

**NCS Science Curriculum - Adopted & BOE Approved July 2017**

**Grade 5**

<b>Big Idea</b>	<b>Enduring Understanding</b>	<b>NJCCCS</b>	<b>Activities</b>	<b>Skills</b>	<b>Resources/Chapter/Lesson/ Technology component</b>	<b>Assessment</b>
<b>Unit 1 Properties of Matter</b>	Make observations and measurements to identify materials based on their properties	5-PS1-3	Use the formula to find the volume of various objects	physical properties, weight, volume	Chapter-Matter and Its Properties; various objects; rulers, graph paper	Classroom observations; mini-lab report

# NCS Science Curriculum - Adopted & BOE Approved July 2017

## Grade 5

	<p>Develop a model to describe that matter is made of particles too small to be seen</p>	<p>5.- PS1-1 PS1-4</p>	<p>Color code the periodic table; dissolve substances using baking soda and vinegar; expanding bubbles</p>	<p>atoms, elements, compounds, molecules, chemical changes</p>	<p>Baking soda, vinegar, bubbles, water, periodic table worksheet, BrainPop</p>	<p>Color coding, illustrations, quiz</p>	
--	--	----------------------------	--	--	---	--	--

# NCS Science Curriculum - Adopted & BOE Approved July 2017

## Grade 5

	Describe the parts and structures of the skeletal, muscular and nervous systems.	5.5 A, 5.3 B	Record measurements of students' muscles. Measure reaction time. Students will use various household materials to build a protection device for the brain.	Bone marrow, joints, tendons, ligaments,	Chap 1, lesson 3 Worksheets made from teacher workbook	Chapter 1 Test	6 weeks
--	--	--------------	--	--	---	-------------------	---------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

<p><b>Unit 2 Systems and Interactions in Nature</b></p>	<p>Chap. 1 Cycles In Nature Identify the significance of the carbon dioxide-oxygen and nitrogen cycles. Conclude that human activities can upset the balance.</p>	<p>5.8B,C 5.10 A</p>	<p>Write open-ended question to describe waterfalls.</p>	<p>Nitrogen cycle, carbon dioxide-oxygen cycle</p>	<p>Textbook, process skills worksheets form teacher edition.</p>	<p>Vocabulary quiz</p>	
---	---	--------------------------	--	--	--	----------------------------	--

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Describe the importance and processes of the water cycle. Recognize that water is a limited resource.</p>	<p>5.10 A, B; 5.6 A</p>	<p>Diagram and label water cycle. Read and discuss chapter pages. Use various materials in lab to show water evaporation.</p>	<p>Water cycle, evaporation, condensation, precipitation, respiration</p>	<p>Science Lab, textbook, worksheets</p>	<p>Chapter 1 Test</p>	
--	--	-----------------------------	---	---	--	---------------------------	--

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Chap. 2 Living Things Interact Describe interactions, analyze characteristics, and identify factors that limit organisms.</p>	<p>5.3 B,C 5.8 A,B,C,D 5.10 A, B</p>	<p>Read and discuss chapter pages, make generalizations, compare bar/line graphs</p>	<p>Individual, population, community, ecosystem, habitat, niche</p>	<p>Textbook. <i>Current Science</i> Magazine</p>	<p>Written essay</p>
--	--	--	--	---	--	----------------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Identify the roles of producers, consumers, decomposers. Describe the flow of energy</p>	<p>5.3 D, 5.10 A; 5.4 C</p>	<p>Complete graphic organizer. Read and discuss chapter pages. Research organisms</p>	<p>Producer, consumer, food chain, decomposer, food web, energy pyramid</p>	<p>Textbook, worksheets, computer lab. Videos</p>	<p>Food web diagram</p>	
--	---	-------------------------------------	---	---	---	-------------------------	--

