CORRELATION

Arizona Science Standards

Kindergarten –First Grade – Second Grade

Correlated to

Waterford Early Math & Science Program

Level 1 – Level 2 – Level 3

Correlation Results

Kindergarten	91%
First Grade	94%
Second Grade	76 %

87%

PEARSON Digital Learning

Waterford Early Math & Science™

CORRELATION

Arizona Science Standards
Kindergarten – First – Second Grades

Waterford Early Math & Science Program
Level One – Level Two – Level Three

Introduction

Waterford Early Math & Science's three levels are designed to provide a full year of daily instruction. Students receive daily instruction from all four instructional strands: Daily Activities, Number Sense, Abstract Math and Reasoning, and Science Concepts.

Based on five years of research into how children learn math, the developers of Waterford Early Math & Science concluded that the key to a successful math program is a balance between a conceptual approach and one that stresses basic skills. Waterford researchers examined current science practices and theories and reviewed national standards to design a full, research-based curriculum encompassing state core guidelines as well as those recommended by the National Science Education Standards (NSES) and the National Teachers of Mathematics (NCTM).

A complete list of lesson objectives can be found at the end of this correlation.

Correlation Results

Total 87%

Kindergarten	91%
First Grade	94%
Second Grade	76 %

Each level includes four essential components:

- **Yearlong on-line curriculum.** A full year of daily research-based instruction.
- **Teacher Materials.** Teacher guides, songbook, masters, worksheets, and multimedia materials to aid teachers in delivering a comprehensive Mathematics and Science curriculum.
- **Student materials.** Personal sets of books covering numbers, math concepts and science. Music videos and experiment videos.
- **Teacher training.** Ongoing support for teachers in using each Waterford component to create a balanced curriculum.

Correlation Keys

This document correlates Levels One, Two, and Three of the Waterford Early Math & Science Program with the Arizona Science Standards for kindergarten through second grade.

The correlation chart uses two columns:

Match Column: A star (✪) in this column indicates a positive correlation between the Waterford program and the Arizona Science standard.

Key Activities Column: This column identifies key activities from the Waterford on- and off-line curriculum that support each content standard. "Guide" refers to the Waterford Teacher Guide resources.

Guide Book 1 – *Overview*
Guide Book 2 – *Math Lessons & Resources*
Guide Book 3 – *Science Lessons & Resources*
Guide Book 4 – *Masters & Worksheets*
Guide Book 5 – *Song Book*

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Strand 1: Inquiry Process

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.		
Concept 1: Observations, Questions, and Hypotheses Observe, ask questions, and make predictions.		
PO 1. Observe common objects using multiple senses.	✪	***Nearly every science lesson within Waterford Early Math & Science will meet this standard; however, a few examples are listed below.*** **Senses: Hear** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 20-23; **Senses: See** (Song; Instruction/Practice; Book-I Wish I had ears like a Bat; Review; Assessment); Guide Book 3 pg. 16-19; Senses: Smell (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 28-31; **Senses: Taste** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 32-35; **Senses: Touch** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 24-27; Guide Book 4 (Newsletter-The World Around Me); **Science Investigation** (Song; Instruction/Practice; Assessment; Certificate); Guide Book 3 p. 12-15; **Jane Goodall** (Song; Book-I Want to be a Scientist Like Jane Goodall); Guide Book 3 p. 10-11; Student Materials (Book: I Want to be a Scientist Like Jane Goodall); **George Washington Carver** (Book-I Want to be a Scientist Like George Washington Carver); Guide Book 3 p. 36-37; Guide Book 4 (Newsletter-The World Around Me); Student Materials (Book: I Want to be a Scientist Like George Washington Carver); **Wilbur and Orville Wright** (Book-I Want to Be a Scientist Like Orville and Wilbur Wright); Guide Book 3 p. 158-159; Student Materials (Book: I Want to Be a Scientist Like Orville and Wilbur Wright); Student Materials (Videos) and all on-line and off-line activities support students in developing and expanding their knowledge and use of scientific inquiry.
PO 2. Ask questions based on experiences with objects, organisms, and events in the environment. (See M00-S2C1-01)	✪	***Nearly every science lesson within Waterford Early Math & Science will meet this standard; however, one example is listed below.*** **Science Investigation** (Song; Instruction/Practice; Assessment; Certificate); Guide Book 3 p. 12-15

Strand 1: Inquiry Process

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
PO 3. Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., the five senses, changes in weather).	✪	**Senses: Hear** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 20-23; **Senses: See** (Song; Instruction/Practice; Book-I Wish I had ears like a Bat; Review; Assessment); Guide Book 3 pg. 16-19; Senses: Smell (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 28-31; **Senses: Taste** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 32-35; **Senses: Touch** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 24-27; Guide Book 4 (Newsletter-The World Around Me); **Temperature** (Instruction/Practice; Review: Celsius; Review: Fahrenheit; Assessment: Celsius; Assessment: Fahrenheit; Certificate); Guide Book 3 p. 114-117; Guide Book 4 (Newsletter-The Weather Around Us); **Clouds** (Song: Precipitation - Rain or Snow; Instruction/Practice; Review; Assessment); Guide Book 3 p. 110-113; Guide Book 4 (Newsletter-The Weather Around Us)
Concept 2: Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.		
PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	✪	In Guide Book 3 off-line activities include student participation in Classroom Activities where safety should always be stressed; Student Materials (I Can Do Science video)
PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.	✪	All lessons guide students through the investigation process with life, physical and Earth and space sciences.
PO 3. Perform simple measurements using non-standard units of measure to collect data.	✪	**Length: Nonstandard Units** (Instruction; Extension; Story Problem Strategies; Extended Practice; Assessment/Review); Guide Book 2 p. 158-161; Guide Book 4 (Worksheet p. 42);

Strand 1: Inquiry Process

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.		
PO 1. Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics. (See M00-S4C4-01 and M00-S4C4-03)	✪	**Venn Diagrams** (Song; Instruction; Extension; Book; Extended Practice; Assessment/Review); Guide Book 2 p. 174-177; Guide Book 4 (Worksheet p. 46); **Sorting** (Song; Instruction; Practice; Book-Buttons, Buttons; Assessment; Certificate); Guide Book 2 p. 30-33; Guide Book 4 (Newsletter-Sorting); Student Materials (Book: Buttons, Buttons); **Amphibians** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 74-77; **Birds** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 66-69; **Fish** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 70-73; **Insects** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 86-89; **Invertebrates** (Song; Book-Creepy Crawlers; Instruction/Practice; Certificate); Guide Book 3 pg. 98-101; Guide Book 4 (Newsletter-Invertebrates); **Mammals** (Song; Instruction/Practice; Book-Guess What I Am; Review; Assessment); Guide Book 3 pg. 62-65; **Plants** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 54-57; **Reptiles** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 78-81; Guide Book 4 (Newsletter-Vertebrates); **Spiders** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 90-93; **Vertebrates** (Song; Instruction/Practice); Guide Book 3 pg. 82-85; Guide Book 4 (Newsletter-Vertebrates); **Worms** (Song; Instruction /Practice; Review; Assessment); Guide Book 3 pg. 94-97)
PO 2. Compare objects according to their measurable characteristics (e.g., longer/shorter, lighter/heavier). (See M00-S4C4-01)	✪	**Measurement - Capacity** (Song; Introduction; Practice; Assessment; Certificate); Guide Book 2 pg. 174-177; **Measurement - Length** (Song; Instruction/Practice; Assessment; Certificate); Guide Book 2 pg. 170-173; Guide Book 4 (Newsletter-Measurement); **Heavy and Light** (Song; Introduction; Instruction; Practice/Assessment; Application); Guide Book 2 pg. 110-113; **Big and Little** (Song; Introduction; Instruction; Practice/Assessment); Guide Book 2 p. 102-105; Guide Book 4 (Newsletter-Size); **Tall and Short** (Song; Introduction; Instruction; Practice/Assessment); Guide Book 2 p. 106-109; Guide Book 4 (Newsletter-Size);

