interactive SCIENCE

INDIANA

GRADE 4

STANDARDS AND CORRELATIONS GUIDE

READING STREET

Correlations and Resources to help you use Interactive Science with your Indiana Academic Standards and your reading program.

Pearson

interactive SCIENCE

Dear Indiana K-5 Educators,

With an ever-changing world and a competitive 21st century workforce, today's students need a solid K–12 education to be fully prepared for their futures. The Indiana Academic Standards for Science 2016 provide a strong framework for science education that improves student achievement through a focus on inquiry-based, hands-on science that emphasizes critical thinking, and options for personalized learning. By learning to think like scientists and engage in scientific practices, students will develop and apply the 21st century skills they'll need for success in college and careers.

To successfully implement these new standards, teachers need trusted instructional materials that match the scope and sequence expectations, as well as best-in-class professional development to help adapt to this shift in science education. Yet we understand the integral relationship your science instruction needs to have with literacy, so for every day, every lesson, and for every topic, ***Interactive Science*** will help you teach, practice, and apply all the expected reading, writing, speaking and listening, vocabulary, and media literacy skills students need to be successful and proficient learners.

To show you how Pearson's ***Interactive Science*** can be integrated into your classroom and curriculum alongside other programs and disciplines, we have created grade level Planning Guides, which correlate our science program to the new Indiana Academic Standards for Science 2016, and with reading programs you may already be utilizing. The end goal is to highlight thematic connections that exist between Interactive Science and the other programs in your classroom to help you plan and build your lessons effectively and efficiently.

For more detailed product information or to learn more, please visit PearsonSchool.com/in

Pearson

GRADE 4
TABLE OF CONTENTS

TEACHING THE INDIANA STANDARDS

GRADE 4

At Pearson, we appreciate how hard you work every single day to ensure the success of your students. We've created this Indiana Teaching Guide to help you reach that goal. In this guide, you will find resources for every Physical, Earth, Life, and Engineering Practices standard at your grade level and a helpful map for using Interactive Science with your school's reading program.

In the Indiana Standards Correlation Guide, you will find a wealth of reading, inquiry, and digital resources to teach every standard at your grade level. Use it like a menu to find the perfect resources to fit into your schedule.

In our Reading Program Guide, you can see how you can seamlessly fit the resources and themes of Interactive Science into your reading program to bring more high quality non-fiction reading practice into your reading block. Remember this will also save time by addressing science standards at the same time. We know that, with everything you do for your students, it's not easy to fit everything in to your day. With this guide, we hope that you'll be able to save time and bring the wonder and fascination of science to your students.

4.PS.1 Investigate transportation systems and devices that operate on or in land, water, air and space and recognize the forces (lift, drag, friction, thrust and gravity) that affect their motion.

Reading	Inquiry	Digital
Chapter 10: Motion Pg. 432-459 Reading Skill: Sequence Vocabulary: motion, reference point, force, gravity, speed, velocity Vocabulary Smart Cards: Pg. 453-454 Leveled Readers: B – Objects in Motion O – Learning About Motion A – Isaac Newton and Gravity Chapter Features: Go Green: A Trip Along the San Juan Skyway Pg. 459 STEM: SmartPlane Pg. 452 Social Studies and Language Arts Connections Handbook: MagLev Trains Case for Hybrid Cars	Try It Labs: How can you measure motion? Pg. 434 Explore It Labs: How can you change a marble's speed? Pg. 444 At Home Labs: On a Roll Pg. 446 Lightning Labs: The Wrecking Ball pg. 441 Investigate It Labs: Directed: How does friction effect motion? Pg. 450-451 Guided: How could you change the friction between an object and a ramp? TE Open: How can you further explore friction and motion? TE STEM: Let's Glide Away! STEM Handbook	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Match Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

4.PS.2 Investigate the relationship of the speed of an object to the energy of that object.		
Reading	**Inquiry**	**Digital**
Chapter 10: Motion Pg. 432-459 Reading Skill: Sequence Vocabulary: motion, reference point, force, gravity, speed, velocity Vocabulary Smart Cards: Pg. 453-454 Leveled Readers: B – Objects in Motion O – Learning About Motion A – Isaac Newton and Gravity Go Green Read Together: A Trip Along the San Juan Skyway Pg. 459 STEM Read Together: SmartPlane Pg. 452 ELA/Social Studies Connections Book: MagLev Trains Case for Hybrid Cars	Try It Labs: How can you measure motion? Pg. 434 Explore It Labs: How can you change a marble's speed? Pg. 444 At Home Labs: On a Roll Pg. 446 Lightning Labs: The Wrecking Ball Pg. 441 Investigate It Labs: Directed: How does friction effect motion? Pg. 450-451 Guided: How could you change the friction between an object and a ramp? TE Open: How can you further explore friction and motion? TE STEM: Let's Glide Away! STEM Handbook	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

