

## Introduction

	<p>This Pennsylvania Learns iTunes U course is a collection of resources to support teaching and learning in the Grade 3 classroom. The content of this course is organized around the Grade 3 Pennsylvania Academic Standards for Science and Technology and Engineering. We believe that Pennsylvania teachers know what is needed to support their instructional design and delivery as well as what engages students in their own learning. For those reasons, the materials and resources provided in this course were curated by teachers. This course is not a curriculum. It is a collection of assets aligned to Pennsylvania Academic Standards to support teaching and learning. The topics found in this course do not need to be taught in order.</p>

Module Title	Message	Assignment / Call to Action (200 Character Max)	Resource / URL	Info about the URL (published on the "i" button of a resource/ url)	Copyright Notes
<b>3.2. Physical Sciences: Chemistry and Physics</b>	In this module, you will investigate chemical and physical science and the roles they play in our everyday lives. You will begin by looking into chemical science and the properties and structure of matter. You will explore the attributes of physical science through investigating and developing understanding of force and how motion is affected and described, doing this by applying Newton's Laws of Motion. You will also investigate energy, how it is transferred and how it is applied.				
Chemistry: Properties and Structure of Matter	In this lesson, you will observe properties of matter including size, shape, weight, color, texture, and hardness. You will classify objects as being solid, liquid, or gas. 3.2.A.	LEARN about energy.	<a href="https://www.youtube.com/watch?v=vl4g7T5gw1M">https://www.youtube.com/watch?v=vl4g7T5gw1M</a>		
		PRACTICE your understanding of matter.	<a href="http://www.collaborativelearning.org/statesofmatter.pdf#page=2">http://www.collaborativelearning.org/statesofmatter.pdf#page=2</a>	Many of the activities need to be done physically. You will need to print them out.	
Chemistry: Matter, Energy and Reactions	In this lesson, you will experiment to determine how heating and cooling may cause changes in properties of some materials. You will also demonstrate changes in properties of matter through basic reactions such as baking or burning. 3.2.A.	LEARN about changing states of matter.	<a href="http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state.shtml</a>		
		LEARN about the changing states of matter.	<a href="http://www.chem4kids.com/files/matter_changes.html">http://www.chem4kids.com/files/matter_changes.html</a>		
		LEARN how some changes in states of matter are reversible while others are not.	<a href="https://www.youtube.com/watch?v=XRHBrhd9_U">https://www.youtube.com/watch?v=XRHBrhd9_U</a>		

Physics: Force & Motion of Particles and Rigid Bodies	In this lesson, you will describe movement in a variety of ways including direction and speed. 3.2.B	LEARN about gravity and inertia.	<a href="http://www.pbslearningmedia.org/resource/arct14.sci.dhill/what-affects-how-fast-you-coast-down-a-hill/">http://www.pbslearningmedia.org/resource/arct14.sci.dhill/what-affects-how-fast-you-coast-down-a-hill/</a>		
		LEARN about speed and velocity.	<a href="https://www.youtube.com/watch?v=DRb5PSxJerM">https://www.youtube.com/watch?v=DRb5PSxJerM</a>		
		EXPLORE the relationship of gravity and speed.	<a href="http://www.physicsclassroom.com/Physics-Interactives/1-D-Kinematics/Graphs-and-Ramps/Graphs-and-Ramps-Interactive">http://www.physicsclassroom.com/Physics-Interactives/1-D-Kinematics/Graphs-and-Ramps/Graphs-and-Ramps-Interactive</a>	The focus for this site is to experiment with the changing variables. When doing so, think about the interactions.	
		EXPLORE how force can affect motion.	<a href="http://www.physicsclassroom.com/Physics-Interactives/Momentum-and-Collisions/Collision-Carts/Collision-Carts-Interactive">http://www.physicsclassroom.com/Physics-Interactives/Momentum-and-Collisions/Collision-Carts/Collision-Carts-Interactive</a>	The focus for this site is to experiment with the changing variables. When doing so, think about the interactions.	
Physics: Energy Storage and Transformations: Conservation Laws	In this lesson, you will explore ways in which energy can cause motion or create change, as well as how energy can be found in light, sound, and heat. 3.2.B	LEARN about energy, where it's found and how it's used.	<a href="https://www.youtube.com/watch?v=wX2wrXwe8ZM">https://www.youtube.com/watch?v=wX2wrXwe8ZM</a>		
Physics: Electrical and Magnetic Energy	In this lesson, you will identify and classify objects as being conductors or insulators of electricity. 3.2.B	LEARN about magnets and their properties.	<a href="http://www.myschoolhouse.com/courses/O/1/33.asp">http://www.myschoolhouse.com/courses/O/1/33.asp</a>		
		EXPLORE electrical conductors.	<a href="http://www.bbc.co.uk/schools/scienceclips/ages/8_9/circuits_conductors.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/8_9/circuits_conductors.shtml</a>		
		LEARN about conductors and insulators.	<a href="http://www.slideshare.net/guestae982/fun-with-insulators-and-conductors">http://www.slideshare.net/guestae982/fun-with-insulators-and-conductors</a>		

