , insect , species , classify

UNIT: Grouping Organisms		<u>Unit Assessment</u>
1.4 Conifers		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.2 - Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Explore More Resources: Flowers and Cones (Reading Passage) (SC.3.L.15.2) Explore: How Do Conifers' Reproductive Systems Differ from Those of Other Types of Trees? (CIT & TEI) (SC.3.L.15.2) Explain: Explaining Conifers (CIT & TEI) (SC.3.L.15.2)		Hands-On Activities & Hands-On Labs: Conifers Assessment Key Vocabulary: cone , pollen , reproduce , biological , diversity , root , life cycle , climate , germination , carbon dioxide , evergreen , needles , seed , light , fertilize , conifer , water

UNIT: Grouping Organisms		<u>Unit Assessment</u>
1.5 Mosses, Liverworts, and Hornworts		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.L.15.2 - Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Elaborate: Design Your Own Garden (STEM Project Starter) *Note: Introduce this STEM PS at the beginning of the sequence and students can come back to the project at the end to demonstrate their understanding related to the benchmark. (SC.3.L.15.2) Explore: Field Log: Mosses, Liverworts, and Hornworts (Reading Passage) (SC.3.L.15.2) Explore: How Are Mosses, Liverworts, and Hornworts Classified? (CIT) (SC.3.L.15.2) Explain: Explaining Mosses, Liverworts, and Hornworts (CIT & TEI) (SC.3.L.15.2)		Hands-On Activities & Hands-On Labs: Mosses, Liverworts, and Hornworts Assessment Key Vocabulary: species , leaf , sperm , biological diversity , root , spore , observe , life cycle , carbon dioxide , moss , stem , light , fertilize , flower , water

UNIT: Survival		<u>Unit Assessment</u>
1.1 Responses to Environment		
Recommended Timeframe: (6 Days)		
<p>Benchmarks: SC.3.L.14.2 - Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity. (Cognitive Complexity/Depth of Knowledge Rating: High) SC.3.L.17.1 - Describe how animals and plants respond to changing seasons. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>		
<p>Key Resources: Engage: Thinking about Plants in Their Environment (CIT & Video) (SC.3.L.14.2, SC.3.L.17.1) Explore: Trees through the Seasons (Video) (SC.3.L.17.1) Explore: Plants and Animals in Winter (Video) (SC.3.L.17.1) Explain: Explaining Responses to Environment (CIT & TEI) SC.3.L.14.2, SC.3.L.17.1) Elaborate: Reaching for the Sun (STEM Project Starter) (SC.3.L.14.2)</p>		<p>Hands-On Activities & Hands-On Labs: Response to Light</p> <p>Responses to Environment Assessment</p> <p>Key Vocabulary: energy (organisms), disease, microorganism, photosynthesis, environment, algae, rain forest, adaptation, soil, desert, survive</p>

UNIT: Survival		<u>Unit Assessment</u>
1.2 Receiving and Using Information		
Recommended Timeframe: (3 Days)		
<p>Benchmarks: HE.3.C.1.5 - Recognize that body parts and organs work together to form human body systems.</p>		
<p>Key Resources: Explore: Nerves (Exploration) (HE.3.C.1.5) Explore: How Do Animals Process the Sensory Information They Receive? (CIT & TEI) (HE.3.C.1.5) Explain: Explaining Receiving and Using Information (CIT & TEI) (HE.3.C.1.5)</p>		<p>Hands-On Activities & Hands-On Labs: Reaction Time</p> <p>Receiving and Using Information Assessment</p> <p>Key Vocabulary: nervous system, stimulus, brain, information, neuron, senses, nerve</p>

UNIT: Survival		<u>Unit Assessment</u>
1.3 Shelter and Defense		
Recommended Timeframe: (2 Day)		
Benchmarks: SC.3.L.17.1 - Describe how animals and plants respond to changing seasons. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Snowshoe Hare (Image) (SC.3.L.17.1) Explore: Collared Pika (Video) (SC.3.L.17.1) Explain: Explaining Shelter and Defense (CIT & TEI) (HE.3.C.1.5)		Hands-On Activities & Hands-On Labs: Shelter and Defense Assessment Key Vocabulary: protect , react , survive , habitat , characteristic , camouflage , ada ptation , shelter , marine , water , species , snake , classify , hibernate