4.PS.3 Investigate how multiple simple machines work together to perform everyday tasks.		
Reading	Inquiry	Digital
Leveled Readers: B – Simple Machines B – Simple Machines O – Using Simple Machines O – An Adventure with Simple Machines A – Simple Machines in Compound Machines	Inquiry Warm Up: Is it a machine? IN Guide Inclined Planes and Levers IN Guide Explore It: How does a lever work? IN Guide Open Inquiry: How can we explore simple machines further? IN Guide STEM Lab: Is your arm a simple machine? IN Guide	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

4.PS.4 Describe and investigate the different ways in which energy can be generated and/or converted from one form of energy to another form of energy.

Reading	Inquiry	Digital
Chapter 8: Energy and Heat Pg. 348-389 Chapter 9: Electricity and Magnetism Pg. 390-431 Reading Skill: Main Idea and Details Vocabulary: energy, kinetic energy, potential energy, sound, frequency, wavelength, pitch, volume, amplitude, refraction, absorption, reflection, conduction, convection, radiation Vocabulary Smart Cards: Pg. 381-384 Leveled Readers: B – Energy and Heat O – What is Light? A – Electricity's Power Science in Your Backyard: Sound and Temperature Pg. 380 Field Trip: Solar Cooking Pg. 389 Social Studies and Language Arts Connection Handbook: Case for Hybrid Cars	Try It Labs: What are some forms of energy? Pg. 350 Explore It Labs: What are some colors in white light? Pg. 366 How can heat move? Pg. 372 At Home Labs: Rainbows in Light Pg. 368 Heat on the move Pg. 374 Lightning Labs: Water Music Pg. 364 Go Green Labs: Energy Savers Pg. 367 Investigate It Labs: Directed – What material is the better heat conductor? Pg. 378-379 Guided: What material is the best insulator? TE Open: How could you further explore heat transfer? TE Apply It: Which is the best way to slow the rate at which ice melts? Teacher Program Guide STEM: How can you keep liquids warm or cold? STEM Handbook	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 BIG Question Writing seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.PS.5 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Reading	Inquiry	Digital
Chapter 8: Energy and Heat Pg. 348-389 Chapter 9: Electricity and Magnetism Pg. 390-431 Reading Skill: Main Idea and Details Vocabulary: energy, kinetic energy, potential energy, sound, frequency, wavelength, pitch, volume, amplitude, refraction, absorption, reflection, conduction, convection, radiation Vocabulary Smart Cards: Pg. 381-384 Leveled Readers: B – Energy and Heat O – What is Light? A – Electricity's Power Chapter Features: Science in Your Backyard: Sound and Temperature Pg. 380 Field Trip: Solar Cooking Pg. 389 Social Studies and Language Arts Connection Handbook: Case for Hybrid Cars	Try It Labs: What are some forms of energy? Pg. 350 Explore It Labs: What are some colors in white light? Pg. 366 How can heat move? Pg. 372 At Home Labs: Rainbows in Light Pg. 368 Heat on the move Pg. 374 Lightning Labs: Water Music Pg. 364 Go Green Labs: Energy Savers Pg. 367 Investigate It Labs: Directed – What material is the better heat conductor? Pg. 378-379 Guided: What material is the best insulator? TE Open: How could you further explore heat transfer? TE STEM: How can you keep liquids warm or cold? STEM Handbook	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.ESS.1 Investigate how the moon appears to move through the sky and it changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses.

Reading	Inquiry	Digital
Chapter 6: Earth and Space Pg. 254-295 Reading Skill: Cause and Effect Vocabulary: rotation, revolution, orbit, ellipse, constellation, eclipse, lunar eclipse, solar eclipse, solar system, planet, asteroid, comet Vocabulary Smart Cards: Pg. 287-290 Leveled Readers: B – Earth and Space O – Earth, Sun, and Stars A – An Eclipse Chapter Feature: Field Trip: Kitt Peak National Observatory Science in Your Backyard: Stargazing ELA/Social Studies Connection Handbook: Stories in the Sky Satellites Above Write a Summary: Moon Rocks	Try It Labs: What is one cause for the seasons? Pg. 256 Explore It Labs: What star patterns can you see? Pg. 266 Why is the new moon hard to see? Pg. 270 At Home Labs: Pictures in the Sky Pg. 268 Moon Phases Pg. 273 Lightning Labs: Make a Sundial Pg. 261 Go Green Labs: Solar Power Pg. 281 Investigate It: Directed: What is the shape of a planet's path? Pg. 284-285 Guided: What shapes do orbits of planets make? TE Open: Do all planets have orbits with the same elliptical shape? TE Apply It: How does the shape of the moon appear to change? IN Guide	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

