

Grade 2 Science Curriculum Alignment with State Standards - 2009

**District: Portales
Municipal Schools**

**Textbook: Scott Foresman
Science New Mexico**

I= Introduce R= Review M= Master

Strand: SCIENTIFIC
THINKING AND
PRACTICE

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically.

K-4 Benchmark I: Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.

Essential Question: How do people use scientific processes including making inferences, and recording and communicating data when exploring the natural world?

Grade 2 Performance Standards (1-4 .9 weeks)	Scott Foresman Science NM-Concept/Skills	Activities/ Assessment	Resources / Materials
1. Conduct simple investigations (e.g. measure the sizes of plants of the same kind that are grown in sunlight and in shade). (R)	Unit A p.26–27 Making inferences and recording data	TSW reflect on the data, or evidence, they have gathered in an investigation in their portfolio/journal. Assessment: Portfolio, Science Journal, Formal Assessment	Scott Foresman www.mgonline.com/experimentsforkids.html Materials: Graphic Organizers in Unit A
2. Use tools to provide information not directly available through only the senses (e.g., magnifiers, rulers, thermometers). (R)	Unit B p.140, Compare and Contrast	TSW know that scientist and technologist use a variety of tools. Assessment: Activity Rubric	Paper plates; hand lens; plastic cup; plastic dropper; potting soil, sandy soil; water www.utm.edu/departments/cece/old_site/second/2c3.shtml
3. Make predictions based on observed patterns as opposed to random guessing. (R)	4, 5, 28–29, 56–57, 68, 69, 122–123, 132–133, 237, 268, 269, 290–291, 346–347, 420–421 Making inferences; sequencing,	TSW create a variety of patterns by illustrating patterns in science journal. Assessment: Activity Rubric.	Leaves Science journal www.printables.scholastic.com/printables/detail/?id=20105
4. Follow simple instructions for scientific investigation. (R)	Unit A, p 68, Sorting, making inferences, cause and effect,	TSW demonstrate a simple cause and effect by blowing air into a balloon. Assessment: Activity Rubric, Cause and Effect graphic organizer	Balloon Cause and Effect graphic organizer

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Strand: SCIENTIFIC THINKING AND PRACTICE	Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically.	K-4 Benchmark II: Use scientific thinking and knowledge and communicate findings.
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Essential Question: How does a caterpillar grow and change? How can you model a food web?

Grade 2 Performance Standards (1-4 .9 weeks)	<i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Understand that in doing science it is often helpful to work with a team and share findings.(I)	Unit A p.90–91, Infer.	TSW create and write If/Then statements in science journals after modeling a food web in groups. Assessment: Activity rubric	Yarn Food web cards Tape Crayons
2. Make accurate observations and communicate findings about investigations. (R)	Unit A p. 122-123 Predict, infer, alike and different	TSW make predictions, collect and record data, and infer what happen to a chrysalis using their science journals. Assessment: Teacher observation, science journal	Caterpillars butterfly habitat crayons markers journals

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Strand: SCIENTIFIC THINKING AND PRACTICE	Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting and validating to think critically.	K-4 Benchmark III: Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.

Essential Question: What changes occur in the life cycles of a butterfly and/or chick?

Grade 2 Performance Standards	Grade 2 Textbook Pages <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Record observations on simple charts or diagrams. (R)	Unit A p. 122-123 (Butterfly and/or Chicks) Hypothesis, making inferences, recording and communicating data	TSW make predictions, collect and record data, and infer what happen to a chrysalis/egg to chick using their science journals. Assessment: Teacher observation, science journal	Science journals
2. Measure length, weight, and temperature with appropriate tools and express those measurements in accurate mathematical language. (R)	Egg to Chick project: Interpret data, similar concrete graph, pictorial graph, chart	TSW measure and record the differences in height of baby chicks using a pictorial graph. Assessment: Pictorial graph and science journal	Baby chicks Chart paper Markers Science journals Rulers

Grade 2 Science Curriculum Alignment with State Standards 2009

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Strand: CONTENT OF SCIENCE	Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.	K-4 Benchmark I: Recognize that matter has different forms and properties.
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Essential Question: What happens when oil is mixed with water? How can water change?