		INVESTIGATE conductors and insulators.	<a href="http://www.education.com/science-fair/article/conductor-or-insulator/">http:// www.education.com/ science-fair/article/ conductor-or-insulator/</a>		
Physics: Nature of Waves (Sound and Light Energy)	In this lesson, you will recognize that light travels in a straight line until it passes through a transparent object such as water or prisms. 3.2.B	LEARN about light waves.	<a href="http://www.ducksters.com/science/light.php">http:// www.ducksters.com/ science/light.php</a>		
		LEARN about light and how light travels.	<a href="http://www.explainthatstuff.com/light.html">http:// www.explainthatstuff.co m/light.html</a>		
		LEARN about light and light waves.	<a href="https://www.youtube.com/watch?v=iletCKDCt_0">https:// www.youtube.com/ watch?v=iletCKDCt_0</a>		
		LEARN about how light travels.	<a href="http://www.pbslearningmedia.org/resource/lsp07.sci.phys.energy.lighttravel/how-light-travels/">http:// www.pbslearningmedia.o rg/resource/ lsp07.sci.phys.energy.li ghttravel/how-light- travels/</a>		
		EXPLORE light waves.	<a href="http://www.ducksters.com/science/experiment_light_travel.php">http:// www.ducksters.com/ science/ experiment_light_travel.p hp</a>		
		LEARN about the energy of light.	<a href="http://www.physics4kids.com/files/light_intro.html">http:// www.physics4kids.com/ files/light_intro.html</a>		

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<b>Organisms and Cells</b>	In this module, you will gain an understanding of the importance of living and nonliving things within our planet. You will see the relationships between organisms, as well as the differences among different species such as plants and animals. You will gain a general understanding of the adaptations, traits and genetics of the different life found on earth.				
<b>Organisms and Cells: Common Characteristics of Life</b>	<b>In this lesson, you will use your understanding of living and nonliving things to describe the characteristics of living things and be able to identify and classify them. 3.1.A.</b>				
		LEARN about animal classification and categories.	<a href="http://www.sheppardsoftware.com/content/animals/kidscorner/classification/kc_class_again.htm">http://www.sheppardsoftware.com/content/animals/kidscorner/classification/kc_class_again.htm</a>	warm blooded/cold blooded, animal babies, and what do they look like	ARTICLE
		LEARN more about different characteristics of animals.	<a href="http://www.enchantedlearning.com/coloring/">http://www.enchantedlearning.com/coloring/</a>	Browse the site and choose two different animals to make comparisons about them.	
		EXPLORE animal classification.	<a href="https://itunes.apple.com/us/app/classify-it!/id911484593?mt=8">https://itunes.apple.com/us/app/classify-it!/id911484593?mt=8</a>		
<b>Organisms and Cells: Energy Flow</b>	<b>In this lesson, you will research living things, describing their basic needs and their dependence on light, food, air, water, and shelter for survival. 3.1.A.</b>				
		LEARN about the basic needs of a living organism.	<a href="http://eschooltoday.com/science/needs-of-living-organisms/five-things-living-things-need-to-survive.html">http://eschooltoday.com/science/needs-of-living-organisms/five-things-living-things-need-to-survive.html</a>	ARTICLE	
		RESEARCH an animal to find out more about how it survives in its environment.	<a href="http://www.enchantedlearning.com/coloring/">http://www.enchantedlearning.com/coloring/</a>		