4.ESS.2 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

Reading	Inquiry	Digital
Chapter 4: Ecosystems Pg. 138-191 Reading Skill: Main Idea and Details Vocabulary: Ecosystem, habitat, population, producer, consumer, herbivore, carnivore, decomposer, food chain, food web, competition, fossil, extinct, paleontologist Vocabulary Smart Cards: Pg. 183-187 Leveled Readers: B – Earth's Resources O – Ecosystem Life A – Mining for Rocks and Minerals Science Biography: Rachel Carson Pg. 182 Field Trip: Denver Zoo Pg. 191 ELA/Social Studies Connection Handbook: Our Communities Should Conserve Water	Try It Labs: How can you estimate how many animals live in an ecosystem? Pg. 139 How can you recycle some materials? IN Guide Explore It Labs: What do yeast use for energy? Pg. 148 How do food webs show connections? Pg. 154 What happens when one part of an ecosystem is removed? Pg. 162 How can you collect the sun's energy? IN Guide At Home Labs: Picture This! Pg. 146 For the Birds! Pg. 150 Decomposers Delight Pg. 157 Lightning Labs: Tell-Tale Footprints Pg. 173 Go Green Labs: The Recycling Plan Pg. 166 Fossil Fuel Use: Pg. 179 Investigate It Labs: Directed: How do earthworms meet their needs in a model of an ecosystem? Pg. 180-181 Guided: How might light affect the earthworms in a model ecosystem? TE Open: What other factors affect your ecosystem? TE STEM Handbook: Time to Clean Green! Natural Humidifier	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Science Song Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.ESS.3 Describe how geological forces change the shape of the land suddenly and over time.		
Reading	**Inquiry**	**Digital**
Chapter 6: Earth and Water Pg. 216-269 Reading Skill: Sequence Vocabulary: rock, mineral, igneous rock, metamorphic rock, sedimentary rock, soil, loam, landform, lava, weathering, erosion Vocabulary Smart Cards: Pg. 259-264 Leveled Readers: B – Grandpa's Rock Kit O – Minerals and Rocks A – Riches from our Earth	Try It Labs: How does water temperature affect evaporation? Pg. 218 Explore It Labs: How can you sort rocks? Pg. 232 What makes up soil? Pg. 238 How can water wear down a mountain? Pg. 250 At Home Labs: Landforms and Water Pg. 247 Lightning Labs: Rock Detective Pg. 236 Always Changing Pg. 252 Investigate It Labs: Directed: How can rocks crack? Pg. 194-195 Guided: How might thawing and freezing of water change a rock? TE Open: How can we further explore other effects of freezing and thawing? TE Apply It Labs: What effects how soil erodes? Teacher Program Guide	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.ESS.4 Develop solutions that could be implemented to reduce the impact of humans on the natural environment and the natural environment on humans.

Reading	Inquiry	Digital
Chapter 4: Ecosystems Pg. 138-191 Reading Skill: Main Idea and Details Vocabulary: Ecosystem, habitat, population, producer, consumer, herbivore, carnivore, decomposer, food chain, food web, competition, fossil, extinct, paleontologist Vocabulary Smart Cards: Pg. 183-187 Leveled Readers: B – Earth's Resources O – Ecosystem Life A – Mining for Rocks and Minerals Science Biography: Rachel Carson Pg. 182 Field Trip: Denver Zoo Pg. 191 ELA/Social Studies Connection Handbook: Our Communities Should Conserve Water	Try It Labs: How can you estimate how many animals live in an ecosystem? Pg. 139 How can you recycle some materials? IN Guide Explore It Labs: What do yeast use for energy? Pg. 148 How do food webs show connections? Pg. 154 What happens when one part of an ecosystem is removed? Pg. 162 How can you collect the sun's energy? IN Guide At Home Labs: Picture This! Pg. 146 For the Birds! Pg. 150 Decomposers Delight Pg. 157 Lightning Labs: Tell-Tale Footprints Pg. 173 Go Green Labs: The Recycling Plan Pg. 166 Fossil Fuel Use: Pg. 179 Investigate It Labs: Directed: How do earthworms meet their needs in a model of an ecosystem? Pg. 180-181 Guided: How might light affect the earthworms in a model ecosystem? TE Open: What other factors affect your ecosystem? TE STEM Handbook: Time to Clean Green! Natural Humidifier	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.LS.1 Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.

