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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** |
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 | Chapter 1 OpenerFeeling 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. | AtomAtomic Theory CompoundMolecule | My Planet DiaryFun 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. | MassTemperatureVolume | 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. | SolidGasLiquid | 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. | MixtureSolution | 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 ChangeChemical Change | Explore It!What happens when air heats up?  |
| Chapter Wrap-Up |  |  | Investigate It!What are some ways to separate a mixture?Guided InquiryHow 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** |
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 | Chapter 2 OpenerFun 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 ForceFriction | My Planet Diary Misconceptionsp. 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. | AccelerationInertiaUniform 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. | BalancedCombined ForceNet 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 ShadowWaves | Explore It! What can cause the size and shape of a shadow to change?p. 78 |
| Chapter Wrap-UpTE 82-93B |  |  | Investigate It! What forces affect the motion of a rocket?p. 82-83Guided InquiryHow 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** |
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 | Chapter 3 OpenerGive 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. | ExoskeletonSpiraclesStomata | My Planet Diary Connectionsp. 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 MutationSuccession | 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 SpeciesInstincts | 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 MetamorphosisMolt | Explore It! How do butterflies grow and change?p. 126 |
| Chapter Wrap-UpTE 132-141 |  |  | Investigate It! How do seeds grow?p. 132Guided InquiryHow 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** |
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 | Chapter 4 OpenerKeeping 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 RespirationEpidermis TissuePhotosynthesis | My Planet Diary Discoveryp. 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 ConsumerDecomposerPredator 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. | CompetitionEnvironmentResources | My Planet DiaryFun Factp. 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. | ConservationNon-native SpeciesPollution | Explore It! Which materials break down fastest in soil?p. 174 |
| Chapter Wrap-UpTE p. 178-189B |  |  | Investigate It! p. 178What heats up air?Guided Inquiry p. 179cHow 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** |
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 | Chapter 5 OpenerWaterfall 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. | CondensationEvaporationPrecipitation | My Planet Diary Connectionsp. 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. | AtmosphereHydrosphereLithosphere | My Planet DiaryFun Factp. 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 PressureHumidityWeather | 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. | HailPrecipitation Sleet | Explore It! Does a cloud form?p. 224 |
| Lesson 5What is climate?TE p. 230A-235B | I will provide evidence to support that different climate zones have specific characteristics. | ClimateElevationLatitude | Explore It! How does a thermometer work?p. 230133B |
| Lesson 6What are erosion and deposition?TE p.236A-241B | I will construct an evidence based argument that erosion and deposition can change earth’s surface. | ErosionDepositionSand Dunes | Explore it!How does melting ice cause erosion?p. 236 |
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 | Chapter Wrap-upTE p. 242-255b |  |  | Investigate it!Where is the hurricane going?p. 242Guided InquiryHow 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** |
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 | Chapter 6 OpenerObserving 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. | AxisRevolutionRotation | 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. | ConstellationSolar FlareSunspot | My Planet DiaryMisconceptionp. 275A |
| Lesson 3 What are the inner planetsTE 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. | MoonOrbitPlanet | 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. | NeptuneOuter PlanetsSaturn | Explore It! How are the sizes of the inner and outer planets different?p. 284 |
| Lesson 5What are asteroids, meteors, comets, and moons?TE p. 290A-295B | I will investigate the differences between moons, asteroids, comets, meteoroids, meteors, and meteorites. | AsteroidCometDwarf Planet | Explore It! How does a meteoroid fall through Earth’s atmosphere?p. 290133B |
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 | Chapter Wrap-upTE p. 296A-307B |  |  | Investigate it!How can spinning affect the planet’s shape?p. 296Guided InquiryHow 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** |
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 | Chapter OpenerHow 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. | ObservationHypothesis | My Planet DiaryFun Factp. 327A |
| Lesson 2 How do scientist investigate?p. 328A-335B | I will analyze how scientists investigate problems in many different ways. | ModelsExperimentControl 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. | DataPrecisionAccuracy | 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. | EvidenceInferenceProcedures | Explore It!Which towel absorbs the most water?p. 344  |
| Chapter Wrap-Upp. 348A-359B |  |  | Investigate It!How does a banana slice change over time?p. 349BGuided InquiryWhat 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** |
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 | Chapter OpenerMimicking 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. | TechnologyMicrochipWorld 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 systemSkeletal systemProsthetic Limb | My Planet DiaryDid 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. | PrototypeDesign Process | Explore It!How can the design on a model arm help you understand how your arm works?p. 380 |
| Chapter Wrap-Upp. 388A-397B |  |  | Investigate It!How can you make and redesign a model of a robot arm?p. 388Guided InquiryHow can you redesign your robotic arm to pick up heavier objects? p. 389C |