

**LONG HILL TOWNSHIP SCHOOL DISTRICT
SCIENCE**

Texts:

Grades K – 6

Houghton Mifflin Science

Grade 7

Prentice Hall Science Explorer – Physical Science

Grade 8

Prentice Hall Science Explorer –Life Science

Science – 5.1 Science Practices, 5.2 Physical Science, 5.3 Life Science, 5.4 Earth Systems Science

Kindergarten

Physical Science

Objective	Activity	Resource	Standard(s)
Observing Objects			
Identify the 5 senses	Use senses to predict what snacks are in closed paper bags.	Unit E, Lesson 1	5.2A
Use sense to observe items	Same as above.	Same as above.	5.2A
Understand that objects have different properties	Sort items according to similarities.	Unit E, Lesson 2	5.2A
Sort objects by physical properties	Same as above.	Same as above.	5.2A
Understand that materials can be changed by cutting, folding, bending, mixing	Bend, cut, and fold clay to change its shape.	Unit E, Lesson 3	5.2A
Understand that objects can be sorted by physical properties	Sort a group of objects according to each object's main material.	Unit E, Lesson 4	5.2A
Understand that objects can be made of many different materials	Same as above.	Same as above.	5.2A
Identify parts of common objects	Observe how objects are made of parts.	Unit E, Lesson 5	5.2A
Changes in Matter			
Identify three states of matter	Compare and contrast solids, liquids, and gases and learn how to identify each.	Unit E, Lesson 6	5.2 A B
Understand that solids, liquids have different physical properties	Place an ice cube in a jar. Have students draw what they see. Wait for ice to melt and have them draw again. Discuss changes.	Same as above.	5.2 A B
Sort items based on their state of matter	Same as above.	Same as above.	5.2 A B

Heat, Light and Sound			
Understand that light passes through some objects and not others	Compare objects to find out which ones let light pass through and which do not.	Unit F, Lesson 1	5.2 C
Recognize that some objects block light, making a shadow	Same as above.	Same as above.	5.2 C
Describe different heat sources	Learn that rubbing objects together can make heat.	Unit F, Lesson 2	5.2 C
Understand that sound is made by rapidly moving objects and that these movements can be felt.	Test a radio's volume to determine how high it needs to be for you to feel the vibrations.	Unit F, Lesson 3	5.2
Recognize that objects move in different ways	Observe that when pushed, round objects roll, flat objects slide, and objects with wings fly.	Unit F, Lesson 4	5.2 E
Sort objects by how they move	Same as above.	Unit F, Lesson 4	5.2 E
Understand that the motion of an object can be changed by a push or a pull	Change the motion of a toy car by pushing it in different ways.	Unit F, Lesson 5	5.2 E
Movement			
Recognize that pushes and pulls are forces	Change the motion of a toy car by pushing it in different ways.	Unit F, Lesson 5	5.2 E
Recognize how force can change the direction of an object	Drop two balls from the same height to see which one falls fastest. Record observations.	Unit F, Lesson 6	5.2 E
Compare speed of objects	Same as above.	Same as above.	5.2 E

Earth Systems Science

Earth			
Identify Earth's materials – land, water, and air	Make a model Earth identifying land and water.	Unit C, Lesson 1	5.4 B C

Recognize that rocks, soil and sand are part of Earth's land	Compare soil, rock and sand.	Unit C, Lesson 2	5.4 B C
Identify that there are two kinds of water	Describe and identify bodies of water.	Unit C, Lesson 3	5.4 G
Identify where salt water and fresh water can be found	Same as above.	Same as above.	5.4 G
Understand that wind and water move soil	Model soil erosion by blowing on dry, wet and grassy soil.	Unit C, Lesson 4	5.4 B
Understand that plants help keep soil in place	Same as above.	Same as above.	5.4 B
Understand that Earth has a limited amount of materials	Graph the amount of paper used in the classroom. How can we save paper?	Unit C, Lesson 5	5.4 B G
Recognize ways people can save Earth's materials	Same as above.	Same as above.	5.4 G
Weather and Space			
Understand that weather changes daily	Use a weather instrument to observe current weather conditions.	Unit D, Lesson 1	5.4 F
Use words to describe weather	Same as above.	Same as above.	5.4 F
Describe each season – the weather, length of day, temperatures, seasonal changes	Observe weather conditions and model seasonal environments.	Unit D, Lessons 2 thru 5	5.4 F
Recognize the sun can be seen only during the day	Use a flashlight and darkened room to learn when stars can be seen and when the sun can be seen.	Unit D, Lesson 6	5.4 A
Recognize what can be seen in the night sky	Same as above.	Same as above.	5.4 A
Understand that the Sun is the Earth's source of heat and light.	Observe the sun's position in the sky and its effect on Earth.	Unit D, Lesson 7	5.4 A

Life Science

Living and Non Living Things			
Understand that objects can be classified as living or non living	Observe living and non living plants.	Unit B, Lesson 1	5.3 A
Understand that living things grow, change, reproduce, take in air, and need food and water	Use 3 plants (same size and kind). Label no water, no light and water and light. Students will identify basic needs of plants.	Unit B, Lesson 2	5.3 A
Understand the needs of living things	Same as above.	Same as above.	5.3 A
Identify how/where living things find food	Go on a nature walk and identify plants, insects, and other animals as food sources.	Unit B, Lesson 3	5.3 A
Understand that plants and animals live in environments that meet their needs.	Construct a model pond and meadow that includes plant and animal life.	Unit B, Lessons 4 and 5	5.3 A
Plants and Animals			
Identify body parts of animals that help them live and grow	Make models of animals to learn about body parts.	Unit A, Lesson 1	5.3 A
Identify how animals move	Observe how a cricket moves in an enclosed container.	Unit A, Lesson 2	5.3 A
Understand that animals go through a life cycle that includes changes Understand that some offspring closely resemble their parents and some do not	Observe the growth of a frog and place in chronological order.	Unit A, Lesson 3	5.3 A
Sort animals by various characteristics	Group dogs by color, size and shape.	Unit A, Lesson 4	5.3 A
Recognize the parts of a plant	Remove a plant from its pot to identify parts.	Unit A, Lesson 5	5.3 A
Observe how plants grow and change	Plant seeds and observe. Measure growth over a period of time.	Unit A, Lesson 6	5.3 B

Sort plants by various characteristics	Collect leaves of different shapes. Sort	Unit A, Lesson 7	5.3 A

Grade 1

Physical Science

Objective	Activity	Resource	Standard(s)
Describing Matter			
Use senses to classify objects	Sort objects by how they are alike.	Ch. 10, Lesson 1	5.2 A
Group objects by property			5.2 A
Use tools to observe objects	Use a ruler, a balance and hand lens to gather information about different objects.	Ch. 10, Lesson 2	5.2 A
Use tools to measure objects			5.2 A
Use hand lens to observe small parts of an object			5.2 A
Classify objects by whether they are attracted to magnets	Test objects with magnets to determine which ones are attracted to each other.	Ch. 10, Lesson 3	5.2 A
Classify objects by whether they sink or float	Predict if item will sink or swim.	Ch. 10, Lesson 4	5.2 A
Changes in Matter			
Identify three states of matter	Compare solids, liquids and gases and how their shape and size can or cannot change.	Ch. 11, Lesson 1	5.2 A
Compare solids, liquids, and gases			5.2 A
Explain how water can change forms	Observe changes in ice cubes when affected by temperature.	Ch. 11, Lesson 2	5.2 B
Describe the effects of heating and cooling			5.2 B
Describe changes when materials mix	Observe the consequences of mixing salt and water in a bowl.	Ch. 11, Lesson 3	5.2 B
Make and separate mixtures	Same as above.	Ch. 11, Lesson 3	5.2 B

