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| **Grade 5 Physical Science Chapter 1:** Properties of Matter **Big Question:** What are the properties of matter? **Reading Skill:** Compare and Contrast | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter 1 Opener  Feeling a Little Rusty? Untamed Science™ Video |  |  | Try It!  How are weight and volume affected when objects are combined? | **5-PS1-1** Develop a model to describe that matter is made of particles too small to be seen.  **5-PS1-2** Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.  **5-PS3-1** Make observations and measurements to identify materials based on their properties.  **5-PS4-1** Conduct an investigation to determine whether the mixing of two or more substances results in new substances. |
| Lesson 1 What makes up matter?  p. 9-15 | I will know that all thinks are made of very small particles called atoms and molecules, which cannot be seen without magnifying instruments. | Atom  Atomic Theory  Compound  Molecule | My Planet Diary  Fun Fact: Air Freshener |
| Lesson 2 How can matter be described?  p. 17-21 | I will know how to compare and contrast solids, liquids, and gases by using their basic properties. | Mass  Temperature  Volume | Explore It!  What are some properties of solids? |
| Lesson 3 What are solids, liquids, and gases?  p. 23-27 | I will know some basic properties of solids, liquids, and gases. | Solid  Gas  Liquid | Explore It!  How can water change state? |
| Lesson 4 What are mixtures and solutions?  p. 29-33 | I will know properties of solutions and that mixtures can be separated based on properties of their parts. | Mixture  Solution | Explore It!  How can a mixture be separated? |
| Lesson 5 How does matter change?  p. 35-39 | I will know that many physical changes are affected by temperature. I will know that many chemical changes are affected by temperature. | Physical Change  Chemical Change | Explore It!  What happens when air heats up? |
| Chapter Wrap-Up |  |  | Investigate It!  What are some ways to separate a mixture?  Guided Inquiry  How could a mixture of iron filings, sand, and water be separated? |

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| **Grade 5 Physical Science Chapter 2:** Forces and Motion **Big Question:** What affects the motion of objects **Reading Skill:** Main Idea and Details | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter 2 Opener  Fun w/Forces Video |  |  | Try It!  How can you make a paper helicopter drop slowly?  p. 54 | **5-PS2-1** Use a model to understand down as the direction Earth’s gravity pulls on a suspended object, that is, toward the center of earth. |
| Lesson 1  What are forces?  TE pp. 60A-65B | I will investigate forces and will engage in arguments about force based on the evidence of gravity. | Gravity  Force  Friction | My Planet Diary  Misconceptions  p. 60 |
| Lesson 2  What are Newton’s Laws?  TE p. 66A-73B | I will investigate and construct an argument that supports that a given object will have more change of motion with a large force than with a small force and that a given force will cause more change of motion on small masses than on large masses. | Acceleration  Inertia  Uniform Motion | Explore It!  How can forces affect motion?  p. 66 |
| Lesson 3  How are forces combined?  TE p. 74A-77B | I will use math to add forces and will engage in an argument from evidence that a body will not start moving if the forces acting on it are balanced. | Balanced  Combined Force  Net Force | Explore It!  How do forces combine?  p. 74 |
| Lesson 4  How are shadows formed?  TE p. 78A-81B | I will investigate how shadows form and will communicate the results of an investigation. | Light  Shadow  Waves | Explore It!  What can cause the size and shape of a shadow to change?  p. 78 |
| Chapter Wrap-Up  TE 82-93B |  |  | Investigate It! What forces affect the motion of a rocket?  p. 82-83  Guided Inquiry  How did the bag affect the motion of the rocket? |

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| **Grade 5 Life Science Chapter 3:** Growth and Survival **Big Question:** How do plants and animals grow and change? **Reading Skill:** Cause and Effect | | | | | |
| **Big Question** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter 3 Opener  Give Me That Carbon! Untamed Science Video |  |  | Try It!  How can temperature affect seed growth?  p. 102 | **5-LS1-1** Create a diagram and written explanation supporting the argument that plants get the materials they need chiefly from air and water. |
| Lesson 1  What are some physical structures in living things?  TE p. 108A-113B | I will compare and contrast the structures and functions of parts of plants and animals. | Exoskeleton  Spiracles  Stomata | My Planet Diary  Connections  p. 108 |
| Lesson 2  How do adaptations help plants?  114A-119B | I will construct a diagram based on evidence that plants can survive in different environments because of adaptations. | Adaptation  Mutation  Succession | Explore It!  How can plants survive in the desert?  p. 114 |
| Lesson 3  How do adaptations help animals?  TE 120A-125B | I will construct an argument based on evidence that animals can survive in different environments based on adaptations. | Structural Adaptations  Extinct Species  Instincts | Explore It!  Which bird beak can crush seeds?  p. 120 |
| Lesson 4  What are the life cycles of some animals? | I will model the life cycle of some animals and will investigate how some animals go through metamorphosis. | Life Cycle  Metamorphosis  Molt | Explore It!  How do butterflies grow and change?  p. 126 |
| Chapter Wrap-Up  TE 132-141 |  |  | Investigate It!  How do seeds grow?  p. 132  Guided Inquiry  How would seeds grow in different material?  133B |