Strand 1: Inquiry Process

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Concept 4: Communication Communicate results of investigations.		
PO 1. Communicate observations with pictographs, pictures, models, and/or words. (See M00-S2C1-02)	✪	*Models:* **Push and Pull** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 164-167; **Rainforest** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 146-149; **Ocean** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 138-141; **Desert** (Song; Instruction/Practice; Book-Where in the World Would You Go Today?; Review; Assessment); Guide Book 3 pg. 134-137; **Mountain** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 142-145; **Constellations** (Instruction/Practice; Book-Star Pictures; Review; Assessment; Certificate); Guide Book 3 pg. 106-109; **Summer** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 130-133; **Spring** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 126-129; **Winter** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 122-125; **Fall** (Song; Instruction/Practice; Book-That's What I Like; Review; Assessment); Guide Book 3 pg. 118-121
PO 2. Communicate with other groups to describe the results of an investigation. (See LS-R3 and LS-R5)	✪	All lessons within Guide Book 3 provide students with a guided opportunity to communication their finding within each investigation in a section titled "*What to Ask.*"

Strand 2: History and Nature of Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.		
Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.		
PO 1. Give examples of how diverse people (e.g., children, parents, weather reporters, cooks, healthcare workers, gardeners) use science in daily life.	✪	As students experience each lesson within the *Waterford Early Math & Science Program*, they are exposed to a variety of people and how they use science. One specific lesson does not teach how science is used in daily life; it is through multiple experiences they gain this knowledge.
PO 2. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Jane Goodall [scientist], supports Strand 4; Louis Braille [inventor], supports Strand 4).	✪	**Jane Goodall** (Song; Book-I Want to be a Scientist Like Jane Goodall); Guide Book 3 p. 10-11; Student Materials (Book: I Want to be a Scientist Like Jane Goodall); **George Washington Carver** (Book-I Want to be a Scientist Like George Washington Carver); Guide Book 3 p. 36-37; Guide Book 4 (Newsletter-The World Around Me); Student Materials (Book: I Want to be a Scientist Like George Washington Carver); **Wilbur and Orville Wright** (Book-I Want to Be a Scientist Like Orville and Wilbur Wright); Guide Book 3 p. 158-159; Student Materials (Book: I Want to Be a Scientist Like Orville and Wilbur Wright); Student Materials (Videos)
Concept 2: Nature of Scientific Knowledge Understand how science is a process for generating knowledge.		
No performance objectives at this grade level	NA	

Strand 3: Science in Personal and Social Perspectives

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	***Key Activities***
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.		
Concept 1: Changes in Environments Describe the interactions between human populations, natural hazards, and the environment.		
No performance objectives at this grade level	NA	
Concept 2: Science and Technology in Society Understand the impact of technology.		
PO 1. Describe how simple tools (e.g., scissors, pencils, paper clips, hammers) can make tasks easier.	✪	Many lessons in Guide Book 3 encourage the use of tools as students observe and/or measure. Each lesson has a "*What You Need"* section that identified the materials need for each activity. **Measurement - Capacity** (Song; Introduction; Practice; Assessment; Certificate); Guide Book 2 pg. 174-177; **Measurement - Length** (Song; Instruction/Practice; Assessment; Certificate); Guide Book 2 pg. 170-173; Guide Book 4 (Newsletter-Measurement); **Temperature** (Instruction/Practice; Review: Celsius; Review: Fahrenheit; Assessment: Celsius; Assessment: Fahrenheit; Certificate); Guide Book 3 pg. 114-117

Strand 4: Life Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.		
Concept 1: Characteristics of Organisms Understand that basic structures in plants and animals serve a function.		
PO 1. Distinguish between living things and nonliving things.	✪	**Living and Nonliving** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 38-41; Guide Book 4 (Newsletter-Living Things); **Amphibians** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 74-77; **Birds** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 66-69; **Fish** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 70-73; **Insects** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 86-89; **Invertebrates** (Song; Book-Creepy Crawlers; Instruction/Practice; Certificate); Guide Book 3 pg. 98-101; Guide Book 4 (Newsletter-Invertebrates); **Mammals** (Song; Instruction/Practice; Book-Guess What I Am; Review; Assessment); Guide Book 3 pg. 62-65; Plants (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 54-57; **Reptiles** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 78-81; Guide Book 4 (Newsletter-Vertebrates); **Spiders** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 pg. 90-93; **Vertebrates** (Song; Instruction/Practice); Guide Book 3 pg. 82-85; Guide Book 4 (Newsletter-Vertebrates); **Worms** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 94-97; **Animal or Plant** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 42-45; Guide Book 4 (Newsletter-Living Things); **Plants** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 54-57; Guide Book 4 (Newsletter-Green and Growing)

Strand 4: Life Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	***Key Activities***
PO 2. Name the following human body parts: (See 1CH-R3-01) head shoulders arms elbows wrists hands fingers legs hips knees ankles feet heels toes		
PO 3. Identify the five senses and their related body parts: • sight – eyes • hearing – ears • smell – nose • taste – tongue • touch – skin	✪	The *Waterford Early Math & Science Program* teaches about the five senses and locates with illustrations and video clips, the eyes, ears, mouth, nose, and hands, and identifies their functions. **Senses: Hear** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 20-23; **Senses: See** (Song; Instruction/Practice; Book-I Wish I had ears like a Bat; Review; Assessment); Guide Book 3 pg. 16-19; **Senses: Smell** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 28-31; **Senses: Taste** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 32-35; Senses: Touch (Song; Instruction/Practice; Review; Assessment); Guide Book 3 pg. 24-27; Guide Book 4 (Newsletter-The World Around Me)
Concept 2: Life Cycles Understand the life cycles of plants and animals.		
PO 1. Describe that most plants and animals will grow to physically resemble their parents.	✪	*Level Three* addresses Life Cycle and Growth, specifically, identifying inherited traits.