Heat, Light and Sound			
Understand that heat is a form of energy	Use a thermometer to measure heat in containers containing different substances.	Ch. 12, Lesson 1	5.2 C
Recognize that heat can make things change			5.2 C
Recognize that light is a form of energy	Test objects to determine the effect of light on them and which allow light to pass through and which do not.	Ch. 12, Lesson 2	5.2 C
Understand various sources of light			5.2 C
Name objects that light can pass through			5.2 C
Name objects that light can not pass through			5.2 C
Recognize that sound is a form of energy	Have students observe a plucked rubber band to conclude that it will move very fast and make a sound.	Ch. 12, Lesson 3	5.2 C
Understand that sound can be produced when an object vibrates	Same as above.	Ch. 12, Lesson 3	5.2 C
Explain how changing the vibration of an object affects the sound it produces	Compare the sounds made when tapping objects filled with varying amounts of liquid.	Ch. 12, Lesson 4	5.2 C
Classify sounds			5.2 C
Movement			
Recognize that pushes and pulls are forces	Observe that different forces can be used to make objects move in different ways.	Ch. 13, Lesson 1	5.2 E
Recognize how force can change the direction of an object			Ch. 13, Lessons 1 and 3
Describe simple machines	Introduce tools used to move objects.	Ch. 13, Lesson 1	5.1 B D
Compare speed of objects	Compare the speed of objects as they roll down ramps of varying steepness. Measure distance travelled.	Ch. 13, Lessons 2 and 3	5.2 E

Life Science

Living and Non Living Things			
Understand that plants use their parts to survive	Observe a plant and its parts.	Ch.1, Lesson 1	5.3 C
Group plants	Compare and classify leaves.	Ch. 1, Lesson 2	5.3 C
Understand that plants produce oxygen	Observe a plant and its parts.	Ch. 1, Lesson 1	5.3 C
Recognize that plants have varied life styles	Identify the stages of a plant.	Ch. 1, Lesson 3	5.3 B
Understand that animals use their parts to survive	Infer how an animal/human blending with its environment helps it survive.	Ch. 2, Lesson 1 Ch. 4, Lesson 1	5.3 D
Group animals	Classify into similarities	Ch. 2, Lesson 2 Ch. 5, Lesson 2	5.3 B
Recognize that animals go through different life cycle stages	Model a living creature's life cycle to see how it grows and changes.	Ch. 2, Lesson 3	5.3 D
Understand that animals resemble their parents	Classify animals according to similarities.	Ch. 2, Lesson 2 Ch. 4, Lesson 2	5.3 A D
Understand that human body parts serve a function.	Label body parts and describe their function.	Ch. 3, Lesson 1	5.3 A
Recognize the human life cycle.	Sort pictures of a human in chronological order.	Ch. 3, Lesson 2	5.3 B
Identify living things in a tree.	Observe a tree and record observations.	Ch. 5, Lesson 1	5.3 E
Compare and Contrast ocean and wetland animals.	Sort animals into groups based on similarities.	Ch. 5, Lesson 2	5.3 E
Describe a desert.	Observe sponges and elements that affect their ability to retain moisture.	Ch. 5, Lesson 3	5.3 E

Weather and Space			
Understand that weather can be measured with tools	Use tools to gather data on temperature and rain for 1 week.	Ch. 8, Lesson 2	5.4 F
Recognize the weather changes from day to day	Observe weather for 5 days and record observations.	Ch. 8, Lesson 1	5.4 F
Understand that temperature measures how warm or cool something is			5.4 F
Identify water moving from Earth to sky and back is the water cycle	Measure and compare changes in water level between open and covered containers for 5 days.	Ch. 8, Lesson 3	5.4 F G
Identify the 4 seasons and their changes	Compare growth of sprouts in cold and warm locations. Identify clothing worn.	Ch. 8, Lessons 4 and 5	5.4 F
Recognize the sun can be seen only during the day	Observe daytime sky. Draw pictures.	Ch. 9, Lesson 1	5.4 F
Recognize the moon can be seen sometimes at day and sometimes at night	Use models to observe how the moon changes shape.	Ch. 9, Lesson 3	5.4 F
Observe the changes in the shape of the moon			5.4 F
Recognize the sun provides light and heat	Observe daytime sky and how the sun warms different surfaces.	Ch. 9, Lesson 1	5.4 E
Observe the movements of shadows	Observe the sun's location throughout the course of a day. Predict where sun will be next.	Ch. 9, Lesson 4	5.4 E

Earth Systems Science

Earth Through Time			
Describe characteristics of living things/ Environments			
Observe and describe rocks and soil	Classify rocks and observe soil	Ch. 6, Lessons 2 and 3	5.4 E
Understand natural resource	Compare and contrast water on Earth.	Ch. 6, Lesson 1	5.4 E
Understand that rocks are nonliving things	Classify and sort rocks.	Ch. 6, Lesson 2	5.4 F
Understand components of soil	Use senses to observe soil.	Ch. 6, Lesson 3	5.4 F
Understand that air and water help keep living things alive	Compare items left outdoors to those indoors. See how force of water keeps moving.	Ch. 7, Lessons 1 and 2	5.4 F
Identify ways to preserve natural resources	Students should understand how reusing materials helps Earth.	Ch. 7, Lesson 3	5.4 F G
Identify ways to clean up pollutions	.		5.4 G
Identify human needs	Understand that humans need to stay healthy thru exercise, proper nutrition and sleep.	Ch. 3, Lesson 2	5.4 G

Grade 2

Physical Science

Objective	Activity	Resource	Standard(s)
Energy			
Identify forms and sources of energy (wind, heat, sun, electricity)	Charts, discussions	Ch 9 lesson 1	5.2 B
Identify the position of an object by describing its relation to another object	Observe motion of a ball	Ch. 12, lesson 1	5.2 C
Understand that push and pull are forces	Observe motion of a ball	Ch. 12, lesson 2	5.2 E

measure motion using distance and speed	Change force or weight to observe change in motion	Ch. 12, lesson 3	5.1 B D
understand simple machines	Use ramp, lever, pulley	Ch. 12, lesson 3	5.2 E
Use magnets	Test magnets, classify magnetic/non-magnetic	Ch. 12, lesson 1, 2, 3	5.2 E
Understand that magnets attract and repel each others	Observe two magnets with N/S poles near each other (same and opposite)	Ch. 12, lesson 1	5.2 E
Identify magnetic items	Classify magnetic/nonmagnetic objects	Ch. 12, lesson 2	5.2 A
Exploring Matter			
Identify and Describe properties of matter	Chart properties	Ch 10, lesson 1	5.2 A
Identify 3 forms of matter	Define states of matter	Ch 10, lesson 1	5.2 A
Identify properties of solids	Describe objects by properties	Ch 10, lesson 1	5.2 A
Measure solids	Measure mass	Ch 10, lesson 1	5.2 A
Compare and contrast solids	Sort objects by properties	Ch 10, lesson 1	5.2 A
Identify types of liquids	Sort liquids	Ch 10, lesson 1	5.2 A
Identify properties of liquids	List properties	Ch 10, lesson 1	5.2 A
Measure liquids	Measure volume	Ch 10, lesson 1	5.2 A
Identify properties of gases	List properties	Ch 10, lesson 1	5.2 A