UNIT: Human Health		<u>Unit Assessment</u>
1.1 Immune System		
Recommended Timeframe: (4 Days)		
Benchmarks: HE.3.C.1.4 - Recognize common childhood health conditions. HE.3.C.1.5 - Recognize that body parts and organs work together to form human body systems.		
Key Resources: Explore More Resources: <u>Are You Sick?</u> (Reading Passage) (HE.3.C.1.4) Explore: <u>How Does the Immune System Protect Our Bodies from Pathogens?</u> (CIT) (HE.3.C.1.4, HE.3.C.1.5) Explain: <u>Explaining Immune System</u> (CIT & TEI) (HE.3.C.1.4, HE.3.C.1.5) Elaborate: <u>How Often Do You Get Sick?</u> (STEM Project Starter) (HE.3.C.1.4)		Hands-On Activities & Hands-On Labs: <u>Bacteria Around Us</u> <u>Immune System Assessment</u> Key Vocabulary: <u>antibiotic, disease, pollen, cell, blood, tissue, organ, skin, germs, pathogen, infection, virus, immune system, bacteria, function, survive</u>

UNIT: Energy: Light and Heat	Unit Assessment
1.1 What is Energy?	
Recommended Timeframe: (6 Days)	
<p>Benchmarks:</p> <p>SC.3.P.10.1 - Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. (Cognitive Complexity/Depth of Knowledge Rating: Low)</p> <p>SC.3.P.10.2 - Recognize that energy has the ability to cause motion or create change. (Cognitive Complexity/Depth of Knowledge Rating: Low)</p> <p>SC.3.P.11.1 - Investigate, observe, and explain that things that give off light often also give off heat. (Cognitive Complexity/Depth of Knowledge Rating: High)</p>	
<p>Key Resources:</p> <p>Elaborate: Baking in the Sun (STEM Project Starter) <i>*Note: Introduce this STEM PS at the beginning of the sequence and students can come back to the project at the end to demonstrate their understanding related to the benchmark.</i> (SC.3.P.10.1, SC.3.P.11.1)</p> <p>Engage: Types of Energy (Video) (SC.3.P.10.1)</p> <p>Explore: What is Energy and Why Is It Important? (CIT & TEI & Video) (SC.3.P.10.1, SC.3.P.10.2)</p> <p>Explore: Energy Makes it Happen (Fun-damental) (SC.3.P.10.1, SC.3.P.10.2)</p> <p>Explain: Explaining What is Energy (CIT & TEI) (SC.3.P.10.1, SC.3.P.10.2, SC.3.P.11.1)</p>	<p>Hands-On Activities & Hands-On Labs: Energy in the Classroom</p> <hr/> <p>What is Energy Assessment</p> <hr/> <p>Key Vocabulary: work, conduct, generator, chemical energy, electromagnet, burn, static electricity, radiation, gravity, energy transfer, nuclear energy, sound wave, mechanical energy, electric, energy, natural gas, solar energy, transmit, magnet, energy (physical), electron, radiant energy, chemical reaction, fuel, kinetic energy, potential energy, steam, sound, conduct or, power, stored energy, current, convection (heat), conservation of energy, light, heat, thermal energy</p>

UNIT: Energy: Light and Heat

Unit Assessment

1.2 Light Energy

Recommended Timeframe: (7 Days)

Benchmarks:

SC.3.E.6.1 - Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost. (Cognitive Complexity/Depth of Knowledge Rating: High)

SC.3.P.10.1 - Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. (Cognitive Complexity/Depth of Knowledge Rating: Low)

SC.3.P.10.2 - Recognize that energy has the ability to cause motion or create change. (Cognitive Complexity/Depth of Knowledge Rating: Low)

SC.3.P.10.3 - Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)

SC.3.P.11.1 - Investigate, observe, and explain that things that give off light often also give off heat. (Cognitive Complexity/Depth of Knowledge Rating: High)

Key Resources:

Explore: [How Does Light as a Form of Energy Cause Matter to Change?](#) (CIT & Video)
(SC.3.P.6.1, SC.3.P.10.1, SC.3.P.10.2, SC.3.P.11.1)

Explore: [How Do the Wave Properties of Light Explain How It Travels?](#) (CIT & Video)
(SC.3.P.6.1, SC.3.P.10.1, SC.3.P.11.1)

Explore More Resources: [Light Energy](#) (Exploration)
(SC.3.P.10.3)

Explore: [Energy Makes it Happen](#) (Fun-damental)
(SC.3.P.10.1, SC.3.P.10.3)

Explain: [Explaining Light Energy](#) (CIT & TEI)
(SC.3.P.6.1, SC.3.P.10.1, SC.3.P.10.2, SC.3.P.10.3, SC.3.P.11.1)

Elaborate: [Sun Racer](#) (STEM Project Starter)
(SC.3.P.6.1, SC.3.P.10.1, SC.3.P.10.2)

Hands-On Activities &
Hands-On Labs:

[Light Energy Assessment](#)

Key Vocabulary:

[light energy](#), [ray](#),
[ultraviolet](#), [wavelength](#), [frequency](#), [radiation](#), [model](#),
[opaque](#), [infrared](#), [crest](#),
[energy](#), [transmit](#), [energy](#)
(physical), [radiant energy](#),
[substance](#), [wave](#), [transparent](#), [translucent](#), [light](#), [heat](#)

UNIT: Energy: Light and Heat		<u>Unit Assessment</u>
1.3 Reflection		
Recommended Timeframe: (5 Days)		
<p>Benchmarks: SC.3.P.10.3 - Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.P.10.4 - Demonstrate that light can be reflected, refracted, and absorbed. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>		
<p>Key Resources: Elaborate: STEM in Action: Reflectors in Space (CIT & Video & TEI) <i>*Complete TEIs at the end of the learning cycle.</i> (SC.3.P.10.4) Explore: How Can Light's Behavior Be Predicted When It Hits a Smooth Surface? (CIT & Video & TEI) (SC.3.P.10.3, SC.3.P.10.4) Explore: Reflection (Exploration) (SC.3.P.10.3, SC.3.P.10.4) Explain: Explaining Reflection (CIT & TEI) (SC.3.P.6.1, SC.3.P.10.1, SC.3.P.10.2, SC.3.P.10.3, SC.3.P.11.1)</p>		<p>Hands-On Activities & Hands-On Labs: Reflection</p> <hr/> <p>Reflection Assessment</p> <hr/> <p>Key Vocabulary: radiant energy, reflect, opaque, pigment, concave, surface, ray, optical, light, heat translucent, image</p>

UNIT: Energy: Light and Heat		<u>Unit Assessment</u>
1.4 Refraction		
Recommended Timeframe: (5 Days)		
<p>Benchmarks: SC.3.P.10.3 - Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.P.10.4 - Demonstrate that light can be reflected, refracted, and absorbed. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>		
<p>Key Resources: Engage: Refraction of the Terrapin (Image) (SC.3.P.10.4) Explore: Refraction: The Bending of Light Rays (Video) (SC.3.P.10.3, SC.3.P.10.4) Explore More Resources: The Nearsighted Teacher (Reading Passage) (SC.3.P.10.3, SC.3.P.10.4) Explore: Refraction (Exploration) (SC.3.P.10.3, SC.3.P.10.4) Explore: Follow the Light (TEI) (SC.3.P.10.3, SC.3.P.10.4) Explain: Explaining Refraction (CIT & TEI) (SC.3.P.10.3, SC.3.P.10.4)</p>		<p>Hands-On Activities & Hands-On Labs: Refraction</p> <hr/> <p>Refraction Assessment</p> <hr/> <p>Key Vocabulary: radiant energy, ray, transparent, wavelength, lens, spectrum, property, light, optical, translucent, image, refr act</p>

UNIT: Energy: Light and Heat		<u>Unit Assessment</u>
1.5 Color		
Recommended Timeframe: (4 Days)		
Benchmarks: SC.3.P.10.4 - Demonstrate that light can be reflected, refracted, and absorbed. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Elaborate: Color Quest (STEM Project Starter) <i>*Note: Introduce this STEM PS at the beginning of the sequence and students can come back to the project at the end to demonstrate their understanding related to the benchmark.</i> (SC.3.P.10.4) Explore: Why Do Objects Have Color? (CIT & Video) (SC.3.P.10.4) Explore: Color (Exploration) (SC.3.P.10.4) Explain: Explaining Color (CIT & TEI) (SC.3.P.10.4)		Hands-On Activities & Hands-On Labs: Coloring Color Color Assessment Key Vocabulary: light energy , radiant energy , absorb , pigment , prism , ultraviolet , wavelength , color , electromagnetic spectrum , spectrum , reflect , light , infrared

UNIT: Energy: Light and Heat		<u>Unit Assessment</u>
1.6 Friction		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.P.11.2 - Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together. (Cognitive Complexity/Depth of Knowledge Rating: High)		
Key Resources: Engage: Brothers Making Fire at Campsite (Image) (SC.3.P.11.2) Explore: No Matches? No Problem (Reading passage) (SC.3.P.11.2) Explore: Why Does Friction Produce Heat? (CIT & Video & TEI) (SC.3.P.11.2) Explain: Explaining Friction (CIT & TEI) (SC.3.P.11.2)		Hands-On Activities & Hands-On Labs: Friction Assessment Key Vocabulary: resist , contact , force , friction , pure substance , system , motion , surface