		CREATE a slideshow to share your animal research.			
<b>Organisms and Cells: Life Cycles</b>	<b>In this lesson, you will review parts of plants and characteristics of animals. You will then investigate the life cycles of plants and animals. You will be able to illustrate these life cycles, including birth, growth, development, reproduction, and death. 3.1.A.</b>				
		LEARN about the life cycle of a lady bug.	<a href="https://www.youtube.com/watch?v=SvHWxDjfB8">https://www.youtube.com/watch?v=SvHWxDjfB8</a>	Start time 17s- 1:02 also basecamp life cycle of lady bug doc	VIDEO
		DEMONSTRATE your understanding of the butterfly cycle.	<a href="http://www.enchantedlearning.com/label/">http://www.enchantedlearning.com/label/</a>		
		WATCH Seed to Flower to learn about the life cycle of flower.	<a href="http://www.pbslearningmedia.org/resource/tdc02.sci.life.colt.plantsgrow/from-seed-to-flower/">http://www.pbslearningmedia.org/resource/tdc02.sci.life.colt.plantsgrow/from-seed-to-flower/</a>		
		LEARN about germination.	<a href="http://www.pbslearningmedia.org/resource/tdc02.sci.life.stru.germinator/germinator/">http://www.pbslearningmedia.org/resource/tdc02.sci.life.stru.germinator/germinator/</a>		
		INVESTIGATE the life cycle of plants.	<a href="http://www.pbslearningmedia.org/resource/tdc02.sci.life.colt.lp_plantcycle/plant-life-cycles/">http://www.pbslearningmedia.org/resource/tdc02.sci.life.colt.lp_plantcycle/plant-life-cycles/</a>		
		INTERACT with animal life cycles.	<a href="https://itunes.apple.com/us/app/animals-life-cycle-insects/id658736303?mt=8">https://itunes.apple.com/us/app/animals-life-cycle-insects/id658736303?mt=8</a>		APP- animal Life cycle- insects and arachnids free
<b>Organisms and Cells: Form and Function</b>	<b>In this lesson, you will review the plant structure and life cycle and use this knowledge to identify the structures within the plant responsible for production of food, support, water transport, reproduction, growth, and protection. 3.1.A.</b>	LEARN about the parts of plants.	<a href="https://www.youtube.com/watch?v=X6TLFZUC9gI">https://www.youtube.com/watch?v=X6TLFZUC9gI</a>		VIDEO
		LEARN about plant vocabulary.	<a href="https://www.flocabulary.com/parts-of-a-plant/">https://www.flocabulary.com/parts-of-a-plant/</a>		VIDEO

		EXPLORE the functions of the four main parts of a plant.	<a href="http://www.mbgnet.net/bioplants/parts.html">http://www.mbgnet.net/bioplants/parts.html</a>		
<b>Genetics: Heredity</b>	<b>In this lesson, you will investigate genetic traits within the class and within families. You will understand that plants and animals closely resemble their parents and will identify characteristics that appear in both parents and offspring. 3.1.B</b>				
		LEARN about inherited traits.	<a href="https://youtu.be/is8Png98-jU">https://youtu.be/is8Png98-jU</a>		VIDEO POOR QUALITY
		LEARN about learned behaviors.	<a href="https://youtu.be/yP27i05-vTg">https://youtu.be/yP27i05-vTg</a>		VIDEO POOR QUALITY
		INVENTORY your traits.	<a href="https://www.teachervision.com/tv/printables/0876281390_127.pdf">https://www.teachervision.com/tv/printables/0876281390_127.pdf</a>		
		DEMONSTRATE your understanding of inherited traits.	<a href="http://teach.genetics.utah.edu/content/heredity/files/Traits-Trivia.pdf">http://teach.genetics.utah.edu/content/heredity/files/Traits-Trivia.pdf</a>	Only use page 2 of the PDF.	
		LEARN about adaptive traits as you READ this article about caribou.	<a href="http://www.exploringnature.org/graphics/adaptation_jpgs/adaptation_comic.pdf">http://www.exploringnature.org/graphics/adaptation_jpgs/adaptation_comic.pdf</a>		
		LEARN about the discovery and meaning of genetics.	<a href="http://www.exploringnature.org/db/detail.php?dbID=22&amp;detID=54">http://www.exploringnature.org/db/detail.php?dbID=22&amp;detID=54</a>		
		EXPLORE traits within your own family.	<a href="https://docs.google.com/document/d/1ZZjZFtsiF4JX29yaU434Sdrf9OxCVTYdaH0zu8biQJM/edit?usp=sharing">https://docs.google.com/document/d/1ZZjZFtsiF4JX29yaU434Sdrf9OxCVTYdaH0zu8biQJM/edit?usp=sharing</a>	GOOGLE DOC	
<b>Evolution: Natural Selection and Adaptation</b>	<b>In this lesson, you will learn: how plants survive, that many plants can survive in harsh environments, and through adaptations, animals have characteristics necessary for survival. 3.1.C</b>				