Reading	Inquiry	Digital
Chapter 4: Plants and Animals Pg. 80-137 Reading Skill: Text Features Vocabulary: classify, vertebrates, invertebrates, sepal, pistil, stamen, pollination, fertilization, germinate, photosynthesis, chlorophyll, adaptations, characteristics, inherit, advantage, stimulus, instinct Vocabulary Smart Cards: Pg. 127-132 Leveled Readers: B – Plants and Animals O – Plant and Animal Classification A – Strange Plants Careers Spotlight: Wildlife Biologist Pg. 126 STEM: Plant Engineering Pg. 137 Social Studies and Language Arts Connections Handbook: Carolus Linnaeus's Clever System The World of Carnivorous Plants Jet-Propelled Mollusks Animal Adaptations Alien Invaders	Try It Labs: How can flower parts be classified? Pg. 82 Explore It Labs: What are some ways to classify animals? Pg. 84 How can plants react to light? Pg. 100 How can some fish float? Pg. 106 How can some characteristics be affected by the environment? Pg. 112 At Home Labs: Cactus-Stem Model Pg. 110 Migrating Animals Pg. 121 Lightning Labs: Designer Seeds Pg. 98 Leaves and Light Pg. 103 Dimpled Cheeks Pg. 116 Go Green Labs: Investigate Plants Pg. 86 Investigate It Labs: Directed: What is inside an owl pellet? Pg. 124-125 Guided: What prey does an owl eat? TE Open: How can owl pellets help you further explore an ecosystem? TE STEM: Home Sweet Home! STEM Handbook Apply It Labs: Do mealworms prefer damp or dry places? TE	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Science Song Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

4.LS.2 Use evidence to support the explanation that a change in the environment may result in a plant or animal will survive and reproduce, move to a new location, or die.

Reading	Inquiry	Digital
Chapter 4: Plants and Animals Pg. 80-137 Reading Skill: Text Features Vocabulary: classify, vertebrates, invertebrates, sepal, pistil, stamen, pollination, fertilization, germinate, photosynthesis, chlorophyll, adaptations, characteristics, inherit, advantage, stimulus, instinct Vocabulary Smart Cards: Pg. 127-132 Leveled Readers: B – Plants and Animals O – Plant and Animal Classification A – Strange Plants Career Spotlight: Wildlife Biologist Pg. 126 STEM: Plant Engineering Pg. 137 Social Studies and Language Arts Connections Handbook: Carolus Linnaeus's Clever System The World of Carnivorous Plants Jet-Propelled Mollusks Animal Adaptations Alien Invaders	Try It Labs: How can flower parts be classified? Pg. 82 Explore It Labs: What are some ways to classify animals? Pg. 84 How can plants react to light? Pg. 100 How can some fish float? Pg. 106 How can some characteristics be affected by the environment? Pg. 112 At Home Labs: Cactus-Stem Model Pg. 110 Migrating Animals Pg. 121 Lightning Labs: Designer Seeds Pg. 98 Leaves and Light Pg. 103 Dimpled Cheeks Pg. 116 Go Green Labs: Investigate Plants Pg. 86 Investigate It Labs: Directed: What is inside an owl pellet? Pg. 124-125 Guided: What prey does an owl eat? TE Open: How can owl pellets help you further explore an ecosystem? TE STEM: Home Sweet Home! STEM Handbook Apply It Labs: Do mealworms prefer damp or dry places? TE	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Science Song: Matter of Lemonade Investigate It Virtual Lab: How are objects different? My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY
Items in RED directly address the standard
Items in BLACK support the standard

4.LS.3 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems.