Exploring Matter (cont)			
Describe what happens when matter is mixed	Make a mixture: salad, lemonade, cornstarch & water,	Ch 10, lesson 2	5.2 B
Observe how matter changes when it is cut, torn, sliced, shaped, or broken	Change matter	Ch 10, lesson 2	5.2 B
Observe how matter can change	Apply heat to different materials to observe changes	Ch 10, lesson 2	5.2 B
Recognize that water can be a solid, liquid or gas		Ch 10, lesson 2	5.2 B
Describe how heat changes water from one state to another		Ch 10, lesson 2	5.2 B
Describe how burning and cooking can change the texture, size, color, shape, and taste of different matter		Ch 10, lesson 2	5.2 B
Recognize that not all matter responds to change in the same way		Ch 10, lesson 2	5.2 B
Recognize that many things are made of smaller pieces	Magnify glass activity	Ch 10, lesson 3	5.2 B
Sound			
Explain that sound is made by vibrating objects	How is sound made	Ch 11, lesson 1	5.2 B
Describe how sound is heard by the human ear	Sound waves	Ch 11, lesson 1	5.2 B
Explain that sound travels differently through different materials	Compare sounds, echoes	Ch 11, lesson 2	5.2 B
Recognize and describe pitch	Comparison charts	Ch 11, lesson 3	5.2 B

Motion/Force			
Describe ways objects can move	Ball activity	Ch 12, lesson 1	5.2 B
Explain how gravity affects motion	Ball activity	Ch 12, lesson 1	5.2 B
Explain the affects of pushes and pulls	Observe playground equipment	Ch 12, lesson 2	5.2 B
Recognize the relationship between size of a force and the motion of an object	Kick ball with various forces	Ch 12, lesson 2	5.2 B
Understand simple machines	Ramps, levers, pulleys	Ch 12, lesson 3	5.2 B
Understand magnets have poles	Test magnet ends	Ch 13, lesson 1	5.2 B
Recognize that magnets attract and repel each other	Demonstration, investigate	Ch 13, lesson 1	5.2 B
Identify materials that are attracted to magnets	Investigation, charts	Ch 13, lesson 2 and 3	5.2 B
Describe uses of magnets	Charts, lists	Ch 13, lesson 2	5.2 B

Earth Systems Science

Earth Through Time			
Compare rocks and soils	Compare samples	Ch 6, lesson 1	5.4 B
Describe uses of rocks and soils	Charts, posters	Ch 6, lesson 1	5.4 B
What changes the Earth's surface?	Erosion models	Ch 6 lesson 2	5.4 B
Explain what can be learned from fossils	Observe fossils	Ch 6 lesson 3	5.4 B
Describe how fossils are formed	Make fossil imprints	Ch 6 lesson 3	5.4 B
Identify role of a paleontologist	Dinosaur dig	Ch 6 lesson 3	5.4 B
Extinction	Class discussion		5.4 B
Identify air, water, rocks, soil, plants, animals, as natural resources		Ch 7, lesson 1	5.4 B

Earth Through Time (cont)			
Describe ways people use natural resources	Make pinwheel	Ch 7, lesson 1	5.4 G
Describe the causes and effects of pollution	Observe movement of pollution in soil samples	Ch 7, lesson 1	5.4 G
Identify ways that resources are wasted	Leaking faucet model	Ch 7, lesson 1	5.4 G
Know ways that people can cause positive and negative changes to the environment	Reuse/recycle activities	Ch 7, lesson 2	5.4 G
Identify ways to protect natural resources	Identify wasted resources	Ch 7, lesson 3	5.4 G
Weather and Space			
Identify how weather changes over time	Record weather/compare changes over time	Ch 8, lesson 2	5.4 F
Recognize patterns in weather		Ch 8 lesson 1	5.4 F
Identify tools to measure weather			
Describe how weather changes from season to season	Day light patterns	Ch 8 lesson 2	5.4 F
Use metric and standard units to measure temperature	Measure heat	Ch 8 lesson 1	5.4 F
Understand how heat affects water	Investigate D 15	Ch 8 lesson 2	5.4 F
Describe the water cycle	Observe cup of water covered with plastic wrap, in the sun	Ch 8 lesson 1	5.4 F
Identify characteristics of the sun		Ch 9 lesson 1	5.4 F
Observe how shadows change throughout the day	Trace a shadow at different times of the day	Ch 9 lesson 2	5.4 F
Understand that the reflection of the sun's light makes the moon visible	Moon chart	Ch 9 lesson 3	5.4 F
Tell how the moon appears to change	Moon chart	Ch 9 lesson 3	5.4 F
Infer why stars are only visible at night	Class discussion, text passage	Ch 9 lesson 4	5.4 F
Understand that stars and planets	Class discussion, text passage	Ch 9 lesson 1, 4	5.4 F

are always in the sky			
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Life Science

Living and Non Living Things			
Understand what plants need	Observe plant needs	Ch 1, lesson 1	5.3 D
Understand that plants' needs depend on their size and type	Celery stalk in colored water	Ch 1, lesson 1	5.3 D
Identify parts of a plant	Pictures of parts and their functions	Ch 1, lesson 2	5.3 D
Identify and sort plants by characteristics	Observe plants outside, draw picture of each, sort by similar characteristics	Ch 1 lesson 3	5.3 D
Understand that plants have life cycles	Plant and observe growth of a seed to a plant	Ch 1 lesson 4	5.3 D
Identify and describe the basic needs of animals	Make food chain, observe class pet	Ch 1, lesson 1, Ch 5, lesson 1	5.3 D
Understand that animals' needs vary by size, shape, and type	Text passages, class discussions	Ch 2 lesson 1, 2, 3	5.3 D
Identify characteristics of mammals, birds, reptiles, amphibians, and fish	Charts, posters	Ch 2 lesson 1,2	5.3 D
Compare and contrast mammals and birds	Sort animal cards, charts, posters	Ch 2 lesson 1, 2	5.3 D
Describe how animals use their body parts to meet their needs	Activity A52 – A53	Ch 2 lesson 3	5.3 E
Understand living things reproduce	Sort animal card	Ch 3, lesson 1	5.3 D
Understand non-living things do not reproduce	Text passages, class discussions	Ch 3, lesson 1	5.3 D
Understand living things produce offspring that resemble parents, but have individual differences	Animal cards	Ch 3 lesson 1	5.3D
Understand that some animals metamorphose	observations	Ch 3, lesson 2	5.3 D
Explain the life cycle of a frog, butterfly, and dragonfly	Posters, charts, diagrams	Ch 3, lesson 2	5.3 D