Strand 4: Life Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Concept 3: Organisms and Environments Understand the relationships among various organisms and their environment.		
PO 1. Identify some plants and animals that exist in the local environment.	✪	**Animal or Plant** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 42-45; Guide Book 4 (Newsletter-Living Things); **Plants** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 54-57; Guide Book 4 (Newsletter-Green and Growing); **Food From Plants** (Song; Instruction/Practice; Book-Follow the Apples; Review; Assessment; Certificate); Guide Book 3 p. 58-61; Guide Book 4 (Newsletter-Green and Growing); Student Materials (Book: Follow the Apples) *Level Two:* **Backyards** (Instruction/Practice; Experiment; Assessment/Review; Extension; Book); Guide Book 3 p. 52-55; Guide Book 4 (Worksheet p. 366); Student Materials (Book: Your Backyard)
PO 2. Identify that plants and animals need the following to grow and survive: • food • water • air • space	✪	**Living and Nonliving** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 38-41; Guide Book 4 (Newsletter-Living Things); **Plants** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 54-57; Guide Book 4 (Newsletter-Green and Growing) *Level Two:* Helps children understand that animals and plants depend of each other. See: **Animals and Plants** (Instruction/Practice; Assessment/Review; Extension; Book); Guide Book 3 p. 22-25; Guide Book 4 (Worksheet p. 359); **Desert** (Song; Instruction/Practice; Book-Where in the World Would You Go Today?; Review; Assessment); Guide Book 3 p. 134-137; Guide Book 4 (Newsletter-Our Earth); Student Materials (Book: Where in the World Would You Go Today?); **Mountain** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 142-145; Guide Book 4 (Newsletter-Our Earth); **Ocean** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 138-141; Guide Book 4 (Newsletter-Our Earth); **Rainforest** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 146-149; Guide Book 4 (Newsletter-Our Earth)
PO 3. Describe changes observed in a small system (e.g., ant farm, plant terrarium, aquarium).	✪	**Amphibians** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 74-77 (*Offline lesson teach students to observe the growth of tadpoles in an aquarium.*); Guide Book 4 (Newsletter-Vertebrates); **Animal or Plant** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 42-45 *(Creating An Environment for Animals and Plants)* ; Guide Book 4 (Newsletter-Living Things);

Strand 4: Life Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.		
No performance objectives at this grade level	NA	

Strand 5: Physical Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.		
Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.		
PO 1. Identify the following observable properties of objects using the senses: • shape • texture • size • color (See M00-S4C1-02 and M00-S4C1-03)	✪	**Materials** (Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 154-157; Guide Book 4 (Newsletter-How it Works!); **Solid and Liquid**(Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 160-163; Guide Book 4 (Newsletter-How it Works!)
PO 2. Compare objects by the following observable properties: • size • color • type of material (See M00-S4C1-02)	✪	**Materials** (Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 154-157; Guide Book 4 (Newsletter-How it Works!); **Solid and Liquid**(Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 160-163; Guide Book 4 (Newsletter-How it Works!)
Concept 2: Position and Motion of Objects Understand spatial relationships and the way objects move.		
PO 1. Describe spatial relationships (i.e., above, below, next to, left, right, middle, center) of objects. (See M00-S4C1-02 and 3SS-R1-01)	✪	**Positioning 2 - Over, Under, Above, Below** (Song; Introduction; Instruction; Practice/Assessment; Application; Certificate); Guide Book 2 p. 58-61; Guide Book 4 (Newsletter-Positioning); **Positioning 3 - Inside, Outside, Between** (Song; Introduction; Instruction/Application; Practice/Assessment; Application; Certificate); Guide Book 2 p. 90-93; Guide Book 4 (Newsletter-Positioning)

Strand 5: Physical Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	***Key Activities***
Concept 3: Energy and Magnetism Investigate different forms of energy.		
PO 1. Investigate how applied forces (push and pull) can make things move.	✪	**Push and Pull** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 164-167; Guide Book 4 (Newsletter-How it Works!); Student Materials (Book: Mr. Mario's Neighborhood)
PO 2. Investigate how forces can make things move without another thing touching them (e.g., magnets, static electricity).	✪	**Magnets** (Instruction/Practice; Assessment; Certificate); Guide Book 3 p. 168-171; Guide Book 4 (Newsletter-How it Works!)
PO 3. Sort materials according to whether they are or are not attracted by a magnet.	✪	**Magnets** (Instruction/Practice; Assessment; Certificate); Guide Book 3 p. 168-171 (*Activate Awareness activity*); Guide Book 4 (Newsletter-How it Works!)
PO 4. Identify familiar everyday uses of magnets (e.g., in toys, cabinet locks, decoration).		

C O R R E L A T I O N

Strand 6: Earth and Space Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	***Key Activities***
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.		
Concept 1: Properties of Earth Materials Identify the basic properties of Earth materials.		
PO 1. Identify rocks, soil, and water as basic Earth materials.	✪	**Water** (Song; Instruction/Practice; Review; Assessment; Certificate; Book-Mela's Water Pot); Guide Book 3 p. 46-49 *Level Two:* **Rocks** (Song; Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 138-141; Guide Book 4 (Worksheet p. 388) *Level Three:* **Soil** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 56-59; Guide Book 4 (Worksheet p. 364)
PO 2. Compare physical properties (e.g., color, texture, capacity to retain water) of basic Earth materials.	✪	**Water** (Song; Instruction/Practice; Review; Assessment; Certificate; Book-Mela's Water Pot); Guide Book 3 p. 46-49
PO 3. Classify a variety of objects as being natural or man-made.		
PO 4. Identify ways some natural or man-made materials can be reused or recycled (e.g., efficient use of paper, recycle aluminum cans).	✪	**Care of the Earth** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 150-153; Guide Book 4 (Newsletter-Our Earth)
Concept 2: Objects in the Sky Identify objects in the sky.		
No performance objectives at this grade level	NA	

Strand 6: Earth and Space Science

Arizona Science Standards Kindergarten	Waterford Early Math & Science Program Level One	
	Match	*Key Activities*
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.		
PO 1. Identify the following aspects of weather: • temperature • wind • precipitation • storms	✪	**Temperature** (Instruction/Practice; Review: Celsius; Review: Fahrenheit; Assessment: Celsius; Assessment: Fahrenheit; Certificate); Guide Book 3 p. 114-117; Guide Book 4 (Newsletter-The Weather Around Us) *Level Two:* **Weather** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 72-75; Guide Book 4 (Worksheet p. 372; Newsletter 522)
PO 2. Describe observable changes in weather.	✪	**Fall** (Song; Instruction/Practice; Book-That's What I Like; Review; Assessment); Guide Book 3 p. 118-121; **Winter** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 122-125; **Spring** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 126-129; **Summer** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 130-133; Guide Book 4 (Newsletter-The Weather Around Us); Student Materials (Book-That's What I Like)
PO 3. Give examples of how the weather affects people's daily activities.	✪	**Fall** (Song; Instruction/Practice; Book-That's What I Like; Review; Assessment); Guide Book 3 p. 118-121; **Winter** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 122-125; **Spring** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 126-129; **Summer** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 130-133; Guide Book 4 (Newsletter-The Weather Around Us); Student Materials (Book-That's What I Like)

Strand 1: Inquiry Process

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	*Key Activities*
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.		
Concept 1: Observations, Questions, and Hypotheses Observe, ask questions, and make predictions.		
PO 1. Compare common objects using multiple senses.	✪	**Solid, Liquid, Gas** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 142-145; Guide Book 4 (Worksheet p. 389; Newsletter p. 526); **Rocks** (Song; Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 138-141; Guide Book 4 (Worksheet p. 388); **States of Water** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 146-149; Guide Book 4 (Worksheet p. 390)
PO 2. Ask questions based on experiences with objects, organisms, and events in the environment. (See M01-S2C1-01)	✪	**What Gravity Does** (Song; Instruction/Practice; Assessment/Review); Guide Book 3 p. 154-157; Guide Book 4 (Worksheet p. 392); **What Plants Need** (Instruction/Practice; Experiment; Assessment/Review; Book); Guide Book 3 p. 64-67; Guide Book 4 (Worksheet pp. 369-370); Student Materials (Book: A Seed Grows); **Science Experiments:** Animal Experiment; Weather Experiment; Air Experiment; Pollution Experiment; Matter Experiment; Sorting Rocks Experiment; Health Experiment
PO 3. Predict results of an investigation based on life, physical, and Earth and space sciences (e.g., animal life cycles, physical properties, Earth materials).	✪	**Science Experiments:** Animal Experiment; Weather Experiment; Air Experiment; Pollution Experiment; Matter Experiment; Sorting Rocks Experiment; Health Experiment; **How Temperatures Changes Water** (Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 150-153; Guide Book 4 (Worksheet p. 391); **Food Chains** (Song; Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 36-39; Guide Book 4 (Worksheet p. 362)
Concept 2: Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.		
PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	✪	In Guide Book 3 off-line activities include student participation in Classroom Activities where safety should always be stressed; Student Materials (I Can Do Science video); **Science Experiments:** Animal Experiment; Weather Experiment; Air Experiment; Pollution Experiment; Matter Experiment; Sorting Rocks Experiment; Health Experiment