Reading	Inquiry	Digital
Chapter 4: Plants and Animals Pg. 80-137 Reading Skill: Text Features Vocabulary: classify, vertebrates, invertebrates, sepal, pistil, stamen, pollination, fertilization, germinate, photosynthesis, chlorophyll, adaptations, characteristics, inherit, advantage, stimulus, instinct Vocabulary Smart Cards: Pg. 127-132 Leveled Readers: B – Plants and Animals O – Plant and Animal Classification A – Strange Plants Career Spotlight: Wildlife Biologist Pg. 126 STEM: Plant Engineering Pg. 137 Social Studies and Language Arts Connections Handbook: Carolus Linnaeus's Clever System The World of Carnivorous Plants Jet-Propelled Mollusks Animal Adaptations Alien Invaders	Try It Labs: How can flower parts be classified? Pg. 82 Explore It Labs: What are some ways to classify animals? Pg. 84 How can plants react to light? Pg. 100 How can some fish float? Pg. 106 How can some characteristics be affected by the environment? Pg. 112 At Home Labs: Cactus-Stem Model Pg. 110 Migrating Animals Pg. 121 Lightning Labs: Designer Seeds Pg. 98 Leaves and Light Pg. 103 Dimpled Cheeks Pg. 116 Go Green Labs: Investigate Plants Pg. 86 Investigate It Labs: Directed: What is inside an owl pellet? Pg. 124-125 Guided: What prey does an owl eat? TE Open: How can owl pellets help you further explore an ecosystem? TE STEM: Home Sweet Home! STEM Handbook Apply It Labs: Do mealworms prefer damp or dry places? TE	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.		
Reading	Inquiry	Digital
Chapter 2: Technology and Design Pg. 44-72 Reading Skill: Cause and Effect Vocabulary: technology, design, prototype Vocabulary Smart Cards: Pg. 65-66 Leveled Readers: B- Technology and Design O – Technology and Design at Work A – Using Nature of Design Chapter Feature: STEM: Submersibles Pg. 64 Going Green: Green Transportation Pg. 71	Try It Labs: How can you design a hovercraft? Pg. 46 Explore It Labs: How can the design of a model help you learn about the real thing? Pg. 54 At Home Labs: Kitchen Technology Pg. 52 Go Green Labs: Pollution Pg. 60 Investigate It Labs: Directed: Which boat design will hold more cargo? Pg. 62-63 Guided: Which boat hull shape holds more cargo? TE Open: How can you further explore boat hull design and buoyancy? TE Design It Labs: What design will carry the most cargo? Pg. 72-77 STEM: Bridge the Gap STEM Handbook *Also within STEM strand of all other 4th grade standards	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.		
Reading	Inquiry	Digital
Chapter 2: Technology and Design Pg. 44-72 Reading Skill: Cause and Effect Vocabulary: technology, design, prototype Vocabulary Smart Cards: Pg. 65-66 Leveled Readers: B- Technology and Design O – Technology and Design at Work A – Using Nature of Design Chapter Feature: STEM: Submersibles Pg. 64 Going Green: Green Transportation Pg. 71	Try It Labs: How can you design a hovercraft? Pg. 46 Explore It Labs: How can the design of a model help you learn about the real thing? Pg. 54 At Home Labs: Kitchen Technology Pg. 52 Go Green Labs: Pollution Pg. 60 Investigate It Labs: Directed: Which boat design will hold more cargo? Pg. 62-63 Guided: Which boat hull shape holds more cargo? TE Open: How can you further explore boat hull design and buoyancy? TE Design It Labs: What design will carry the most cargo? Pg. 72-77 STEM: Bridge the Gap STEM Handbook *Also within STEM strand of all other 4th grade standards	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		
Reading	**Inquiry**	**Digital**
Chapter 2: Technology and Design Pg. 44-72 Reading Skill: Cause and Effect Vocabulary: technology, design, prototype Vocabulary Smart Cards: Pg. 65-66 Leveled Readers: B- Technology and Design O – Technology and Design at Work A – Using Nature of Design Chapter Feature: STEM: Submersibles Pg. 64 Going Green: Green Transportation Pg. 71	Try It Lab:s How can you design a hovercraft? Pg. 46 Explore It Labs: How can the design of a model help you learn about the real thing? Pg. 54 At Home Labs: Kitchen Technology Pg. 52 Go Green Labs: Pollution Pg. 60 Investigate It Labs: Directed: Which boat design will hold more cargo? Pg. 62-63 Guided: Which boat hull shape holds more cargo? TE Open: How can you further explore boat hull design and buoyancy? TE Design It Labs: What design will carry the most cargo? Pg. 72-77 STEM: Bridge the Gap STEM Handbook *Also within STEM strand of all other 4th grade standards	Chapter Level Digital: Untamed Science Video Parts 1 & 2 Digital Vocabulary Smart Card Vocabulary Memory Math Investigate It Virtual Lab My Reading Web: Digital Leveled Readers BIG Question Writing Lesson Level Digital: My Planet Diary Web Link or Explore It Virtual Lab enVision It Learning Activity I Will Know Activity Got it! In 60 seconds Video Writing in Science Activity Got it! Digital Quiz