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| **Grade 5 Life Science Chapter 4:** Ecosystems **Big Question:** How do living things interact with their environment? **Reading Skill:** Main Idea and Details | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter 4 Opener  Keeping Manatees Safe! Untamed Science Video |  |  | Try It!  What is in a local ecosystem?  p. 144 | **5-PS3-1** Develop and use a model of a food chain and a food web.  **5-LS1-1** Create a diagram and written explanation supporting the argument that plants get the materials they need chiefly from air and water.  **5-PS3-1** Create a model that shows the process of photosynthesis focusing on how plants use materials in the environment to make food.  **5-ESS3-1** Write and present a letter to the local environmental agency about a local environmental issue. |
| Lesson 1  How do plants get and use energy?  TE p. 150A-157B | I will analyze and interpret data that supports that plants use energy from the sun. | Cellular Respiration  Epidermis Tissue  Photosynthesis | My Planet Diary  Discovery  p. 150 |
| Lesson 2  How do organisms interact in ecosystems?  TE p. 158A-165B | I will develop and use models that show the different ways that organisms interact in an ecosystem. | Producer  Consumer  Decomposer  Predator  Prey | Explore It!  What do some molds need to grow?  p. 158 |
| Lesson 3  How do ecosystems change?  TE p. 166A-173B | I will investigate how ecosystems change and will construct an argument based on evidence that supports that some animals and plants adapt to survive changes to their ecosystems. | Competition  Environment  Resources | My Planet Diary  Fun Fact  p. 166 |
| Lesson 4  How do humans impact ecosystems?  TE p. 174A-177B | I will define a problem relating to human impact on ecosystems and will analyze the consequences of how people can affect the environment. | Conservation  Non-native Species  Pollution | Explore It!  Which materials break down fastest in soil?  p. 174 |
| Chapter Wrap-Up  TE p. 178-189B |  |  | Investigate It! p. 178  What heats up air?  Guided Inquiry p. 179c  How can you use your own carbon dioxide to test what heats up air?  133B |
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| **Grade 5 Earth Science Chapter 5:** The Water Cycle and Weather **Big Question:** How does water move through the environment? **Reading Skill:** Draw Conclusions | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | Chapter 5 Opener  Waterfall Water Cycle! Untamed Science Video |  |  | Try It!  How can water move in the water cycle?  p. 198 | **5-ESS2-1** Create a model to describe how two of earth’s systems interact in a particular location.  **5-ESS2-2** Create a graph the represents the amount and percentage of water, or create a graph that represents the amount or percentage of fresh water on earth. |
| Lesson 1  What is the water cycle?  TE p. 204A-209B | I will model how water changes between solid, liquid, and gas states in the water cycle. | Condensation  Evaporation  Precipitation | My Planet Diary  Connections  p. 209A |
| Lesson 2  What are the spheres of earth?  TE p. 210A-215B | I will analyze data to investigate what makes up ach of earth’s spheres. | Atmosphere  Hydrosphere  Lithosphere | My Planet Diary  Fun Fact  p. 215A |
| Lesson 3  What is weather?  TE p. 216A-223B | I will analyze data and use evidence to identify the factors that determine weather. | Barometric Pressure  Humidity  Weather | Explore It!  How accurate are weather forecasts?  p. 216 |
| Lesson 4  How do clouds and precipitation form?  TE p. 224A-229B | I will classify precipitation and will investigate the relationship between precipitation and other weather conditions. | Hail  Precipitation  Sleet | Explore It!  Does a cloud form?  p. 224 |
| Lesson 5  What is climate?  TE p. 230A-235B | I will provide evidence to support that different climate zones have specific characteristics. | Climate  Elevation  Latitude | Explore It!  How does a thermometer work?  p. 230  133B |
| Lesson 6  What are erosion and deposition?  TE p.236A-241B | I will construct an evidence based argument that erosion and deposition can change earth’s surface. | Erosion  Deposition  Sand Dunes | Explore it!  How does melting ice cause erosion?  p. 236 |
| |  |  | | --- | --- | | 3 | 6 | | Chapter Wrap-up  TE p. 242-255b |  |  | Investigate it!  Where is the hurricane going?  p. 242  Guided Inquiry  How accurately can the path of a hurricane be predicted?  p. 243c |  |