C O R R E L A T I O N

Strand 1: Inquiry Process

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.	✪	**Science Experiments:** Animal Experiment; Weather Experiment; Air Experiment; Pollution Experiment; Matter Experiment; Sorting Rocks Experiment; Health Experiment
PO 3. Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units). (See M01-S4C4-07)	✪	In Guide Book 3 off-line activities include *In the Classroom* activities where the uses of simple tools are used throughout the lessons.
PO 4. Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper). (See W01-S3C2-01 and W01-S3C3-01)	✪	Beginning on page 2 in Guide Book 3, *Science Is for Everyone*, the use of science journals is discussed and encouraged. On page 5, *Controlling Data* discusses the importance of properly collecting and organizing data.
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.		
PO 1. Organize (e.g., compare, classify, and sequence) objects, organisms, and events according to various characteristics. (See M01-S4C4-01)	✪	**Animal Groups** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 28-31; Guide Book 4 (Worksheet p. 360); **What Animals Eat** (Instruction/Practice; Assessment/Review; Book; Experiment); Guide Book 3 p. 32-35; Guide Book 4 (Worksheet p. 361); Student Materials (Book: Everybody Needs to Eat); **Healthy Food** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 176-179; Guide Book 4 (Worksheet p. 397)
PO 2. Compare the results of the investigation to predictions made prior to the investigation.	✪	**Science Experiments:** Animal Experiment; Weather Experiment; Air Experiment; Pollution Experiment; Matter Experiment; Sorting Rocks Experiment; Health Experiment
Concept 4: Communication Communicate results of investigations.		
PO 1. Communicate the results of an investigation using pictures, graphs, models, and/or words. (See M01-S2C1-02 and W01-S3C3-02)	✪	Communication is discussed in the **Scientific Process Skills** which are found in Guide Book 3 p. 3-5; Several lessons ask to students to create graphs, models, or draw pictures to *Check for Understanding*, which is a designated section within each lesson.

Strand 1: Inquiry Process

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
PO 2. Communicate with other groups to describe the results of an investigation. (See LS-F1)	✪	Communication is discussed in the **Scientific Process Skills** which are found in Guide Book 3 p. 3-5; *Check for Understanding* asks students to share their finding in several lessons throughout Guide Book 3.

Strand 2: History and Nature of Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.		
Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.		
PO 1. Give examples of how diverse people (e.g., children, parents, weather reporters, cooks, healthcare workers, gardeners) use science in daily life.	✪	As students experience each lesson within the *Waterford Early Math & Science Program*, they are exposed to a variety of people and how they use science. One specific lesson does not teach how science is used in daily life; it is through multiple experiences they gain this knowledge.
PO 2. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Sally Ride [scientist], supports Strand 6; Neil Armstrong [astronaut, engineer], supports Strand 6).	✪	**Louis Pasteur** (Book); Guide Book 3 p. 162-163; **Joanne Simpson** (Book); Guide Book 3 p. 76-77; **Carl Linnaeus** (Book); Guide Book 3 p. 26-27; **Antoni van Leeuwenhoek** (Book); Guide Book 3 p. 16-17
Concept 2: Nature of Scientific Knowledge Understand how science is a process for generating knowledge.		
No performance objectives at this grade level	NA	

Strand 3: Science in Personal and Social Perspectives

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.		
Concept 1: Changes in Environments Describe the interactions between human populations, natural hazards, and the environment.		
No performance objectives at this grade level	NA	
Concept 2: Science and Technology in Society Understand the impact of technology.		
PO 1. Identify various technologies (e.g., automobiles, radios, refrigerators) that people use.		
PO 2. Describe how suitable tools (e.g., magnifiers, thermometers) help make better observations and measurements.	✪	Many lessons in Guide Book 3 encourage the use of tools as students observe and/or measure. Each lesson has a "*What You Need*" section that identified the materials need for each activity. **Weather Tools** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 78-81; Guide Book 4 (Worksheet p. 373); **Water Observations** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 102-105; Guide Book 4 (Worksheet p. 379; Newsletter p. 524); Student Materials (Book: Water Is All Around)

Strand 4: Life Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.		
Concept 1: Characteristics of Organisms Understand that basic structures in plants and animals serve a function.		
PO 1. Identify the following as characteristics of living things: • growth and development • reproduction • response to stimulus	✪	**Animal Bodies** (Song; Instruction/Practice; Assessment/Review; Extension; Book); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet p. 3578; Newsletter p. 519); Student Materials (Book: Animal Bodies) *Level Three:* **Life Cycle and Growth** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet pp. 349-352; Newsletter p. 456)
PO 2. Compare the following observable features of living things: • movement – legs, wings • protection – skin, feathers, tree bark • respiration – lungs, gills • support – plant stems, tree trunks	✪	**Animal Bodies** (Song; Instruction/Practice; Assessment/Review; Extension; Book); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet p. 358; Newsletter p. 519); Student Materials (Book: Animal Bodies); **Animals and Plants** (Instruction/Practice; Assessment/Review; Extension; Book); Guide Book 3 p. 22-25; Guide Book 4 (Worksheet p. 359)
PO 3. Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.	✪	**Animal Groups** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 28-31; Guide Book 4 (Worksheet p. 360); **Animal Bodies** (Song; Instruction/Practice; Assessment/Review; Extension; Book); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet p. 358; Newsletter p. 519); Student Materials (Book: Animal Bodies)
Concept 2: Life Cycles Understand the life cycles of plants and animals.		
PO 1. Identify stages of human life (e.g., infancy, adolescence, adulthood).	✪	*Level Three:* **Life Cycle and Growth** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet pp. 349-352; Newsletter p. 456)
PO 2. Identify similarities and differences between animals and their parents. (See 1CH-F4)	✪	*Level Three:* **Traits of Living Things** (Song; Instruction/Play and Practice; Book; Assessment/Review); Guide Book 3 p. 22-25; Guide Book 4 (Worksheet pp. 353-354); Student Materials (Book: George and Jack)

Strand 4: Life Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	*Key Activities*
Concept 3: Organisms and Environments Understand the relationships among various organisms and their environment.		
PO 1. Identify some plants and animals that exist in the local environment.	✪	**Backyards** (Instruction/Practice; Experiment; Assessment/Review; Extension; Book); Guide Book 3 p. 52-55; Guide Book 4 (Worksheet p. 366); Student Materials (Book: Your Backyard)
PO 2. Compare the habitats (e.g., desert, forest, prairie, water, underground) in which plants and animals live.	✪	**Polar Lands** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 40-43; Guide Book 4 (Worksheet p. 363; Newsletter p. 520); **Wetlands** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 44-47; Guide Book 4 (Worksheet p. 364); **Prairies** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 48-51; Guide Book 4 (Worksheet p. 365)
PO 3. Describe how plants and animals within a habitat are dependent on each other.	✪	**Polar Lands** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 40-43; Guide Book 4 (Worksheet p. 363; Newsletter p. 520); **Wetlands** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 44-47; Guide Book 4 (Worksheet p. 364); **Prairies** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 48-51; Guide Book 4 (Worksheet p. 365)
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.		
No performance objectives at this grade level	NA	