		LEARN about plant adaptations and how they survive in an environment.	<a href="https://itunes.apple.com/us/book/adaptations/id642658736?mt=11">https://itunes.apple.com/us/book/adaptations/id642658736?mt=11</a>		
		LEARN how animals survive.	<a href="https://www.youtube.com/watch?t=577&amp;v=B2JdRPKYyTc">https://www.youtube.com/watch?t=577&amp;v=B2JdRPKYyTc</a>		VIDEO
		DEMONSTRATE your understating of natural selection.	<a href="http://www.classtools.net/connect/201503_HQcGJc">http://www.classtools.net/connect/201503_HQcGJc</a>	HTML 5 game,Mac, iPad, or PC ready	INTERACTIVE
<b>Evolution: Unifying Themes</b>	<b>In this lesson, you will recognize that fossils provide us with information about living things that inhabited the earth long ago. 3.1.C</b>	LEARN about fossils.	<a href="https://www.youtube.com/watch?v=rQmto9SNUq4#t=101">https://www.youtube.com/watch?v=rQmto9SNUq4#t=101</a>	start at .26	VIDEO
		EXPLORE fossils.	<a href="https://itunes.apple.com/us/app/scholastic-first-discovery/id588399715?mt=8">https://itunes.apple.com/us/app/scholastic-first-discovery/id588399715?mt=8</a>		APP scholastic first discovery dinosaurs \$1.99



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Earth and Space Sciences	In this module, you will begin working on the topic of Earth and Space Science. You will begin by looking into the features of the earth and how those features are changed over time by erosion, weathering and deposition, as well as looking into what makes up these earth materials. You will look into the effects of water on earth, through the water cycle and weather, and how this water is vital to the earth's sustainability. You will closely look at the comparison of weather and climate and their role in shaping the earth. We will investigate how the earth interacts in the solar system by looking at how the earth orbits the sun and the sun's effect on the earth and how the moon orbits the earth.				
3.3.A. Earth Structure, Processes and Cycles					
Earth Structure, Processes and Cycles: Earth Features and the Processes that Change It	In this lesson, you will explain ways in which soil is formed and share examples from your environment. 3.3.A	LEARN about soil, its composition, and how it is made.	<a href="http://www.mrcollinson.ca/3%20science/soil/3_science_soil_complete.htm">http://www.mrcollinson.ca/3%20science/soil/3_science_soil_complete.htm</a>		
		ANALYZE soil composition as you make OBSERVATIONS and RECORD them.	<a href="http://www.mrcollinson.ca/3%20science/soil/3_science_soil_whats_in_soil.pdf">http://www.mrcollinson.ca/3%20science/soil/3_science_soil_whats_in_soil.pdf</a>	You can "Open In" this PDF into your favorite annotive app to complete digitally.	
		LEARN about soil composition.	<a href="http://www.mrcollinson.ca/3%20science/soil/3_science_soil_whats_soil_made_from.pdf">http://www.mrcollinson.ca/3%20science/soil/3_science_soil_whats_soil_made_from.pdf</a>	You can "Open In" this PDF into your favorite annotive app to complete digitally.	
		EXPLORE soil and its effect on the surrounding environment.	<a href="http://school.discoveryeducation.com/schooladventures/soil/down_dirty.html">http://school.discoveryeducation.com/schooladventures/soil/down_dirty.html</a>		
Earth Structure, Processes and Cycles: Earth's Resources/ Materials	In this lesson, you will identify physical properties of minerals and will demonstrate tests for these properties, such as Moh's Scale of mineral hardness. 3.3.A				
		LEARN and EXPERIENCE earth's rocks and minerals.	<a href="http://www.ece.gov.nt.ca/files/Early-Childhood/career-development/Gr%204%20Rocks_Minerals.pdf">http://www.ece.gov.nt.ca/files/Early-Childhood/career-development/Gr%204%20Rocks_Minerals.pdf</a>	Try to complete the activities 2.13 and 2.14	