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| **Grade 5 Earth Science Chapter 6:** Earth and Space **Big Question:** How do objects move in space? **Reading Skill:** Compare and Contrast | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | Chapter 6 Opener  Observing our planetary neighbors! Untamed Science Video |  |  | Try It!  What does a spiral galaxy look like from different angles?  p. 258 | **5-ESS1-1** Use a model to show that the sun appears brighter than other stars due to its relative closeness to earth.  **5-ESS1-2** Create and use graphical displays to reveal patterns that indicate relationships. |
| Lesson 1  How does earth move?  TE p. 264-269B | I will model how earth rotates and revolves. I will also use observations and evidence to communicate why the sun, moon, and stars appear to move across the sky. | Axis  Revolution  Rotation | Explore It!  How does sunlight strike Earth’s surface?  p. 264 |
| Lesson 2  What is a star?  TE p. 270A-275B | I will analyze the sun’s physical characteristics and will investigate why the star Polaris is important. | Constellation  Solar Flare  Sunspot | My Planet Diary  Misconception  p. 275A |
| Lesson 3  What are the inner planets  TE p. 276A-283B | I will use models to identify the outer planets, inner planets, and earth’s position in the solar system. I will also communicate how technology has helped people explore space. | Moon  Orbit  Planet | Explore It!  How does distance affect orbiting time?  p. 276 |
| Lesson 4  What are the outer planets?  TE p. 284A-289B | I will identify the outer planets and compare and contrast the characteristics of the outer planets and inner planets. | Neptune  Outer Planets  Saturn | Explore It!  How are the sizes of the inner and outer planets different?  p. 284 |
| Lesson 5  What are asteroids, meteors, comets, and moons?  TE p. 290A-295B | I will investigate the differences between moons, asteroids, comets, meteoroids, meteors, and meteorites. | Asteroid  Comet  Dwarf Planet | Explore It!  How does a meteoroid fall through Earth’s atmosphere?  p. 290  133B |
| |  |  | | --- | --- | | 3 | 6 | | Chapter Wrap-up  TE p. 296A-307B |  |  | Investigate it!  How can spinning affect the planet’s shape?  p. 296  Guided Inquiry  How does the speed that a planet spins affect its shape?  p. 297C |  |

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| **Grade 5 Science, Engineering, and Technology Skills Part 1:** The Nature of Science **Big Question:** What is Science **Reading Skill:** Text Features | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter Opener  How would you design this experiment? Untamed Science™ Video |  |  | Try It!  What questions do scientists ask?  p. 316 | **5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.  **5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.  **5-ETS1-1** Define a simple design reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. |
| Lesson 1 What do scientists do?  p. 322A-327B | I will investigate how scientist use inquiry to learn about the world around them. | Observation  Hypothesis | My Planet Diary  Fun Fact  p. 327A |
| Lesson 2 How do scientist investigate?  p. 328A-335B | I will analyze how scientists investigate problems in many different ways. | Models  Experiment  Control Group | Explore It!  Which method keeps bread freshest?  p. 328A |
| Lesson 3 How do scientist collect and interpret data?  p. 336A-343B | I will obtain information and interpret data using many different kinds of tools in a safe way. | Data  Precision  Accuracy | Explore It!  Why do scientist use thermometers?  p. 336 |
| Lesson 4 How do scientist support their conclusions?  p. 334A-347B | I will draw scientific conclusions and will support them using evidence. | Evidence  Inference  Procedures | Explore It!  Which towel absorbs the most water?  p. 344 |
| Chapter Wrap-Up  p. 348A-359B |  |  | Investigate It!  How does a banana slice change over time?  p. 349B  Guided Inquiry  What substance can help preserve a banana slice?  p. 349C |

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| **Grade 5 Science, Engineering, and Technology Skills Part 2:** Design and Function **Big Question:** How does technology affect our lives? **Reading Skill:** Main Idea and Details | | | | | |
| **Pacing** | **Lessons** | **I will know. . .** | **Vocabulary** | **Inquiry Activities** | **Performance Expectation** |
| |  |  | | --- | --- | | 90 minutes | 45 minutes | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 3 | 6 | | Chapter Opener  Mimicking Nature Untamed Science™ Video |  |  | Try It!  How can you design a strong glue?  p. 362 | **5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.  **5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.  **5-ETS1-1** Define a simple design reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. |
| Lesson 1 What is technology?  p. 368A-373B | I will analyze how technology solves problems and provide solutions. | Technology  Microchip  World Wide Web | Explore It!  Which transport system works best?  p. 368 |
| Lesson 2 How does technology mimic living things?  p. 374A-379B | I will investigate how technology can mimic the human muscular and skeletal systems. | Muscular system  Skeletal system  Prosthetic Limb | My Planet Diary  Did you know?  p. 379A |
| Lesson 3 What is the design process?  p. 380A-387B | I will define simple design problems and will design models using the design process. | Prototype  Design Process | Explore It!  How can the design on a model arm help you understand how your arm works?  p. 380 |
| Chapter Wrap-Up  p. 388A-397B |  |  | Investigate It!  How can you make and redesign a model of a robot arm?  p. 388  Guided Inquiry  How can you redesign your robotic arm to pick up heavier objects?  p. 389C |