Strand 5: Physical Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.		
Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.		
PO 1. Classify objects by the following observable properties: • shape • texture • size • color • weight	✪	**Solid, Liquid, Gas** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 142-145; Guide Book 4 (Worksheet p. 389; Newsletter p. 526); **Animal Groups** (Instruction/Practice; Assessment/Review; Extension); Guide Book 3 p. 28-31; Guide Book 4 (Worksheet p. 360)
PO 2. Classify materials as solids or liquids.	✪	**Solid, Liquid, Gas** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 142-145; Guide Book 4 (Worksheet p. 389; Newsletter p. 526) *Level One:* **Solid and Liquid**(Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 160-163; Guide Book 4 (Newsletter-How it Works!)
Concept 2: Position and Motion of Objects Understand spatial relationships and the way objects move.		
PO 1. Demonstrate the various ways that objects can move (e.g., straight line, zigzag, back-and-forth, round-and-round, fast, slow).		
Concept 3: Energy and Magnetism Investigate different forms of energy.		
No performance objectives at this grade level	NA	

C O R R E L A T I O N

Strand 6: Earth and Space Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.		
Concept 1: Properties of Earth Materials Identify the basic properties of Earth materials.		
PO 1. Describe the following basic Earth materials: • rocks • soil • water	✪	**Rocks** (Song; Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 138-141; Guide Book 4 (Worksheet p. 388); **Water Observations** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 102-105; Guide Book 4 (Worksheet p. 379; Newsletter p. 524); Student Materials (Book: Water Is All Around) *Level One:* **Water** (Song; Instruction/Practice; Review; Assessment; Certificate; Book-Mela's Water Pot); Guide Book 3 p. 46-49 *Level Three:* **Soil** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 56-59; Guide Book 4 (Worksheet p. 364)
PO 2. Compare the following physical properties of basic Earth materials: • color • texture • capacity to retain water	✪	**The Earth** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 134-137; Guide Book 4 (Worksheet p. 387); **Sources of Water** (Instruction/Practice; Experiment; Assessment/Review); Guide Book 3 p. 118-121; Guide Book 4 (Worksheet p. 383)
PO 3. Identify common uses (e.g., construction, decoration) of basic Earth materials (i.e., rocks, water, soil).	✪	**Rocks** (Song; Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 138-141; Guide Book 4 (Worksheet p. 388); **Uses of Water** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 114-117; Guide Book 4 (Worksheet p. 382) *Level One:* **Water** (Song; Instruction/Practice; Review; Assessment; Certificate; Book-Mela's Water Pot); Guide Book 3 p. 46-49 *Level Three:* **Soil** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 56-59; Guide Book 4 (Worksheet p. 364);

Strand 6: Earth and Space Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	***Key Activities***
PO 4. Identify the following as being natural resources: • air • water • soil • trees • wildlife	✪	*Level Three:* **Natural Resources** (Song; Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 46-49; Guide Book 4 (Worksheet p. 360-362)
PO 5. Identify ways to conserve natural resources (e.g., reduce, reuse, recycle, find alternatives).	✪	**Take Care of Air** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 126-129; Guide Book 4 (Worksheet p. 385); **Take Care of Our Earth** (Song; Instruction/Practice; Assessment; Experiment); Guide Book 3 p. 122-125; Guide Book 4 (Worksheet p. 384; Newsletter p. 525); **Take Care of Water** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 130-133; Guide Book 4 (Worksheet p. 386)
Concept 2: Objects in the Sky Identify objects in the sky.		
PO 1. Identify evidence that the Sun is the natural source of heat and light on the Earth (e.g., warm surfaces, shadows, shade).	✪	*Level One:* **Sun** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 50-53; Guide Book 4 (Newsletter-The Sky Above Us)
PO 2. Compare celestial objects (e.g., Sun, Moon, stars) and transient objects in the sky (e.g., clouds, birds, airplanes, contrails).	✪	*Level One:* **Moon** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 102-105; Guide Book 4 (Newsletter-The Sky Above Us); **Sun** (Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 50-53; Guide Book 4 (Newsletter-The Sky Above Us); **Constellations** (Instruction/Practice; Book-Star Pictures; Review; Assessment; Certificate); Guide Book 3 p. 106-109; Guide Book 4 (Newsletter-The Sky Above Us); Student Materials (Book: Sky Pictures)
PO 3. Describe observable changes that occur in the sky, (e.g., clouds forming and moving, the position of the Moon).	✪	*Level One:* **Clouds** (Song: Precipitation - Rain or Snow; Instruction/Practice; Review; Assessment) ; Guide Book 3 p. 110-113; Guide Book 4 (Newsletter-The Weather Around Us); **Moon** (Song; Instruction/Practice; Review; Assessment); Guide Book 3 p. 102-105; Guide Book 4 (Newsletter-The Sky Above Us)

Strand 6: Earth and Space Science

Arizona Science Standards First Grade	Waterford Early Math & Science Program Level Two	
	Match	*Key Activities*
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.		
PO 1. Identify the following characteristics of seasonal weather patterns: • temperature • type of precipitation • wind	✪	**Weather** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 72-75; Guide Book 4 (Worksheet p. 372; Newsletter 522); **Weather Patterns** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 82-85; Guide Book 4 (Worksheet p. 374)
PO 2. Analyze how the weather affects daily activities.	✪	**Weather Patterns** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 82-85; Guide Book 4 (Worksheet p. 374);

Strand 1: Inquiry Process

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.		
Concept 1: Observations, Questions, and Hypotheses Observe, ask questions, and make predictions.		
PO 1. Formulate relevant questions about the properties of objects, organisms, and events in the environment. (See M02-S2C1-01)	✪	**Science Experiments:** Sound Experiment; Heat Experiment; Light Experiment To complete a science experiment, student use these basic steps: • ask a question • gather data • form a hypothesis • plan an experiment and try it again • draw a conclusion
PO 2. Predict the results of an investigation (e.g., in animal life cycles, phases of matter, the water cycle).	✪	
Concept 2: Scientific Testing (Investigating and Modeling) Participate in planning and conducting investigations, and recording data.		
PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.	✪	Science Safety Tips are reviewed on page 2 in *Science Lessons and Resources Book 3*. In this manual off-line activities include student participation in Classroom Activities where safety should always be stressed.
PO 2. Participate in guided investigations in life, physical, and Earth and space sciences.	✪	All lessons guide students through the investigation process with life, physical and Earth and space sciences.
PO 3. Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units). (See M02-S4C4-05 and M02-S4C4-06)	✪	In Guide Book 3 off-line activities include *In the Classroom* activities where the uses of simple tools are used throughout the lessons. *Scientific Process Skills* discusses *Observing* (page 5), where the uses of tools such as microscopes, thermometers, etc. are used to observe. Students also use simple tools within the on-line lessons presented by the computer software. **Movement of Heat** (Experiment/Play and Practice; Instruction/Play and Practice; Book; Exploration/Play and Practice; Assessment/Review); Guide Book 3 p. 78-81; Guide Book 4 (Worksheet p. 368); Student Materials (Book: I Want to Be a Scientist Like Marie Curie)