Living and Non Living Things (cont)			
Sort objects as living and non living in various environments	Classify outdoor objects	Ch 4 lesson 1	5.3 D
Describe characteristics of non-living things in various environments	Make a stream or woodland habitat model	Ch 4 lesson 2, 3	5.3 D
Understand how changes in an environments affect wildlife	Plant activity B26-B27	Ch 4 lesson 4	5.3 D
Understand what people do that changes environments	Plant activity B26 – B27	Ch 4 lesson 4	5.3 D
Describe food chains and food webs	Food chain strips	Ch 5, lesson 1	5.3 D
Understand that plants, animals and people need food for energy	Food pyramid – sort foods from food ads	Ch 5 lesson 1 & 2	5.3 D

Grade 3

Life Science

Objective	Activity	Resource	Standard
Life Cycles			
Observe the seed and seedling stages of pea plant's life cycle	Growing Greens	Unit A, chapter 3, lesson 1	5.3 A
Observe and identify three stages in the life cycle of a butterfly	Caterpillar Change	Unit A, chapter 3, lesson 2	5.3 A
Compare and contrast parts from different individuals of the same plant species.	Peas in a Pod	Unit A, chapter 3, lesson 3	5.3 A
Characteristics of Life			5.3 A
Compare how varying light levels affect the growth of grass	Soak up the Sun	Unit B, chapter 5, lesson 1	5.3 A
Identify roles that organisms may serves in a food chain	Food Chain Mobile Reaching all learners What is a food chain? Food chain mobile Match things up	Unit B, chapter 5, lesson 2 Unit B, chapter 5, lesson 3	5.3 A

	What are some different food chains?		
Differentiate between the needs of plants and the needs of animals	What are the needs of living things? Staying alive How do living things compete? Competition Independent Inquiry	Unit B, chapter 4, lesson 1 Unit B, chapter 4, lesson 2 Teacher's guide, Unit A, chapter 1, pg A2	5.3 A
Recognize that plants and animals are composed of different parts performing different functions and working together for the well being of the organism	How do plants use their parts? How do parts help classify plants? How do parts help plants survive?	Unit A, chapter 1, lesson 1 Unit A, chapter 1, lesson 2 Unit A, chapter 1, lesson 3	5.3 A
Classification character traits	Which animals are vertebrates? Model a Backbone Which animals are invertebrates?	Unit A, chapter 2, lesson 1 Unit A, chapter 2, lesson 2	5.3 A
Describe fossils and classify the living things made from them	Fossil Clues	Unit A, chapter 2, lesson 3	5.3 A
Describe the basic functions of the major systems of the human body including, but not limited to: circulatory system (<i>Health</i>) respiratory system (<i>Health</i>) skeletal system (<i>Health</i>) muscular system (<i>Health</i>)	Heart Rate Activity Model a Backbone Stretch Those Muscles	Health & Fitness Handbook Unit A, chapter 2, lesson 1 (3 rd grade health packet also) Health & Fitness Handbook – pg T47	5.3 A

Physical Science

Physics			
Identify sources of heat and demonstrate that heat can be transferred from one object to another	Inquiry What is heat? Track temperature	Teacher's guide, Unit F, chapter 14, pg F38 m-n Unit F, chapter 14, lesson 1 Unit F, chapter 14, lesson 2	5.2 C
Identify sources of light and demonstrate that light can be reflected from some surfaces and pass through others	Take Home Activity – Bend light What is Light?	Resource Folder – pg F40	5.2 C
Matter			

Define physical properties	Sorting Shells	Unit E, chapter 11, lesson 1	5.2 A
Observe physical changes in matter	Change It	Unit E, chapter 11, lesson 2	5.2 B
Define a chemical change in matter	A Rusty Change	Unit E, chapter 11, lesson 3	5.2 B
Make and observe different mixtures	The Great Mix-up	Unit E, chapter 12, lesson 1	5.2 B
Separate mixtures according to properties	Un-mixing Mixtures	Unit E, chapter 12, lesson 2	5.2 B
Make and compare mixtures & solutions	Shake it up	Unit E, chapter 12, lesson 3	5.2 B
Forms of Energy			
Observe energy as it is stored and released	Launch-It	Unit F, chapter 13, lesson 1	5.2 B
Observe and compare sound waves	Seeing Sounds	Unit F, chapter 13, lesson 2	5.2 B
Research and construct a simple electric circuit	Circuit Search	Unit F, chapter 13, lesson 3	5.2 B

Heat, Temperature, and Light			
Observe heat produced when chemical energy and kinetic energy change into thermal energy	Feel the Heat	Unit F, chapter 14, lesson 1	5.2 B
Measure and record temperature changes in water	Temperature Track	Unit F, chapter 14, lesson 2	5.2 B
Observe how light behaves when it strikes different materials	Shining Light	Unit F, chapter 14, lesson 3	5.2 B
Force and Motion			
Observe attractive and repulsive magnetic forces	Polar Opposites	Unit F, chapter 15, lesson 1	5.2 B
Observe and describe the motion of moving objects	Moving Marbles	Unit F, chapter 15, lesson 2	5.2 B
Compare the level of work needed to complete a task with and without the use of a simple	Load Them Up	Unit F, chapter 15, lesson 3	5.2 B

Earth Systems Science

Observe that most rocks and soils are made of several substances	Inquiry Measure Earth's Surface Volcano Blast Stones and Sand	Teacher's guide, Unit C, chapter 6, pg C2 m-n Unit C, chapter 6, lesson 1 Unit C, chapter 6, lesson 2	5.4 B
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		Unit C, chapter 6, lesson 3	
Observe that the properties of soil vary from place to place and will affect the soil's ability to support life	Inquiry What is Earth's surface like	Teacher's guide, Unit C, chapter 6, pg C2 m-n Unit C, chapter 6, lesson 1	5.4 B
Recognize that fossils provide evidence about the plants and animals that live long ago and the nature of the environment at that time	Make a Fossil Which Animals Lived Long Ago?	Unit A, chapter 2, lesson 3	5.4 B
Observe that when liquid water disappears, it turns into a gas (vapor) in the air and can reappear as a liquid when cooled, or as a solid if cooled below its freezing point	What is the water cycle?	Unit D, chapter 8, lesson 1	5.2 B

Recognize that clouds and fog are made up of tiny droplets of water and possibly tiny particles of ice	Weather report	Unit D, chapter 8, lesson 2	5.4 F
Recognize that some changes of the Earth's surface are due to slow processes such as erosion and weathering, and some changes are due to rapid changes such as land slides, volcanic eruptions, and earthquakes	Weather World Volcano Blast Map earthquakes and volcanoes	Unit D, chapter 8, lesson 3 Unit D, chapter 8, lesson 2	5.4 F
Research and compare temperatures from locations around the world and relate them to latitude	Weather World	Unit D, chapter 8, lesson 3	
Recognize that moving water, wind, and ice continually shape the Earth's surface by eroding rock and soil in some areas and depositing them in others	Getting Carried Away – Take Home Activity	Resource Folder – pg C14	5.4 B
Use maps to locate and identify physical features on the Earth-Social Studies landform maps	What is the Earth's Surface Like?	Unit C, chapter 6, lesson 1	5.4 B
Earth's Resources			
Observe and classify objects by the	What It's Made Of	Unit C, chapter 7, lesson 1	5.4 B

materials they are made of			
Construct a solar oven and measure its temperature	Solar Oven	Unit C, chapter 7, lesson 2	5.4 B
Compare the decomposition of common packing materials to determine whether they are biodegradable	Long-Lived Litter	Unit C, chapter 7, lesson 3	5.4 G