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Identify organism's adaptations. Describe mutually beneficial interactions. Compare instincts and learned behaviors.</p>	<p>5.1 A,5.4 C, 5.10 A,B</p>	<p>Students use different colored dots to show body color relates for survival. Write newspaper report about migration.</p>	<p>Competition, symbiosis, instinct, learned behavior</p>	<p>Science Lab. Process skills worksheets</p>	<p>Essay</p>
--	---	--------------------------------------	---	---	---	--------------



NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Identify and describe trends and natural and human causes of extinction. Discuss endangered species</p>	<p>5.10 A, B; 5.4 C</p>	<p>Read and discuss chapter pages. Create and describe “new” bird project. Research New Jersey endangered species.</p>	<p>Extinct, endangered, threatened, exotic</p>	<p>Worksheets, textbook, coloring materials. Computer Lab</p>	<p>Project Chapter2 Test Write endangered species report and poster</p>	<p>6 weeks</p>
--	--	-----------------------------	--	--	---	---	----------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Chap. 3 Biomes Recognize climate relates to regions. Identify land biomes of North America. Compare adaptive characteristics</p>	<p>5.1 A,B,C 5.3 C</p>	<p>Open-ended questions about biogeography. Design and complete booklet</p>	<p>Biome, climate zone</p>	<p>Textbook, coloring materials</p>	<p>Essay quiz</p>
--	---	----------------------------	---	----------------------------	-------------------------------------	-------------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

**Grade 5**

	<p>Observe water organisms. Identify three types of water ecosystem. Describe adaptations for saltwater environments. Evaluate research and technology in scientific thought, society, and the environment.</p>	<p>5.1 C, 5.2 A,B 5.5 A, 5.8 B 5.10 A; 5.4C</p>	<p>Observe organisms under microscope. Read and answer comprehension questions. Complete facts into biome booklet.</p>	<p>Intertidal zone, near-shore zone, open-ocean zone, estuary</p>	<p>Textbook, worksheets, Science Lab</p>	<p>Chapter 3 test 6-7 weeks</p>
--	---	---	--	---	--	-------------------------------------

# NCS Science Curriculum - Adopted & BOE Approved July 2017

## Grade 5

<p><b>Unit 3</b> <b>The Solar System and Beyond</b></p>	<p>Chap. 1 Recognize the time-and-space relationships of the sun-Earth-moon system. Describe lunar/solar eclipses. Identify instruments scientists use to study the solar system.</p>	<p>5.2 A,B; 5.3 B,C; 5.9 A,B,C; 5.4C</p>	<p>Use various size balls to demonstrate Earth and Moon orbits. Design Sun, Moon, Earth model using construction paper. Create the moon's surface.</p>	<p>Revolve, orbit, rotate, axis, eclipse, telescope, satellite, space probe</p>	<p>Textbook, worksheets, various household materials, measuring instruments, computers, numonics board</p>	<p>Lab observation, chapter test</p>
---	---	--	--	---	--	--------------------------------------

# NCS Science Curriculum - Adopted & BOE Approved July 2017

## Grade 5

	<p>Chap. 2  <b>Describe</b> the structure and cycles of the sun and evaluate information to construct explanations. Identify, classify physical properties of stars. Describe the four basic types of galaxies. Compare galactic clusters to nebulae.</p>	<p>5.9            A,B,C,D;            5.3 C; 5.2            A,B; 5.4C</p>	<p>Read and discuss chapter pages. Use heating instruments to explain convection. Design various models using school materials.</p>	<p>Photosphere, corona, sunspot, solar flare, solar wind, magnitude, main sequence, universe, galaxy, light-year</p>	<p>Textbook, worksheets, flashlight, computers</p>	<p>Project, lab observations, chapter test</p>	<p>8 weeks</p>
--	---	---	---	--	--	--	----------------