KEY

Items in RED directly address the standard

Items in BLACK support the standard

	WEEK 1	WEEK 2	WEEK 3
Benchmark *Literacy* UNIT 6	*Chloe's Friend*	*How the Kangaroo Got Its Pouch*	*Why Coyote Stopped Imitating His Friends*
	Amazing Fish	Why the Fly Bites the Moose	
Pearson Interactive Science	Technology and Design pages 44-78 Earth and Space pages 254-300 Electricity and Magnetism pages 390-431	Technology and Design pages 44-78 Earth and Space pages 254-300 Electricity and Magnetism pages 390-431	Technology and Design pages 44-78 Earth and Space pages 254-300 Electricity and Magnetism pages 390-431
Reading Strategies	Make Connections	Make Connections	Make Connections
Reading Skills	Identify Cause & Effect	Identify Cause & Effect	Identify Cause & Effect
ScienceTarget Reading Skills	Cause and Effect	Cause and Effect	Cause and Effect
Indiana Literacy Standard	4.RN.2.3	4.RN.2.3	4.RN.2.3

	WEEK 1	WEEK 2	WEEK 3
Benchmark *Literacy* UNIT 7	*Making Movies*	*The Dragon and the Prince*	*The Gingerbread Boy Uptown*
	Danger on a Mountain	The Raccoon-Dog	
Pearson Interactive Science	Earth's Resources pages 198-253	Earth's Resources pages 198-253	Earth's Resources pages 198-253
Reading Strategies	Make Inferences	Make Inferences	Make Inferences
Reading Skills	Draw Conclusions	Draw Conclusions	Draw Conclusions
ScienceTarget Reading Skills	Draw Conclusions	Draw Conclusions	Draw Conclusions
Indiana Literacy Standard	4.RN.2.1	4.RN.2.1	4.RN.2.1

	WEEK 1	WEEK 2	WEEK 3
Benchmark *Literacy* UNIT 8	*Spider and Sun*	*Febold Feboldson*	*Pecos Bill and Sluefoot Sue*
	Mushrooms	Mighty Joe Magarac	
Pearson Interactive Science	Plants and Animals pages 80-137	Social Studies Connection	Social Studies Connection
Reading Strategies	Summarize & Synthesize	Summarize & Synthesize	Summarize & Synthesize
Reading Skills	Evaluate Author's Purpose	Evaluate Author's Purpose	Evaluate Author's Purpose
ScienceTarget Reading Skills	Text Features		
Indiana Literacy Standard	4.RN.3.1		

	WEEK 1	WEEK 2	WEEK 3
Benchmark *Literacy* UNIT 9	*Express Yourself*	*Volunteer*	*Battle for the Ballot*
	Ben Franklin	My Plea Against School Uniforms	
Pearson Interactive Science	Social Studies Connection	Social Studies Connection	Social Studies Connection
Reading Strategies	Make Connections	Make Connections	Make Connections
Reading Skills	Distinguish & Evaluate Fact & Opinion	Distinguish & Evaluate Fact & Opinion	Distinguish & Evaluate Fact & Opinion
ScienceTarget Reading Skills			
Indiana Literacy Standard			

	WEEK 1	WEEK 2	WEEK 3
Benchmark *Literacy* UNIT 10	*Necessary Laws?*	*Wolf and Crane*	*A Sheep in Wolf's Clothing*
	Paper, Plastic, or Bags	The Plain Duck and the Swan	
Pearson Interactive Science	Ecosystems pages 138-196	Plants and Animals pages 80-137	
Reading Strategies	Ask Questions	Ask Questions	Ask Questions
Reading Skills	Make Judgments	Make Judgments	Make Judgments
ScienceTarget Reading Skills	Main Idea and Details	Text Features	
Indiana Literacy Standard	4.RN.2.2	4.RN.3.1	

KEY

Target Reading Connection

Science Connection

Name _____ Date _____ Class _____

Inquiry Warm-Up 20 min

Is It a Machine?

Machines are devices that allow you to do work in an easier way. Machines can be very simple or very complicated devices. In this activity, you will examine a variety of objects and decide which are machines.

INQUIRY FOCUS **Form an Operational Definition**

Procedure

1. Examine the objects that your teacher gives your group.
2. Sort the objects into those that are machines and those that are not machines.
3. Determine how each object you classified as a machine functions. Explain each object to another student in your group.

Materials

a variety of objects supplied by your teacher or found around the classroom

Think It Over

1. Why did you decide that certain objects were machines while others were not?

_____

_____

_____

_____

2. Choose three of the machines you identified. For each of the three, name what type of simple machine it is and explain how it makes a job easier.