Strand 1: Inquiry Process

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
PO 4. Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper). (See W02-S3C2-01 and W02-S3C3-01)	✪	Beginning on page 2 in Guide Book 3, *Science Is for Everyone*, the use of science journals is discussed and encouraged. On page 3, *Collecting Data* encourages students to record and write down what happened in a science journal. **Heat Sources and Uses** (Instruction/.Play and Practice; Book; Assessment/Review); Guide Book 3 p. 74-77; Guide Book 4 (Worksheet p. 361; Newsletter p. 460); Student Materials (Book: Warm Soup for Dedushka)
Concept 3: Analysis and Conclusions Organize and analyze data; compare to predictions.		
PO 1. Organize data using graphs (i.e., pictograph, tally chart), tables, and journals. (See M02-S2C1-02)	✪	Guide Book 3, *Scientific Process Skills* are outlined and discussed for students to use throughout the lessons. *Communicating* encourages students to communicate by making a graph, diagram, or table. *Estimating and Measuring* requires students to make a chart, graph, or table to show estimations and measurements. **Fossils** (Instruction/Play and Practice; Book; Assessment/Review); Guide Book 3 p. 39 encourages students to create a **K-W-L chart** to guide their learning; Guide Book 4 (Worksheet p. 358; Newsletter p. 457); Student Materials (Book: Fossils Under Our Feet).
PO 2. Construct reasonable explanations of observations on the basis of data obtained (e.g., Based on the data, does this make sense? Could this really happen?). (See M02-S2C1-04)	✪	*Scientific Process Skills* encourage students to make observations and record their interpretations as in a journal as they investigate. Sample questions are provided on pages 2-5 in Guide Book 3 as a guide through the science process skills. By answering these questions, students are able to generate and analyze the reasonable explanations for their observations.
PO 3. Compare the results of the investigation to predictions made prior to the investigation.	✪	Guide Book 3, *Scientific Process Skills* teaches students about the *Predicting* process (page 5). **Water Cycle** (Song; Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 34-37; Guide Book 4 (Worksheet p.357)
PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.	✪	*Scientific Process Skills* encourage students to make observations and record their interpretations as in a journal as they investigate. Each lesson includes a *What to Ask* section, that guides the learners through the questioning process to help them better understand the processes they are studying.

Strand 1: Inquiry Process

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Concept 4: Communication Communicate results of investigations.		
PO 1. Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written). (See M02-S2C1-02 and W02-S3C2-01)	✪	Each lesson found in Guide Book 3 states the *Science Process Skills* that are taught in that lesson. *Communicating* is one of the process skills that is taught and used throughout the Waterford Earl y Math & Science Program. For example see the lesson **Water Cycle,** Guide Book 3 p. 35 Students are instructed to use a notebook to record what happens in the terrarium. OR **Dinosaurs,** Guide Book 3 p. 44 Students are encouraged to orally share with their group how his dinosaur survives in its environment.
PO 2. Communicate with other groups to describe the results of an investigation. (See LS-F1)	✪	

Strand 2: History and Nature of Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	*Key Activities*
Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.		
Concept 1: History of Science as a Human Endeavor Identify individual and cultural contributions to scientific knowledge.		
PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Daniel Hale Williams [physician], supports Strand 4; Charles Drew [physician], supports Strand 4; Elizabeth Blackwell [physician], supports Strand 4).	✪	**Alexander von Humboldt** (Book); Guide Book 3 p. 50-51; Student Materials (Book: I Want to Be a Scientist Like Humboldt); **Thomas Edison** (Book); Guide Book 3 p. 90-91; Student Materials (Book: I Want to Be a Scientist Like Thomas Edison); **Stephen Hawking** (Book); Guide Book 3 p. 12-13; Student Materials (Book: I Want to Be a Scientist Like Hawking); **Isaac Newton** (Book); Guide Book 3 p. 64-65; Student Materials (Book: I Want to Be a Scientist Like Isaac Newton)
PO 2. Identify science-related career opportunities.		
Concept 2: Nature of Scientific Knowledge Understand how science is a process for generating knowledge.		
PO 1. Identify components of familiar systems (e.g., organs of the digestive system, bicycle).	✪	**Simple Machines** (Instruction/Play and Practice; Book; Exploration/Play and Practice; Assessment/Review); Guide Book 3 p. 92-95; Guide Book 4 (Worksheet p. 371; Newsletter p. 462); Student Materials (Book: How Did the Chicken Cross the Road?)
PO 2. Identify the following characteristics of a system: • consists of multiple parts or subsystems • parts work interdependently		
PO 3. Identify parts of a system too small to be seen (e.g., plant and animal cells).	✪	**Plant Life Cycle and Growth** (Instruction/Play and Practice; Book; Assessment/Review); Guide Book 3 p. 30-33; Guide Book 4 (Worksheet p. 356); Student Materials (Book: The Old Maple Tree)

Strand 3: Science in Personal and Social Perspectives

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.		
Concept 1: Changes in Environments Describe the interactions between human populations, natural hazards, and the environment.		
No performance objectives at this grade level	NA	
Concept 2: Science and Technology in Society Understand the impact of technology.		
PO 1. Analyze how various technologies impact aspects of people's lives (e.g., entertainment, medicine, transportation, communication).	✪	**Alexander von Humboldt** (Book); Guide Book 3 p. 50-51; Student Materials (Book: I Want to Be a Scientist Like Humboldt); **Thomas Edison** (Book); Guide Book 3 p. 90-91; Student Materials (Book: I Want to Be a Scientist Like Thomas Edison); **Isaac Newton** (Book); Guide Book 3 p. 64-65; Student Materials (Book: I Want to Be a Scientist Like Isaac Newton)
PO 2. Describe important technological contributions made by people, past and present: • automobile – Henry Ford • airplane – Wilbur and Orville Wright • telephone – Alexander G. Bell	✪	**Thomas Edison** (Book); Guide Book 3 p. 90-91; Student Materials (Book: I Want to Be a Scientist Like Thomas Edison); *Level One:* **Wilbur and Orville Wright** (Book-I Want to Be a Scientist Like Orville and Wilbur Wright); Guide Book 3 p. 158-159;
PO 3. Identify a simple problem that could be solved by using a suitable tool.	✪	**Simple Machines** (Instruction/Play and Practice; Book; Exploration/Play and Practice; Assessment/Review); Guide Book 3 p. 92-95; Guide Book 4 (Worksheet p. 371; Newsletter p. 462); Student Materials (Book: How Did the Chicken Cross the Road?)