Astronomy and Space Science			
Observe patterns that result from the Earth's position relative to the sun and rotation of the Earth on its axis	What causes day and night? A long day	Unit D, chapter 10, lesson 1	5.4 A
Recognize and describe the phases of the moon	What are the Phases of the Moon? Moon Motion	Unit D, chapter 10, lesson 2	5.4 A
Construct a telescope	Making a Telescope	Unit D, chapter 9, lesson 1	5.4 A
Make models of constellations	Stargazing	Unit D, chapter 10, lesson 3	5.4 A
Describe Earth as one of several planets that orbit the sun and the moon as a satellite of the Earth	What is the Solar System? Planet movements What are the inner planets? Orbiting the Sun	Unit D, chapter 9, lesson 2 Unit D, chapter 9, lesson 3	5.4 A
Environmental Studies			
Associate organisms' basic needs with how they meet those needs within their surroundings	Staying Alive Competition Best Bird Beak Feathers Failure How do adaptations help living things? What happens when habitats change?	Unit A, chapter 4, lesson 1 Unit A, chapter 4, lesson 2 Unit A, chapter 4, lesson 3 Unit A, chapter 4, lesson 4 Unit B, chapter 1, lesson 2 Unit B, chapter 4, lesson 3	5.3 E
Identify various human needs that are supplied by the natural or constructed environment	What are the needs of living things? (including humans) Links: Writing and Health	Unit B, chapter 4, lesson 1 Unit B, chapter 5, lesson 1	5.4 B

Grade 4

LIFE SCIENCE

Objective	Activity	Resource	Standard(s)
Matter, Energy, and Organization in Living Systems			
Identify roles that organisms may serve in a food chain	Model of a Food Chain	Unit B – Chapter 6, Lesson 1	5.3 A
Differentiate between the needs of plants and the needs of animals	“	“	5.3 A
Recognize that plants and animals are composed of different parts performing different functions and working together for the well being of the organism	Identify plant parts	Unit B – Chapter 1, Lesson 2	5.3 A
Describe the basic functions of the major systems of the human body including, but not limited to:	“	“	5.3 A
digestive system	Model of system	Unit A Chapter 2, Lesson 1	5.3 A
circulatory system	Measure of heart rate Readers Theater	Unit A Chapter 2, Lesson 2	5.3 A
respiratory system	“	“	5.3 A
nervous system	Health		5.3 A
skeletal system	Modeling of an Arm	Unit A, Chapter 2 Lesson 3	5.3 A
muscular system	“	“	5.3 A
reproductive system	Life Cycles of Animals and Plants	Unit A Chapter 3, Lesson 1, 2	5.3 A
			5.3 A
Diversity and Biological Evolution			5.3 A
develop a simple classification scheme for grouping organisms	Organize Complex Living Animals Cat Picture Cards	Unit A Chapter 1, Lesson 1 Unit A Chapter 3, Lesson 3	5.3 A
recognize that individuals vary within every species, including humans	“	“	5.3 A
			5.3 A
Reproduction and Heredity			5.3 A
Identify different states in the lives of various organisms	Identify Life Processes	Unit A Chapter 1, Lesson 1	5.3 A
			5.3 A

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PHYSICAL SCIENCE

Chemistry			
Structure and Properties of Matter			
Sort materials based on physical characteristics that can be seen using magnification	Compare Matter	Unit E, Chapter 12, Lesson 1	5.2 A
Observe that water can change from one form to another, and the mass stays the same	E 8 – E 9		5.2 B
Understand how mass and volume can be measured	Conduct Measurements	Unit E, Chapter 12, Lesson 2	
Measure and compare density	Conduct Measurements	Unit E, Chapter 12, Lesson 3	
Measure changes caused by heating and cooling	Conduct Measurements	Unit E, Chapter 13, Lesson 2	5.2 B
Recognize that water can exist as a solid, liquid, or gas and can be transformed from one state to another by heating or cooling	Matter changes – E 37		5.2 B
Understand all matter is made up of tiny particles	Observation and comparison of matter	Unit E, Chapter 12, Lesson 1	5.2 A
Chemical Reactions			
Combine two or more materials and show that the new material may have properties that are different from the original material	A Cool Change	Unit E Chapter 13 Lesson 4 pg 65	5.2 B
Understand how mixtures and solutions can be made and separated	Observe and Compare Mixtures and solutions	Unit E Chapter 13 Lesson 3	5.2 B
Physics			
Motion and Forces			
Recognize that changes in the speed or direction of a moving object are caused by force , and the greater the force, the greater the change in motion	Keep It Rolling	Unit F Chapter 16, Lesson 1 page F81	5.2 E
Recognize that some forces can act at a distance	Writing/Technology	Unit F Chapter 16, Lesson 2 page F95	5.2 E
Describe how friction and gravity act on objects	Away You Go	Unit F Chapter 16, Lesson 2 page F89	5.2 E

Observe and describe the effect of magnets	Pick It Up	Unit F Chapter 15, Lesson 3 page F61	5.2 E
Understand how an electromagnet works	Construct an Electromagnet	Unit F Chapter 15, Lesson 4	
Construct a complete circuit	Make a circuit	Unit F Chapter 15, Lesson 2	
Identify positive and negative charges	Build a Charge	Unit F Chapter 15, Lesson 1 page F43	
static electricity	“	“	5.2 AND 5.1 B D
Identify and explain simple machines	Explore simple machines	Unit F Chapter 16, Lesson 3	
Energy Transformation			
Identify sources of heat and demonstrate that heat can be transferred from one object to another			5.2 C
Distinguish between kinetic and potential energy	Energy Swing	Unit F Chapter 14, Lesson 1	
Describe changes between kinetic and potential energy	“	“	

Identify sources of light and demonstrate that light can be reflected from some surfaces and pass through others	Point of View – F 11 Pressed for Time Lab – F 11	Unit F Chapter 14, Lesson 2 page F11	5.2 C
Use devices that show electricity producing heat, light, sound and magnetic effects	Make a Bulb Light – F 53 Stick to It – F 67	Unit F Chapter 15, Lesson 4	5.2 C
Show that differences in sound can be produced by varying the way objects vibrate	Changing Sounds Pressed for Time Lab – F 19	Unit F Chapter 14, Lesson 3	5.2 C

EARTH SYSTEMS SCIENCE

Earth Through Time			
Earth's Properties and Materials			
Observe that most rocks and soils are made of several substances	Looking at Rocks – C 5	Unit C Chapter 8 Lesson 1	5.4 C
Observe that the properties of soil vary from place to place and will affect the soil's ability to support life	Soil Sequencing Critical Thinking – Analyze C 52-53	Unit C Chapter 8, Lesson 2,3	5.4 C
Recognize that fossils provide evidence about the plants and animals that live long ago and the nature of the environment at that time	Make a Fossil – B 75 How Did They Move – B 75	“	5.4 B
Understand Earth's surface is changing	Model an Earthquake, Erosion, Weathering	“	