_____

_____

_____

_____

_____

_____

Inquiry **STEM Activity**

Is Your Arm a Simple Machine?

The structure of our bodies allow us to do work. Our arms, for example, are levers. A lever is a simple machine that uses a bar that moves around a fulcrum, or pivot point, to do work. The fulcrum in your arm is the elbow, the place where your arm bones meet. Muscles pull on the bones to bend, straighten, and rotate the arm at this joint. Engineers that make artificial arms must understand how the arm works.

To explain sports safety to your school's teams, the physical education teacher has asked you to design a model of an artificial arm and describe how it functions as a system of levers.

Identify the Problem

☑ **1.** What problem will your model help solve? _____

_____

_____

☑ **2.** Why is there a need to solve this problem? _____

_____

_____

Do Research

Examine diagrams of a human arm in the bent and straightened positions.

☑ **3.** With your elbow resting on a solid surface such as your desk or a table, pick up a weight. Bend and straighten your arm again. Feel the muscles as you bend your arm. **Describe** how your muscles work as you bend your arm. _____

_____

_____

_____

4. **Examine** the diagrams of different classes of levers. **Describe** how your arm is like different levers as it bends and straightens.

_____

_____

_____

Go to the materials station(s). **Examine** the materials, and think about how each one may or may not be useful in building a model of an artificial arm. Leave the materials where they are.

5. What are your design constraints? _____

_____

_____

Develop Possible Solutions

6. **Describe** two different ways you could combine some of the materials to solve the problem.

_____

_____

_____

Choose One Solution

7. **Draw** your model arm and **describe** how you will build it.

_____

_____

_____

8. **List** the material(s) you will use for your model arm. _____

_____

_____

Design and Construct a Prototype

Gather the materials you need for your model arm and a metric ruler. **Build** your model of an artificial arm.

9. Use the metric ruler to **measure** the lengths of the materials you are using in your design. **Round** your measurements to the nearest centimeter. **Record** your measurements. ____

_____

_____

_____

Test the Prototype

Test your design. Bend and straighten your model arm. **Observe** the ways it moves like a human arm and the ways it does not.

Communicate Results

10. How closely does your model arm move like a human arm? **Describe** your results, and then share them with your classmates. _____

_____

_____

_____

_____

_____

Evaluate and Redesign

11. What changes could you make to your model to make it move more like a human arm?

_____

_____

_____

12. What features of an artificial limb do you think would be most useful to people who have one?

_____

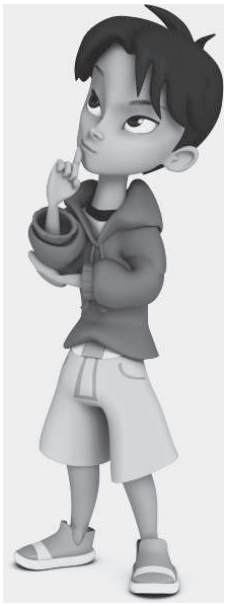
_____

_____

_____

_____

_____



Name _____ Date _____ Class _____

Inquiry Warm-Up 15 min

Inclined Planes and Levers

Inclined planes and some levers are simple machines that reduce input force by spreading that force out over a greater distance. An example of an inclined plane is a handicap access ramp. An example of a lever is a hockey stick.

INQUIRY FOCUS Observe

Procedure

Materials

- ruler
- pencil
- 0.5-kg weight
- spring scale
- loop of string, 6 cm in diameter
- marker
- masking tape

1. Use the spring scale to lift the weight. Record the amount of force required. _____
2. Use masking tape to label the ends of the ruler "A" and "B."
3. Place a pencil along the edge of a table. Place a ruler on the pencil at a right angle to it. Center the ruler on the pencil so side A is over the table and side B extends off the table. Place the 0.5-kg weight on side A about halfway between the pencil and the ruler end.
4. Hang the loop of string over the end of side B. Pull down on the string with the spring scale until the weight just lifts up off the table. Note the force required. Move the loop and repeat at several positions along that part of the ruler.
5. Now place end A on the pencil and hold it there. Put the string loop at end B. Place the weight close to end B. Use the spring scale to lift end B. Note the force required. Repeat several times, moving the weight closer to the pencil each time.

Think It Over

1. How did the amount of force needed to lift the weight in Step 4 compare to what you measured in Step 1? How did the force change at the different locations?

_____

_____

2. Suppose a person in a wheelchair needs to get from ground level to a platform raised about .33 m. Think about the force required to lift the wheelchair straight up from the ground. Compare that to the force required to push the wheelchair up a long ramp. Which method do you think would require less force? In what way is an inclined plane similar to levers you explored in this activity?