Strand 4: Life Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.		
Concept 1: Characteristics of Organisms Understand that basic structures in plants and animals serve a function.		
PO 1. Identify animal structures that serve different functions (e.g., sensory, defense, locomotion).		
PO 2. Identify the following major parts of: • the digestive system – mouth, esophagus, stomach, small and large intestines • respiratory system – nose, trachea, lungs, diaphragm • circulatory system – heart, arteries, veins, blood (See 1CH-F3-01)		
PO 3. Describe the basic functions of the following systems: • digestive – breakdown and absorption of food, disposal of waste • respiratory – exchange of oxygen and carbon dioxide • circulatory – transportation of nutrients and oxygen throughout the body (See 1CH-F3-02)		

Strand 4: Life Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	*Key Activities*
Concept 2: Life Cycles Understand the life cycles of plants and animals.		
PO 1. Describe the life cycles of various insects.	✪	**Life Cycle and Growth** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet pp. 349-352; Newsletter p. 456)
PO 2. Describe the life cycles of various mammals.	✪	**Life Cycle and Growth** (Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 18-21; Guide Book 4 (Worksheet pp. 349-352; Newsletter p. 456)
PO 3. Compare the life cycles of various organisms.		
Concept 3: Organisms and Environments Understand the relationships among various organisms and their environment.		
No performance objectives at this grade level	NA	
Concept 4: Diversity, Adaptation, and Behavior Identify plant and animal adaptations.		
No performance objectives at this grade level	NA	

Strand 5: Physical Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.		
Concept 1: Properties of Objects and Materials Classify objects and materials by their observable properties.		
PO 1. Describe objects in terms of measurable properties (e.g., length, volume, weight, temperature) using scientific tools. (See M02-S4C4-01 and M02-S4C4-02)	✪	**Length: Nonstandard and Standard Units** (Introduction; Instruction (Nonstandard Units); Assessment (Nonstandard Units); Instruction (Standard Units); Assessment (Standard Units)); Guide Book 2 p. 88-91; Guide Book 4 (Worksheet pp. 20-21) *Level Two:* **How Temperatures Changes Water** (Instruction/Practice; Assessment/Review; Experiment); Guide Book 3 p. 150-153; Guide Book 4 (Worksheet p. 391)
PO 2. Classify materials as solids, liquids, or gases.	✪	*Level Two:* **Solid, Liquid, Gas** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 142-145; Guide Book 4 (Worksheet p. 389; Newsletter p. 526) *Level One:* **Solid and Liquid**(Song; Instruction/Practice; Review; Assessment; Certificate); Guide Book 3 p. 160-163; Guide Book 4 (Newsletter-How it Works!)
PO 3. Demonstrate that water can exist as a: • gas – vapor • liquid – water • solid – ice	✪	*Level Two:* **States of Water** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 146-149; Guide Book 4 (Worksheet p. 390)
PO 4. Demonstrate that solids have a definite shape and that liquids and gases take the shape of their containers.	✪	*Level Two:* **Solid, Liquid, Gas** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 142-145; Guide Book 4 (Worksheet p. 389; Newsletter p. 526); **States of Water** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 146-149; Guide Book 4 (Worksheet p. 390)
Concept 2: Position and Motion of Objects Understand spatial relationships and the way objects move.		
No performance objectives at this grade level	NA	

Strand 5: Physical Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Concept 3: Energy and Magnetism Investigate different forms of energy.		
No performance objectives at this grade level	NA	

Strand 6: Earth and Space Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.		
Concept 1: Properties of Earth Materials Identify the basic properties of Earth materials.		
No performance objectives at this grade level	NA	
Concept 2: Objects in the Sky Identify objects in the sky.		
No performance objectives at this grade level	NA	
Concept 3: Changes in the Earth and Sky Understand characteristics of weather conditions and climate.		
PO 1. Measure weather conditions (e.g., temperature, precipitation). (See M02-S4C4-04 and M02-S4C4-05)	✪	*Level Two*: **Weather** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 72-75; Guide Book 4 (Worksheet p. 372; Newsletter 522);
PO 2. Record weather conditions (e.g., temperature, precipitation).		
PO 3. Identify the following types of clouds: • cumulus • stratus • cirrus		

Strand 6: Earth and Space Science

Arizona Science Standards Second Grade	Waterford Early Math & Science Program Level Three	
	Match	***Key Activities***
PO 4. Analyze the relationship between clouds, temperature, and weather patterns.	✪	**Water Cycle** (Song; Instruction/Play and Practice; Assessment/Review); Guide Book 3 p. 34-37; Guide Book 4 (Worksheet p.357) *Level Two:* **Weather** (Song; Instruction/Practice; Assessment/Review; Book); Guide Book 3 p. 72-75; Guide Book 4 (Worksheet p. 372; Newsletter 522); **Weather Patterns** (Instruction/Practice; Assessment/Review); Guide Book 3 p. 82-85; Guide Book 4 (Worksheet p. 374) *Level One:* **Clouds** (Song: Precipitation - Rain or Snow; Instruction/Practice; Review; Assessment); Guide Book 3 p. 110-113; Guide Book 4 (Newsletter-The Weather Around Us)

L E S S O N O B J E C T I V E S

Level One Science

LESSON OBJECTIVE	SONG	BOOK
Science Process Skills Students learn observation, Scientific Method, and tools to use	(1) I am part of all I see; (2) Scientific Method	I Want to be a Scientist Like Jane Goodall
Senses: Seeing Students learn about the information the eyes provide	5 Senses	I wish I Had Ears Like a Bat
Senses: Hearing Students learn about the information ears provide.	5 Senses Song	
Senses: Touching Students learn about the information touch provide	5 Senses Song	
Senses Smelling Students learn about the information smell provide	5 Senses Song	
Senses: Tasting Students learn about the information taste provides	5 Senses Song	
Living and Non-Living Students classify things around them as living or non-living	Living and Non-Living	
Animal or Plant? Students learn to classify living things as animal or plant	Plant or animal	
Water Students learn the importance of water for all living things	The Water Song	Mela's Water Pot
Sun The sun is the source of energy and all living things need the sun	Sun Blues	
Plants Students identify the stem, leaves, roots, and things a plant needs to grow	Plants are Growing	
Food from Plants Students learn that plants provide food for people and animals	Plants for Food	Follow the Apples
Mammals Students learn to recognize mammals by their characteristics	Vertebrates Song	What Am I?
Birds Students learn to recognize birds by their characteristics	Bird Song	
Fish Students learn to recognize fish by their characteristics	Fish Song	
Amphibians Students learn to recognize amphibians by their characteristics	Vertebrates Song	
Reptiles Students learn to recognize reptiles by their characteristics	Vertebrates Song	

L E S S O N O B J E C T I V E S

Level One Science

LESSON OBJECTIVE	SONG	BOOK
Insects Students learn to recognize insects by their characteristics	Crawly Song	
Spiders Students learn to recognize spiders by their characteristics	Crawly Song	Creepy Crawlers
Worms Students learn to recognize earthworms by their characteristics		
Moon Students learn about the moon	Moon Song	
Constellations Students recognize what a constellation is		Sky Pictures
Clouds Students learn to look for weather patterns by looking at the sky.		
Rain and Snow Students learn the difference between two forms of precipitation: rain and snow	Precipitation Song	
Temperature Students learn that a thermometer is used to tell the temperature		
Autumn Students observe how plants, animals and people adapt to temperature changes in the fall	Seasons Song	
Winter Students observe how plants, animals and people adapt to temperature changes in the winter	Seasons Song	
Spring Students observe how plants, animals and people adapt to temperature changes in the spring	Seasons Song	
Summer Students observe how plants, animals and people adapt to temperature changes in the summer	Seasons Song	
Desert Students identify the major characteristics of a desert environment	Four Ecosystems	Where in the World Would You Go Today?
Ocean Students identify the major characteristics of an ocean environment	Four Ecosystems	
Mountain Students identify the major characteristics of a mountain environment	Four Ecosystems	
Rain Forest Students identify the major characteristics of a rain forest environment	Four Ecosystems	
Pollution Students learn how humans effect the environment by littering, and how to help by recycling	Pollution Rap	

L E S S O N O B J E C T I V E S

Level One Science

LESSON OBJECTIVE	SONG	BOOK
Materials Students recognize paper, wood, and fabric and understand some difference between them		I Want to Be A Scientist Like Wilbur and Orville Wright
Solid and Liquid Students identify objects as solid or liquid	Solid or Liquid?	
Magnets Students learn that magnets move some objects with a push or pull		
Push and Pull Students learn that objects will move when they are pushed or pulled	Push or Pull	Mr. Mario's Neighborhood