		EXPLORE the properties of minerals.	<a href="http://www.kidsloverocks.com/html/physical_properties_of_mineral.html">http://www.kidsloverocks.com/html/physical_properties_of_mineral.html</a>	
		EXPLORE the rock cycle and the types of rocks.	<a href="https://itunes.apple.com/us/app/the-rock-cycle/id471106554?mt=8">https://itunes.apple.com/us/app/the-rock-cycle/id471106554?mt=8</a>	
		LOCATE where earth's minerals are found.	<a href="https://itunes.apple.com/us/app/diggers-map-natural-resources/id556478719?mt=8">https://itunes.apple.com/us/app/diggers-map-natural-resources/id556478719?mt=8</a>	Discover what minerals are around your area by locating on the map.
		CONSTRUCT your own virtual world using different earth materials.	<a href="https://itunes.apple.com/us/app/sandbox-build-create-your/id520777858?mt=8">https://itunes.apple.com/us/app/sandbox-build-create-your/id520777858?mt=8</a>	
Earth Structure, Processes and Cycles: Water	In this lesson, you will make connections between weather and the various types of precipitation in different climates and time periods. You will learn to track and compare precipitation in their climate.	LEARN how hail forms.	<a href="https://www.youtube.com/watch?v=2-o4tr2Db2s">https://www.youtube.com/watch?v=2-o4tr2Db2s</a>	Environmental Science & Weather : How Does Hail Form?
		LEARN about precipitation.	<a href="http://education.nationalgeographic.com/encyclopedia/precipitation/">http://education.nationalgeographic.com/encyclopedia/precipitation/</a>	
		LEARN more about precipitation. ASSESS your understanding after reading the article.	<a href="http://schools.cms.k12.nc.us/hiddenvalleyES/Documents/5th%20Grade%20EOG%20Study%20Guides/Precipitation.pdf">http://schools.cms.k12.nc.us/hiddenvalleyES/Documents/5th%20Grade%20EOG%20Study%20Guides/Precipitation.pdf</a>	
		INVESTIGATE the water cycle and what changes can occur.	<a href="http://water.usgs.gov/edu/watercycle-kids-beg.html">http://water.usgs.gov/edu/watercycle-kids-beg.html</a>	
Earth Structure, Processes and Cycles: Weather and Climate	In this lesson, you will learn to track weather, and you will explain how air temperature, moisture, wind speed/direction, and precipitation make up the weather in a given place.	DISCOVER the effects of weather.	<a href="http://teacher.scholastic.com/lessonrepro/k_2theme/weather.htm">http://teacher.scholastic.com/lessonrepro/k_2theme/weather.htm</a>	
		LEARN about weather and how it is measured.	<a href="https://itunes.apple.com/us/artist/brian-dawson/id422836584?mt=11#">https://itunes.apple.com/us/artist/brian-dawson/id422836584?mt=11#</a>	

		LEARN about temperature and wind chill.	<a href="http://www.weatherwizkids.com/weather-temperature.htm">http://www.weatherwizkids.com/weather-temperature.htm</a>		
		CREATE a home weather station and COLLECT weather data.	<a href="http://www.uen.org/weather/station.shtml">http://www.uen.org/weather/station.shtml</a>		
Earth and Space Sciences: Composition and Structure	In this lesson, you will chart and identify the moons phases and will be able to describe patterns observed over the course of a month. You will also describe and role-play the cycle of a 24 hour day, and name objects in the day and night sky as you connect to time patterns. 3.3	LEARN about the phases of the moon.	<a href="https://www.flocabulary.com/moon-phases/">https://www.flocabulary.com/moon-phases/</a>		
		LEARN about the connection of the moon, the sun, and stars.	<a href="https://www.youtube.com/watch?v=FhokvJZFURg">https://www.youtube.com/watch?v=FhokvJZFURg</a>		
		INVESTIGATE shadows and the sun's placement in the sky.	<a href="http://www.readwritethink.org/files/resources/lesson_images/lesson1016/shadow.pdf">http://www.readwritethink.org/files/resources/lesson_images/lesson1016/shadow.pdf</a>		
		EXPLORE the earth's place in space and its interaction with the solar system.	<a href="https://itunes.apple.com/us/app/a-solar-system-journey/id444804070?mt=8">https://itunes.apple.com/us/app/a-solar-system-journey/id444804070?mt=8</a>	Focus your investigation on just the earth for now.	