Atmosphere and Water			
Recognize that air is a substance that surrounds us, takes up space, and moves around us a wind	Balancing Air – D 5	Unit D Chapter 10, Lesson 1	5.4
Recognize that most of the Earth's surface is covered by water and be able to identify the characteristics of the following sources of water:	C 42	Unit C Chapter 9 Lesson 1	5.4 F
Understand how the water cycle affects weather	Describe different kinds of clouds and forms of precipitation	Unit D Chapter 10 Lesson 2	5.4 G F
Understand what causes weather	Collect and analyze weather data	Unit D Chapter 10, Lesson 3	5.4 G F
Understand climate	Identify various different climate regions	Unit D Chapter 10, Lesson 4	5.4 F
Describe the 4 layers of Earth's atmosphere and the green house effect	Model of atmosphere	Unit D Chapter 10, Lesson 1	5.4 C
Observe weather changes and patterns by measurable quantities such as temperature, wind direction and speed, and amounts of precipitation	Local Forecast – D 21	Unit D Chapter 10 Lesson 3	5.4 F
Observe that when liquid water disappears, it turns into a gas (vapor) in the air and can reappear as a liquid when cooled, or as a solid if cooled below its freezing point	Water Cycle Model – D 13 Building Confidence – D 12 Warm Water, Cold Ice – D 13	Unit D Chapter 10 Lesson 2	5.4 F
Observe that forms of precipitation come from clouds, but that not all clouds produce precipitation	Art Link – D 17 Word Origins	Unit D Chapter 10 Lesson 2	5.4 F
Recognize that clouds and fog are made up of tiny droplets of water and possibly tiny particles of ice	D 17	Unit D Chapter 10 Lesson 2	5.4 F
Processes that Shape the Earth			
Recognize that some changes of the Earth's surface are due to slow processes such as erosion and weathering, and some changes are due to rapid changes such as land slides, volcanic eruptions, and earthquake	Earthquakes – C 13	Unit C Chapter 8, Lesson 2,3	5.4 D
Recognize that moving water, wind, and ice continually shape the Earth's surface by eroding rock and soil in some areas and	A Model Glacier – C 25	Unit C Chapter 8, Lesson 2,3	5.4 B

depositing them in others			

LIFE SCIENCE

How We Study the Earth			
Use maps to locate and identify physical features on the Earth	Social Studies		5.3 D

Earth, Moon, Sun System			
Understand how the sun is important to Earth	Model and discuss the role of the sun	Unit D Chapter 11, Lesson 1	
Observe patterns that result from the Earth's position relative to the sun and rotation of the Earth on its axis	Earth/Moon Model – D 67	Unit D Chapter 11, Lesson 3	5.3 A
Recognize and describe the phases of the moon	Extra Support-Informal Assess – D 70 – D 73	Unit D Chapter 11, Lesson 3	5.3 A
Solar System			
Describe Earth as one of several planets that orbit the sun and the moon as a satellite of the Earth	Outer Planets ; describe and compare the planets	Unit D Chapter 11 Lesson 2	5.3 B
Stars			
Observe that stars are not all the same in brightness, size and color	D 76	Unit D Chapter 11, Lesson 4	5.3 C
Observe that the position of stars with respect to each other is unchanging	Star Clock – D 75 Building Confidence – D 74 Connect The Dots – D 75	Unit D Chapter 11, Lesson 4	5.3 C
Galaxies and Universe			
Recognize that images of celestial objects can be magnified and seen in greater detail when observed using binoculars and light telescopes	“Talk About It” – D 64-65	Unit D Chapter 11 Lesson 2	5.3 D
Environmental Studies			
Natural Systems and Interactions			5.3 A
Associate organisms' basic needs with how they meet those needs within their surroundings	Right at Home – B 11	Unit B Chapter 5 Lesson 2	

Human Interactions and Impact			
Identify various human needs that are supplied by the natural or constructed environment	C 40	Unit C Chapter 9 Lesson 1	5.3 B

Grade 5

Physical Science

Objective	Activity	Resource	Standard
Physics			
Motion and Forces			
Recognize that an object at rest will remain at rest and an object moving in a straight line at a steady speed will continue to move at a steady speed unless a net (unbalanced) force acts on it.	Observe effects of force on objects' motion, investigate F4 & F5	Chapter 15 – lesson 1	5.2 E
Recognize that motion can be retarded by forces such as friction and air resistance	Sheep in a jeep	Chapter 15 – lesson 1	5.2 E
Recognize that everything on or near the Earth is pulled toward the Earth's center by gravitational force.	F12	Chapter 15 – lesson 1	5.2 E
Work is done when a force moves an object over a distance	F6 & F13	Chapter 15 – lesson 2	5.2 E
Magnetism is a force that acts between magnets and certain objects	Investigate F28-F29	Chapter 15 – lesson 4	5.2 E
Kinetic and potential energy	Investigate F42-F43	Chapter 16 – lesson 1	5.2 D

Energy			
Energy can be changes into different forms, but not destroyed		Chapter 16 – lesson 1 Chapter 18 – lesson 3	5.2 C
Light is a form of energy transferred by electromagnetic waves	Investigate F62-63	Chapter 16 – lesson 3	5.2 C
Static electricity releases a brief burst of energy	Inquiry: It's electric	Chapter 18 – lesson 1	5.2 C
An electrical current provides a constant flow of electricity	TE F 100m	Chapter 18 – lesson 2	5.2 C
An electrical circuit provides a path for electrons to travel	Investigate F110-111	Chapter 18 – lesson 2	5.2 C
Generators convert mechanical energy to electric energy and motors do the reverse	F107	Chapter 18 – lesson 3	5.2 C

Earth Systems Science

Atmosphere and Water			
Describe the composition, circulation, and distribution of the world's oceans, estuaries, and marine environments.	B16-B18, Inquiry: Go with the flow	Chapter 6	5.4 F
Describe and illustrate the water cycle.	Investigate A60-61		5.4 F
Understand water covers $\frac{3}{4}$ of the Earth	C9	Chapter 6- lesson 1	5.4 F
Identify the Earth's layers	C36-37 create a model	Chapter 7- lesson 1	5.4 G
Identify alternate energy sources		Chapter 8 – lesson 1	5.4 F
Understand reducing, reusing, and recycling as three ways to conserve resources	Investigate C72-73	Chapter 8- lesson 1	5.4 G
			5.4 G

Astronomy and Space Science			
Using models, demonstrate an understanding of the scale of the solar system that shows distance and size relationships among the sun and planets.		Chapter 11- lesson 1 &2	5.4 A
Explain how the motions of the Earth, sun, and moon define units of time including days, months, and years.		Chapter 10 – lesson 2 Chapter 11 – lesson 1	5.4 A
Understand that Earth’s seasons result from the tilt of its axis, the curve of its surface, and its revolution around the sun		Chapter 10 – lesson 1	5.4 A
Recognize that the sun's gravitational pull holds the planets in their orbits and that the planets' gravitational pull holds their moons in their orbits.		P D56	5.4 A
Observe and record short-term and long-term changes in the positions of the constellations in the night sky.	Investigate D72 & 73	Chapter 11 – lesson 3, p D75	5.4 A
Observe that the planets appear to change their position against the background of stars.		Chapter 11 – lesson 2	5.4 A
Define solar system		Chapter 11 – lesson 3	5.4 A
Understand the life cycle of a star		Chapter 11 – lesson 3	5.4 A
Define galaxy			5.4 A
			5.4 A