L E S S O N O B J E C T I V E S

Level Two Science

OBJECTIVE	SONG	BOOK
Science Tools Observe how science tools can be used to gather information	Scientific Method	
Scientist: Antoni van Leeuwenhoek		I Want to Be a Scientist Like Antoni van Leeuwenhoek
Animal Bodies Understand that animals' bodies have adaptations for survival	Animal Bodies	Animal Bodies
Animals and Plants Understand that animals and plants depend of each other		
Scientist: Carl Linnaeus		I Want to Be a Scientist Like Carl Linnaeus
Animal Groups Classify animals by structure and body covering		
What Animals Eat Classify animals by what they eat	What Animals Eat	Everybody Needs to Eat
Food Chains Identify parts of a food chain and provide examples		
Polar Land Identify the characteristics of the polar lands and how animals and plants survive there		
Wetland Identify the characteristics of the wetlands and how animals and plants survive there		
Prairie Identify the characteristics of the prairies and how animals and plants survive there		
Backyard Identify the characteristics of a backyard and how plants and animals survive there		
Function of Plant Parts Explain the function of plant parts: stem, root, leaf, flower and seed	Plants Are Growing	
Plants People Eat Identify plant parts people eat	Plants for Food	
How People Use Plants Identify how people use plants		
Weather Identify temperature, precipitation and wind as components of weather		

L E S S O N O B J E C T I V E S

Level Two Science

OBJECTIVE	SONG	BOOK
Scientist: Joanne Simpson		I Want to Be a Scientist Like Joanne Simpson
Weather Tools Identify and use tools to measure weather		
Weather Patterns Observe weather changes: daily and seasonal patterns		
Lightning Safety Identify thunder and lightning and demonstrate lightning storm safety	The Storm Song	
How's the Weather Explain how different weather conditions affect activities of people and animals		Whatever Weather
Properties of Air Identify that air is invisible and odorless, but can move things and change the shape of some things Observe through demonstration that air takes up space	Air	
How Living Things Get Air Observe different ways that living things get air Demonstrate that air can be used in work and play		Can You Guess?
Water Observations Observe and measure the characteristics of water. Experiment with sink and float	Water	Water Is All Around
Animals Need Water Observe ways animals use water		
Plants Need Water Plan and conduct an experiment to show that plants need water		
Uses of Water Identify the ways people use water		
Sources of Water Identify and compare natural sources of water including oceans, glaciers, lakes, rivers and streams		
Take Care of Our Earth Identify the effects of people on plants and animals. Experiment about pollution.	Conservation	
Take Care of Air Observe how to take care of air through conservation habits		
The Earth Learn about the earth's shape and components (air, water, land)		
Rocks Discover where rocks are found and how rocks are used	The Rocks Song	No Room for Rocks

L E S S O N O B J E C T I V E S

Level Two Science

OBJECTIVE	SONG	BOOK
Solid, Liquid, Gas Discover different properties of solids, liquids and gases	Matter	Pancakes Matter
States of Water in the World Discover ways that water, in all three states, is found in the natural and designed world		
Temperature Changes and States of Water Predict changes in states of water that will occur with temperature changes		
What Gravity Does Observe and demonstrate some properties of gravity	Gravity	
Germs Identify places where germs are commonly found and ways they enter the body		
Scientist: Louis Pasteur		I Want to Be a Scientist Like Louis Pasteur
Preventing Germs and Illness Explore ways to prevent germs from entering the body and ways to prevent illness		
Exercise and Rest Explain the benefits of exercise and rest on the heart, lungs, muscles and bones and identify physical activities in daily life that promote personal fitness	Health	We All Exercise
Take Care of Your Teeth Explain the function and care of teeth		
Healthy Food Categorize food by group and classify food as healthy or unhealthy		
What Plants Need Investigate conditions that affect plant growth Experiment about plants		A Seed Grows
Taking Care of Water Identify ways to conserve and protect water		

L E S S O N O B J E C T I V E S

Level Three Science

OBJECTIVE	SONG	BOOK
The Sun, Moon, and Earth Identify the relationship between the Sun, Moon, and Earth and the patterns of each *Introduction to Astronomy*: Learn that stars, planets, comets, meteors, satellites, and galaxies can be seen in the night sky	Sun Blues	
Scientist: Stephen Hawking		I Want to Be a Scientist Like Stephen Hawking
Moon Patterns Understand the pattern of the phases of the moon	Moon Song	
Life Cycle and Growth Identify the stages in the life cycle of frogs, butterflies and birds		
Traits of Living Things Learn that many characteristics of living things are either inherited or result from an individual's interactions with the environment	That's a Trait!	George and Jack
Plant Life Cycle and Growth Identify stages in a plant life cycle	Plant Cycle	The Old Maple Tree
Water Cycle Observe the water cycle and identify the stages	Water Cycle	
Fossils Identify the characteristics of fossils: they are traces of living things; they provide evidence about past life on earth; they are usually composed of minerals; they are most often found in sedimentary rock		Fossils under Our Feet
Team Science (Ecosystems) Work cooperatively to determine the best ecosystem for an ostrich **Team Science (Fossils)** Work cooperatively to identify ecosystem of specific fossils.		
Dinosaurs Compare the characteristics of plant-eating and meat-eating dinosaurs	Dinosaurs	A Dinosaur's First Day
Natural Resources Identify natural resources found on Earth: plants, animals, minerals, and water	Natural Resources	
Scientist: Alexander von Humboldt		I Want to Be a Scientist Like Alexander von Humboldt
Rock Cycle Investigate the rock cycle to discover how the earth changes	Rock Cycle	Rocks

L E S S O N O B J E C T I V E S

Level Three Science

OBJECTIVE	SONG	BOOK
Soil Identify the origin and components of soil		
Sources of Light Identify natural and man-made sources of light Demonstrate ability to identify natural and man-made sources of light.		
Scientist: Isaac Newton		I Want to Be a Scientist Like Isaac Newton
Properties of Light Observe that light travels in straight lines, and when it strikes an object it can pass through, be reflected, refracted, or blocked. Explore ways to change the position and size of shadows Learn about the properties of light		My Family Campout
Electricity Identify basic properties and uses of both static and current electricity Create an electrical circuit	Electricity	Lightning Bells
Sources and Uses of Heat Identify the sources and properties of heat	Sources of Heat	Warm Soup for Dedushka
Movement of Heat Identify the flow of heat and how different materials affect the movement of heat Identify insulators and conductors of heat		
Scientist: Marie Curie		I Want to Be a Scientist Like Marie Curie
Properties of Sound: Vibrations and Waves Explore properties of sound: Sound is a vibration, sound travels differently through different states of matter	The Sound Song	What Sounds Say
Sound: Pitch and Volume Explore pitch and volume as properties of sound Create a song and explore pitch and volume		
Scientist: Thomas Edison		I Want to Be a Scientist Like Thomas Edison
Simple Machines Identify levers, inclined planes, pulleys, wheels and axles and their applications Identify simple machines and apply them to accomplish a task	Simple Machines	How Did the Chicken Cross the Road?

L E S S O N O B J E C T I V E S

Level Three Science

OBJECTIVE	SONG	BOOK
Inventions Identify everyday things as inventions and match them with the problems they solve	That's Inventing!	Inventions All Around
Changes in Matter Observe changes in the properties of matter cause by heating, cooling, bending, or cutting		