NCS Science Curriculum- Adopted & Approved July 2017

Grade 5

Big Idea	Enduring Understanding	NGSS	Activities	Skills	Resources/Chapter/Lesson/Technology component	Assessment
<b>Unit 4 Water on Earth</b>	Describe and graph data to provide evidence about the distribution of water on Earth	5-ESS2-2	BrainPop, analyze vocabulary, complete lab "How can you make layers of water float on each other	analyze, infer, predicting, sequencing, measuring	SMARTBOARD, textbook, lab materials, notebook	Complete BrainPop quiz, complete/explain lab results in small groups

NCS Science Curriculum- Adopted & Approved July 2017

Grade 5

	<p>Describe ways in which the geosphere, hydrosphere, and atmosphere interact</p>	<p>5-ESS3-1</p>	<p>Read various articles, complete critical thinking questions and make diagrams. Read and complete packet about hurricanes</p>	<p>outlining, summarizing, design illustration</p>	<p>Various articles, worksheets, United Streaming videos</p>	<p>Chapter Test</p>	
--	---	-----------------	---	--	--	---------------------	--

NCS Science Curriculum- Adopted & Approved July 2017

Grade 5

	<p>Describe the parts and structures of the skeletal, muscular and nervous systems.</p>	<p>5.5 A, 5.3 B</p>	<p>Record measurements of students' muscles. Measure reaction time. Students will use various household materials to build a protection device for the brain.</p>	<p>Bone marrow, joints, tendons, ligaments,</p>	<p>Chap 1, lesson 3 Worksheets made from teacher workbook</p>	<p>Chapter 1 Test</p>	<p>6 weeks</p>
--	---	---------------------	---	---	---	-----------------------	----------------



NCS Science Curriculum- Adopted & Approved July 2017

Grade 5

<p><b>Unit 4</b>  <b>Forces: The interaction of forces causes a change in the motion of objects.</b></p>	<p>Chap. 1  Describe what forces are their activities.  Explain how friction, magnetism, gravity affect daily life.  Define balanced, unbalanced forces, and acceleration.  Define work, power and how they are measured.  Describe what machines do.</p>	<p>5.1  A,B,C;  5.2 B; 5.3  B, D; 5.7  A; 5.4  C,D</p>	<p>Test  magnetism using materials and record conclusions  . Read and discuss chapter pages.  Identify cause and effects regarding forces.  Write informative explanations.</p>	<p>Force, friction, magnetism, gravitation, balanced forces, unbalanced forces, acceleration, net force, work, power, machine</p>	<p>Textbook, worksheets, magnets, measuring tools, household materials, computer</p>	<p>Project, lab observation, chapter quizzes and tests</p>	<p>4-5 weeks</p>
--	---	--	---	---	--	--	------------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

<p><b>Unit 5</b>  <b>Earth is constantly changed by many processes. Processes on and within Earth interact to produce natural resources.</b></p>	<p>Chap. 1          Students will distinguish between erosion and deposition. Describe and examine layers of the Earth, earthquakes and the theory of continental drift.</p>	<p>5.1          A,B,C;          5.3 C,D;          5.8 C,D;</p>	<p>Read &amp; discuss chap. Pages. Students will collect newspaper articles and photographs relating to effects of moving water. Identify cause &amp; effect. Create models of Earth with it's layers.</p>	<p>Landforms, weathering, erosion, deposition, mass movement, crust, mantle, core, plate, magma, earthquake, fault, continental drift, Pangea</p>	<p>Textbook, worksheets, Science Lab, video</p>	<p>Lab observation.          Chapter test</p>
--	--	--	--	---	---	---

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Students will distinguish between renewable and nonrenewable resources. Describe how human activity effects conservation</p>	<p>5.1 A; 5.4 A; 5.10 A,B</p>	<p>Read &amp; discuss chapter pages. Interpret data.</p>	<p>Natural resource, nonrenewable resource, renewable resource, reusable resource, fossit fuels, natural gas</p>	<p>Textbook, worksheets, computer</p>	<p>Written report, quizzes, test</p>	<p>4-5 weeks</p>
--	---	-------------------------------	--	--	---------------------------------------	--------------------------------------	------------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