Life Science

Characteristics of Life			
Explain how organisms interact with other components of an ecosystem.		Chapter 4	5.3 A
Understand plants manufacture food through photosynthesis		Chapter 2 – lesson 1, A47	5.3 B
Understand the role of plants in the carbon and oxygen cycles		Chapter 2 – lesson 2	5.3 B
Classify plants		Chapter 2 – lesson 3	5.3 A
Understand that organisms detect and respond to internal and external stimuli	Water, light, tropism	Chapter 4- lesson2	5.3 A
Understand that organisms learn behavior through interaction with their environment (pollination)		Chapter 4, lesson 2	5.3 A
Environmental Studies			
Describe the natural processes that occur over time in places where direct human impact is minimal.		Chapter 5 – lesson 2	5.3 B
Describe the effect of human activities on various ecosystems.		Chapter 5 – lesson 3	5.3 B
Evaluate the impact of personal		Chapter 5	5.3 B

activities on the local environment.			
Understand that every species occupies a part of an ecosystem		Chapter 4 – lesson 1	5.4 B
Understand that changes in the environment can change population size		Chapter 5- lesson 3	5.4 B
Understand the factors that can limit population growth and lead to extinction		Chapter 5	5.4 B
Understand the feeding relationships in ecosystems		Chapter 5	5.4B
Understand that organisms adapt to their environment			5.4 B

Grade 6

Physical Science

Objective	Activity	Resource	Standard
Physics			
Composition of matter			
Understand atoms consist of a nucleus of protons and neutrons surrounded by electrons	What are building blocks of matter?	Chapter 14 – lesson 1	5.2 A
Understand that acids and bases are two groups of compounds and are measured by the pH scale	What are acids and bases	Chapter 14, lesson 4	5.2 A
Understand that compounds are made of two or more chemically combined elements.	What is a compound	Chapter 14 – lesson 2	5.2 B
Define solution	What properties do solutions have?	Chapter 14 – lesson 3	5.2 A B
Understand physical change	What is physical change?	Chapter 15 – lesson 1	5.2 B
Understand that chemical reactions rearrange bonds among atoms	What is chemical change? What are types of chemical	Chapter 15 – lesson 2 and 3	5.2 B

	reactions?		
Understand that matter cannot be created or destroyed	Conservation of matter p.E71	Chapter 15 – lesson 3	5.2 A
Understand that the number and types of atoms remain constant before and after a chemical reaction	Chemical change	Chapter 15 – lesson 2	5.2 B
Recognize that about 100 different elements have been identified and most materials on Earth are made of a few of them.	Periodic table of the elements	Chapter 14 – lesson 1	5.2 A
Show that equal volumes of different substances usually have different masses.	Thermal gas expansion	Chapter 15 – lesson 1	5.2 6 A
Describe the properties of mixtures and solutions, including concentration and saturation.	Mixtures E29	Chapter 15 – lesson 3	5.2 12 A
Describe characteristic physical properties such as boiling point, melting point, and solubility, and recognize that the property is independent of the amount of sample.	Energy and physical change	chapter 15 – lesson 1	5.2 12 C
Energy			
Understand that energy cannot be destroyed or created, only transformed	What is conservation of energy?	Chapter 16	5.2 C
Understand that heat is the transfer of thermal energy	How is thermal energy transferred?	Chapter 16 – lesson 3	5.2 C
Weather and Climate			
Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. Ask questions to clarify evidence of the factors that have caused the rise in global temperature over the past century. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.			

Earth Systems Science

Earth Systems Science			
Recognize that about 100 different elements have been identified and most materials on Earth are made of a few of them.	Periodic table of elements (physics)	Chapter 14 – lesson 1	5.2 8A
Show that equal volumes of different substances usually have different masses.	Thermal gas expansion E52	Chapter 15 – lesson 1	5.2 6A
Describe the properties of mixtures and solutions, including concentration and saturation.	Mixtures E28	Chapter 15 – lesson 3	5.2 12 A
Describe characteristic physical properties such as boiling point, melting point, and solubility, and recognize that the property is independent of the amount of sample.	Energy and physical change	Chapter 15 – lesson 1	5.2 8A
Understand the rock cycle	What are the 3 classes of rock?	Chapter 8 – lesson2	5.4 A
Classify rocks	3 classes of rock explained	Chapter 8 – lesson 2	5.4 A
Identify the layers of the Earth			5.4 A
Define and understand fossil fuels	Why are fossil fuels limited?	Chapter 10 – lesson 1	5.4B
Understand the Earth's crust and upper mantle make up the lithosphere, which is divided into moving plates	p.C45 Tectonic plates	Chapter 9 – lesson 2	5.4 A
Understand the plate movement effects the Earth in various ways	Plate movement p. C45 What changes do moving plates cause?	Chapter 9 – lesson 3	5.4 6D
Summarize the process involved in the rock cycle and describe the characteristics of the rocks involved.			5.4 D

Life Science

Characteristics of Life			
Explain how organisms interact with other components of an ecosystem.			5.3 B
Understand that cells are the basic structural and functional unit of all living things	Cells A46	Chapter 2 – lesson 1	5.3 B
Understand that some organisms are made of one cell and larger are made of specialized cells	Specialized cells A54	Chapter 2- lesson 2	5.3 B
Describe and give examples of the major categories of organisms and of the characteristics shared by organisms.	Kingdoms of living things A6	Chapter 1 – lesson 1	5.3 B
Compare and contrast acquired and inherited characteristics in human and other species.	Inherited traits A88	Chapter 3 – lesson 2	5.3 D
Describe life cycles of humans and other organisms.	Sexual/asexual reproduction	Worksheet, video	5.3 A
Understand that every trait is coded by a gene, and every gene is made of two alleles	Seven traits of pea plants	Chapter 3, p. A90	5.3 B
Environmental Studies			
Recognize the 6 kingdoms	Kingdoms of living things	Chapter 1 – lesson 1	5.4 B

Grade 7

Physical Science

Objective	Grade and Activity	Resource	Standard(s)
Structure and Properties of Matter - Grade 7			
Know that all matter is composed of atoms that may join together to form molecules	What is a mixture? Discussion Observations and models	Ch. 2, sect. 1 Internet Ch. 4, sect. 1	5.2 A
Recognize that the phase of matter is determined by the arrangement and motion of atoms and molecules and that the motion of these particles is related to the energy of the system	Cartoon Discussion Viscosity Activity Melting Ice Gas Laws	Ch. 2, sect. 3 Ch. 3, all	5.2 A 5.2 E
Know that there are groups of elements that have similar properties, including highly reactive metals, less reactive metals, highly reactive non-metals, and some almost completely non-reactive gases.	Timeline of Atoms Organizing Elements Alien Periodic Table ...Atom Decay	Ch. 2, sect. 1 Ch. 4, sect. 1-4 Ch. 4, sect. 5	5.2 A
Recognize that a mixture often can be separated into the original substances using one or more of their characteristic physical properties.	Discussion Demonstrations Nuts and Bolt Activity Does It Dissolve? Predicting	Ch. 2, sect. 1 Ch. 7, sect. 1, 2	5.2 A 5.2 B
Recognize difference between mass and weight and volume and density.	Measuring coins and water	Ch. 2, sect. 1	5.2 A
Recognize physical and chemical changes of matter.	Discussion Observation of candle	Ch. 2, sect. 2	5.2 B