_____

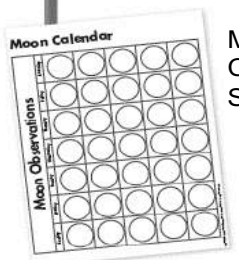
_____

Name _____ Date _____

Inquiry Explore It!

How does the shape of the moon appear to change?

Materials



Moon Calendar Sheet

marker

- ☑ **1.** Use a Moon Calendar.
- ☑ **2.** Observe the moon every night.
- ☑ **3.** **Record data** by drawing pictures on the calendar.

Explain Your Results

4. Communicate Describe how the moon appears to change.

Think about what you know about the moon. Why does the shape of the moon look different on different days of the month?

Inquiry Try It!

How can you recycle some materials?

Recycle, reuse, and reduce to save resources.

- ☐ **1. Observe** the materials.
- ☐ **2.** Brainstorm inventions you could make from the materials.

.....

.....

.....

- ☐ **3.** Select one invention to make from the materials.
- ☐ **4. Make a model** by drawing a diagram of your invention.

- ☐ **5. Communicate** Share what your invention does.

Materials


tape


milk carton
scissors

black pen

glue

plastic bottles


Inquiry Skill
You can **make a model** to illustrate your ideas.

Explain Your Results

6. UNLOCK THE BIG ? **Communicate** Describe how your invention uses recycled materials to save resources.

.....

.....

.....

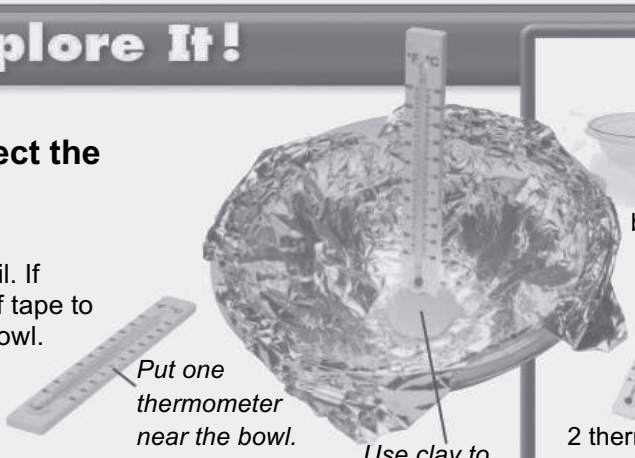
Name _____ Date _____

Chapter 5
Lesson 3

Inquiry Explore It!

How can you collect the sun's energy?

- [ ] **1.** Line the bowl with foil. If needed, use loops of tape to hold the foil on the bowl.
- [ ] **2.** Tilt the bowl so the sun shines into it. Use clay to hold the bowl in place.
- [ ] **3.** **Measure** and **record** the temperatures at the start, after 1 minute, and after 3 minutes.



Materials

Explain Your Results

4. Compare the effects of sunlight on the 2 thermometers.

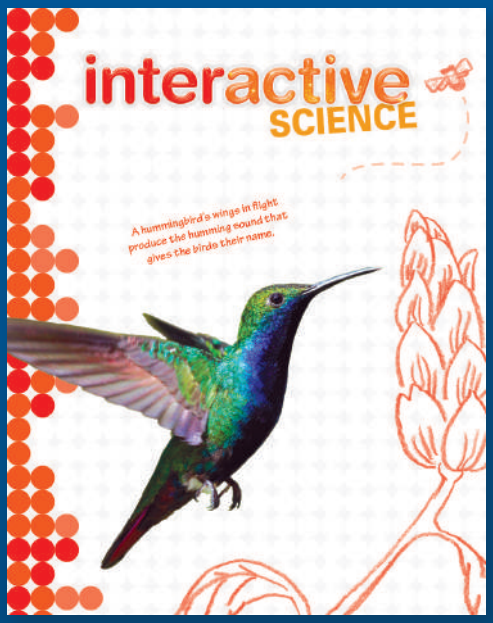
5. Infer What made the temperatures different?

Data Table		
Time	**Temperature** (°C)	
	Near Bowl	**In Bowl**
At start		
After 1 min		
After 3 min		

What did this activity help you learn about collecting the sun's energy?

interactive SCIENCE

INDIANA



JASON VENTURI
Account General Manager
jason.venturi1@pearson.com

OBIE MARTIN
Indiana State
K-12 Specialist
obie.martin@pearson.com

615W2120

Pearson

PearsonSchool.com
800-848-9500