Big Idea	Enduring Understanding	NJCCCS	Activities	Skills	Resources/Chapter/Lesson/ Technology component	Assessment
<b>Unit 5 Earth Systems</b>	Use models as an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact	5-ESS2-1	Make a diagram with labels and illustrations about each layer of the atmosphere. Make a chart of the temperature, moisture, location of major air masses	Air pressure, ELA crosscutting concepts-draw information from multiple resources, paraphrase information	Various print or digital resources, worksheets, SMARTBOARD interactive activities	Assessment of diagrams and charts

NCS Science Curriculum - Adopted & BOE Approved July 2017

**Grade 5**

	<p>Understanding the causes and effects of weather patterns</p>	<p>5-ESS2-1 .4 5-ESS2-1 .5</p>	<p>Design a booklet about various types of clouds and forms of precipitation Use a graphic organizer to support an opinion based on facts</p>	<p>Critical thinking, collecting data, cause and effect, climates and landforms</p>	<p>Textbook pages, Science World magazine, Brain Pop, multiple articles</p>	<p>Open-note quiz, graded booklet</p>
--	---	--	---	---	---	---------------------------------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

**Grade 5**

	<p>Describe the parts and structures of the skeletal, muscular and nervous systems.</p>	<p>5.5 A, 5.3 B</p>	<p>Record measurements of students' muscles. Measure reaction time. Students will use various household materials to build a protection device for the brain.</p>	<p>Bone marrow, joints, tendons, ligaments,</p>	<p>Chap 1, lesson 3 Worksheets made from teacher workbook</p>	<p>Chapter 1 Test</p>	<p>6 weeks</p>
--	---	---------------------	---	---	---	---------------------------	----------------

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

Big Idea	Enduring Understanding	NJCCCS	Activities	Skills	Resources/Chapter/Lesson/ Technology component	Assessment
<p><b>Unit 6</b>  <b>Interactions Within the Earth, Sun, and Moon System</b></p>	<p>Represent data to reveal patterns of daily changes in length and direction of shadows, day/night and seasonal appearances of some stars</p>	<p>5-ESS1-1                      5ESS1.A.1                      5ESS1-1.3</p>	<p>Research ancient structures related to astronomy and historical scientists.                      Design an astrolabe</p>	<p>Research, note taking, critical thinking, sequence steps</p>	<p>Textbook pages, diagrams, United Streaming videos, art supplies</p>	<p>Chapter Test, classwork packets, cooperative group activities</p>

NCS Science Curriculum - Adopted & BOE Approved July 2017

Grade 5

	<p>Support arguments of brightness of stars, formation of the Moon and understanding characteristics of planets</p>	<p>5-ESS1.A .1 5-ESS1-2 5ESS1.B. 1</p>	<p>Design own telescope and describe features and importance. Make a planet brochure. Research historical background of lunar landing</p>	<p>Similarities and differences, differentiation, cause and effect, analyze, brainstorming</p>	<p>Multiple print and digital resources, Science World magazines, United Streaming videos, Brain Pop, Kahoot, Quizlet</p>	<p>Chapter test, classwork worksheets, illustration and essay, planet project</p>
--	---	--	---	--	---	---



NCS Science Curriculum - Adopted & BOE Approved July 2017

**Grade 5**

	<p>Describe the parts and structures of the skeletal, muscular and nervous systems.</p>	<p>5.5 A, 5.3 B</p>	<p>Record measurements of students' muscles. Measure reaction time. Students will use various household materials to build a protection device for the brain.</p>	<p>Bone marrow, joints, tendons, ligaments,</p>	<p>Chap 1, lesson 3 Worksheets made from teacher workbook</p>	<p>Chapter 1 Test</p>	<p>6 weeks</p>
--	---	---------------------	---	---	---	---------------------------	----------------