Objective	Grade and Activity	Resource	Standard(s)
Structure and Properties of Matter (con't) – Grade 7			
Identify properties of acids and bases.	Cabbage juice indicator What color does litmus paper turn?	Internet Ch. 7, sect. 3	5.2 A
Motion and Forces			
Recognize and describe motion.	Show some motion How fast... Measuring motion, speed, and velocity	Ch. 9 – project Ch. 9, sect. 1, 2	5.2 E
Use quantitative data to show that when more than one force acts on an object at the same time, the forces can reinforce or cancel each other producing a net (unbalanced) force that will change speed and/or direction of the object.	Is the force with you? Sticky sneakers Discussion Investigating Friction	Ch. 10, sect. 1	5.2 E
Recognize that every object exerts a gravitational force on every other object, and that the force depends on how much mass the objects have and how far apart they are.	Which land's first? Discussion Conservation of Momentum	Ch. 10, sect. 2 Ch. 10, sect. 4	5.2 E
Explain Newton's Laws of Motion	What changes motion? Newton Laws Project	Ch. 10, sect. 3	5.2 E
Recognize Forces in Fluids (Pascal, Bernoulli)	Blow up balloon... Sink and Spill; Hydraulics	Ch. 11, sect. 1, 2, and 3 Internet	5.2 E
Identify Simple and Complex	Pull at an angle Calculate work, power, and efficiency Paper Screw Make (draw) compound machine	Ch. 12, sect. 1, 2 Ch. 12, sect. 3	5.2 E

Objective	Grade and Activity	Resource	Standard(s)
Energy Transformations – Grade 7			
Recognize that the sun is a major source of the Earth's energy and that solar energy includes visible, infrared and ultraviolet radiation.	What is white light? Discussion Visible light	Ch. 17, sect. 2, 3 Ch. 13, sect. 1-4 Ch. 18	5.2 C
Describe the nature of various forms of energy, including heat, light, sound, chemical, mechanical, and electrical and trace energy transformations and from one form to another.	Controlling reactions Flashlight Discussion Can you feel the power? Soaring straws	Ch. 2, sect. 4 Ch. 16, 17, 18 Ch. 6, sect. 3 Ch. 13, sect. 2, 3	5.2 D
Describe how heat can be conducted through materials or transferred across space by radiation and know that if the material is a fluid, convection currents may aid the transfer of heat.	How cold is water? What does it mean to heat up? Discussion What is sound?	Ch. 14, sect. 1, 2 Ch. 16	5.2 D
Show that light is reflected, refracted, or absorbed when it interacts with matter and that colors may appear as a result of this interaction.	Discussion Mirrors Lenses	Ch. 15, sect. Ch. 18 Computer	5.2 C
Recognize fire triangle	Discussion	Ch. 6, sect. 4	5.2 C
Identify Kinetic and Potential Energy	How high does a ball bounce?	Ch. 13, sect. 1	5.2 C
Identify characteristics of waves	Can you change a wave? How does a ball bounce? Discussion Making Waves	Ch. 14, sect. 1, 2, 3, 4 Ch. 16	5.2 C

Objective	Grade and Activity	Resource	Standard(s)
Chemical Reactions – Grade 7			
Show how substances can chemically react with each other to	Discussion and Observation Classifying	Ch. 6, sect. 1 Ch. 7, sect. 3, 4	5.2 B

form new substances having properties different from those of the original substance	Where's the Evidence?		
Show that most chemical reactions energy is transferred into or out of a system	Baking soda and vinegar activity	Ch. 6, sect. 1, 2, and 3	5.2 B
Demonstrate that regardless how substances within a simple closed system interact, the total mass of the system remains the same	Do you lose anything? Conservation of mass	Ch. 6, sect. 2	5.2 B
Illustrate how atoms are rearranged when substances react, but that the total number of atoms and the total mass of the products remain the same as the original substances.	Chemical Equations Cartoon – types of reactions – project	Ch. 6, sect. 2	5.2 B
Recognize different types of bonds	Partner bonding Crystals	Internet Ch. 5, sect. 1	5.2 B
Identify organic comp.	Check out fine print – project Hydrocarbon discussion	Ch. 8 – Project, sect. 4 Ch. 8, sect 3 Internet	5.2 B
Identify properties of Polymers	What did you make?	Ch. 8 –sect. 3 Internet	5.2 B

Grade 8

Life Science

Characteristics of Life			
Explain how the products of respiration and photosynthesis are recycled	-take notes off power point -interactive activity on computer	Ch. 3 Sections 3 and 4 p. 86-94 -internet, computer	5.3 B
Habits of mind: -replication is necessary -curiosity, skepticism, open mindedness, honesty are attributes	-Bead lab, scientific inquiry -Worksheets -Notes	Ch. 1	5.1 A
Inquiry and Problem solving Design and conduct investigations	-Come up with a common belief and design an experiment to test it.	Ch. 1	5.1 A
Cultural contributions Historical perspectives	Scientists around the world contributing to theories such as cell theory, evolution, genetics, diseases	Ch. 1, 2, 4, 6, 7	5.1 C
Recognize that complex multi-cellular organisms, including humans, are composed of and defined by interaction of the following: cells, tissues, organs, and systems	-Take notes -online interactive activities -virtual cell tour	Ch. 2, 9	5.3 B
Compare and contrast kinds of organisms using their internal and external characteristics	-notes -Videos -Online activities -Dissections (earthworm, clam, starfish, squid, fish, frog)	Ch. 9, 10, 11	5.3 C AND 5.1 D 5.1 D (DISSECTING TOOLS AND PROEDURE)

Characteristics of Life			
Discuss how changing environmental conditions can result in evolution or extinction of a species	-Lab on variation, natural selection -Notes -Videos -Read articles on Darwin	Ch. 6	5.3 E
Recognize that individual organisms with certain traits are more likely to survive and have offspring.	-Lab on natural selection (mouse lab) -Notes	Ch. 6	5.3 E
Describe how the sorting and recombining of genetic material results in the potential for variation among offspring of humans and other species	-Lab activities (genetics lab) -Notes -Computer activities -Pet Poster genetics project	Ch. 6 section 1 Ch. 4 Genetics	5.3 D
Mathematical Applications -using math to model objects, events and relationships	-Graphing -Punnett squares (probability) -Data analysis	Ch. 4 Genetics Ch. 7 Bacterial growth	5.1 B
Nature and process of technology	-Timeline of microscopes -Discovery of the cell and its parts -Communication of ideas	Spread out across entire curriculum	5.1 B