UNIT: Solid, Liquids and Gases		<u>Unit Assessment</u>
1.1 Density		
Recommended Timeframe: (3 Days)		
Benchmarks: SC.3.P.8.2 - Measure and compare the mass and volume of solids and liquids. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)		
Key Resources: Engage: Sinking and Floating: Making Clay Boats (Video) (SC.3.P.8.2) Explore: How Can You Determine an Object's Density? (CIT & Video & TEI) (SC.3.P.8.2) Explore: Sink or Float? (Exploration) (SC.3.P.8.2) Explain: Explaining Density (CIT & TEI) (SC.3.P.8.2)		Hands-On Activities & Hands-On Labs: Density Assessment Key Vocabulary: solid , density , weight , metric system , pressure , substance , air , force , volume (matter) , mass , measure , vacuum , gravity , matter , metric system , liquid , water

<p>UNIT: Solid, Liquids and Gases</p>	<p><u>Unit Assessment</u></p>
<p>1.2 Three States of Matter</p>	
<p>Recommended Timeframe: (10 Days)</p>	
<p>Benchmarks: SC.3.P.8.1 - Measure and compare temperatures of various samples of solids and liquids. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.P.8.2 - Measure and compare the mass and volume of solids and liquids. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.P.8.3 - Compare materials and objects according to properties such as size, shape, color, texture, and hardness. (Cognitive Complexity/Depth of Knowledge Rating: Moderate) SC.3.P.9.1 - Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>	
<p>Key Resources: Elaborate: STEM in Action: Careers and States of Matter (CIT & Video & TEI) <i>*Note: Introduce this STEM PS at the beginning of the sequence and students can come back to the project at the end to demonstrate their understanding related to the benchmark.</i> (SC.3.P.8.1) Engage: Three States of Water (Image) (SC.3.P.9.1) Explore More Resources: Water on Earth (Reading Passage) (SC.3.P.9.1) Explore: How Do Scientists Describe the Properties of Matter? (CIT & Video) (SC.3.P.8.3) Explore: How Can You Use Mass and Volume to Compare Solids, Liquids and Gases? (CIT & Video & TEI) (SC.3.P.8.2) Explore: How Does Temperature Affect the State of Matter? (CIT & Video & TEI) (SC.3.P.8.1) Explain: Explaining Three States of Matter (CIT & TEI) (SC.3.P.8.1, SC.3.P.8.2, SC.3.P.8.3, SC.3.P.9.1)</p>	<p>Hands-On Activities & Hands-On Labs: Changing States of Matter Properties of Matter Three States of Matter Assessment</p> <p>Key Vocabulary: solid, steam, vapor, fluid, change of state, air, melting point, matter, evaporation, substance, melt, classify, freeze, temperature (general), state of matter, boil, liquid, water</p>

UNIT: Solid, Liquids and Gases		<u>Unit Assessment</u>
1.3 Changing States		
Recommended Timeframe: (7 Days)		
<p>Benchmarks:</p> <p>SC.3.P.8.1 - Measure and compare temperatures of various samples of solids and liquids. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p> <p>SC.3.P.9.1 - Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>		
<p>Key Resources:</p> <p>Engage: Heat and Matter (Video) (SC.3.P.8.1)</p> <p>Explore: How Is Melting Different from Freezing? (CIT & Video) (SC.3.P.9.1)</p> <p>Explore: How Are Evaporating and Boiling Different from Condensing? (CIT & Video) (SC.3.P.9.1)</p> <p>Explore: Changes of State (Exploration) (SC.3.P.8.1, SC.3.P.9.1)</p> <p>Explain: Explaining Changes of State (CIT & TEI) (SC.3.P.8.1, SC.3.P.9.1)</p>		<p>Hands-On Activities & Hands-On Labs: Will It Freeze?</p> <hr/> <p>Changing States Assessment</p> <hr/> <p>Key Vocabulary: solid, steam, freeze, substance, change of state, air, melting point, conservation of mass, matter, condense, evaporation, gravity, melt, energy (physical), state of matter, boil, liquid, water</p>

UNIT: Solid, Liquids and Gases		<u>Unit Assessment</u>
1.4 Materials		
Recommended Timeframe: (3 Days)		
<p>Benchmarks:</p> <p>SC.3.P.8.3 - Compare materials and objects according to properties such as size, shape, color, texture, and hardness. (Cognitive Complexity/Depth of Knowledge Rating: Moderate)</p>		
<p>Key Resources:</p> <p>Engage: Using Materials: Science Sing Along (Video) (SC.3.P.8.3)</p> <p>Explore: What Are Some Different Materials, and What Are Their Properties? (CIT & Video) (SC.3.P.8.3)</p> <p>Explain: Explaining Materials (CIT & TEI) (SC.3.P.8.3)</p>		<p>Hands-On Activities & Hands-On Labs: Comparing Matter</p> <hr/> <p>Materials Assessment</p> <hr/> <p>Key Vocabulary: senses, materials, engineer, measure, matter, magnet, metal, color, natural</p>