Grade 2 Performance Standards (3 rd nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Observe that properties of substances can change when they are mixed, cooled, or heated (e.g., salt dissolves in water, ice melts). (R)	Unit C p. 236 Hypothesis, making inferences, recording and communicating data	TSW combine oil and water to show that they do not mix and that oil floats on water. Assessment: participation, observation, journal writing	Science journals Infer-graphic organizers Food coloring Vegetable oil Cups Clear plastic jar http://tinyurl.com/cwprqd
2. Describe the changes that occur when substances are heated or cooled and change from one state of matter to another (i.e., solid, liquid, and gas). (R)	Unit C p. 244 Observable properties of solids, liquids, and gases.	TSW identify and describe the different states of matter by showing liquid takes the shape of the container. Assessment: Write sentences about solids and liquids in your science journal. Tell how solids and liquids are alike and different.	Multiple containers Water

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Strand: CONTENT OF SCIENCE	Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.	K-4 Benchmark II: Know that energy is needed to get things done and that energy has different forms.
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Essential Question: How does sound travel? How can sound be different? Where do we get energy? Where does heat come from and what does it do?

Grade 2 Performance Standards (3 rd nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Describe how heat can be produced (e.g., burning, rubbing, mixing some substances). .(I)	Unit C p. 278–281-Heat sources	TSW demonstrate how energy and matter interact by rubbing hands together and burning a candle. Assessment:	Candle http://tinyurl.com/dkud3o
2. Know that heat moves more rapidly in thermal conductors (e.g., metal pan) than in insulators (e.g., plastic handle .(I)	Unit C p.280-281 Heat sources	TSW create a list of conductors then sort by thermal or insulator. Assessment: Science journal, T-chart (thermal / conductor)	Pan Water Metal conductors (metal objects) Insulators (wood, plastic, cork) Heat source T chart-graphic organizer http://tinyurl.com/ccn6c6
3. Describe the usefulness of some forms of energy (e.g., electricity, sunlight, wind, sound) and how energy (e.g., heat, light,) can affect common objects (e.g., sunlight warms dark objects, heat melts candles). .(I)	Unit C p. 286–289 Usefulness of energy-	TSW demonstrate how forms of energy will affect objects such as allowing a candy bar melt in the sun. (candle burning, ice melting) Assessment: Observation, science journal	Candy bar Sunlight Science journal Ice Candle
4. Observe that sound is made by vibrating objects and describe it by its pitch and loudness. .(I)	Unit C p, 338–339 Sound caused by vibrations-hypotheses, making inferences, and recording and communicating data	TSW demonstrate how can be heard through the pitch of the sound by blowing into each bottle. Assessment: TSW illustrate and describe the pitch of each	4 bottles with different amounts of water in them Science journal http://tinyurl.com/dx83ql

		bottle of water using an analogy.	
5. Recognize that moving objects carry energy (kinetic energy). .(l)	267, 270–272, 274–275, 286–287 Everything you do uses energy.	TSW sort energy cards by the types of energy used. Assessment: After sorting the cards TSW or explain each type of energy used in the pictures.	Energy cards Science journal

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Strand: CONTENT OF SCIENCE	Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.	K-4 Benchmark III: Identify forces and describe the motion of objects.
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Essential Question: How do forces cause objects to move? How do people use magnets?

Grade 2 Performance Standards (3 rd nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Describe how the strength of a push or pull affects the change in an object's motion (e.g., how a big or small push affects how high a swing rises). (M)	Unit C p.300– Compare forces	TSW compare the amount of pushing and pulling required moving objects of various sizes across the floor. Assessment: Activity rubric, journaling	Rubber band Books Ruler http://tinyurl.com/c9drff http://tinyurl.com/cu7ejl
2. Observe that electrically charged materials and magnets attract and repel each other, and observe their effects on other kinds of materials. (I)	Unit C p 320, 322–323, Magnet- attract and repel	TSW compare objects that can be pushed or pulled by magnets (metal vs nonmetal) and analyzing finding in their science journal. Assessment: Science journal-	Magnets Paper clips Marbles

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Strand: CONTENT OF SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

K-4 Benchmark I: Know that living things have diverse forms, structures, functions, and habitats.

Essential Question: How do people grow and change?

Grade 2 Performance Standards (1st nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities/ Assessment	Resources / Materials
1. Observe that diversity exists among individuals within a population. .(I)	Unit A p.112– TSW know that all living things have offspring that resemble their parents.	Have children identify the ways in which animals (puppies, giraffe, kittens) look different. Assessment: Teacher observation	http://tinyurl.com/c4d3y6 Pictures of animals Science journal
2. Observe and describe various shapes of fungi. .(I)	This standard is covered in Grades 4 and 5 (Not in text)	TSW observe and collect data of fungi growing on bread. They will then create a cause and effect chart based on previous observation and data. Assessment: completed cause and effect chart	Baggies Bread Cause and effect chart
3. Know that bacteria and viruses are germs. .(I)	This standard is covered in Grade 3 (Not in text)	TSW create an inference chart to infer that bacteria and viruses are germs. Ex. Glitter germs. Assessment: Inference chart and participation of Glitter Germs	Inference chart http://atozteacherstuff.com/pates/334.shtml

Strand: CONTENT OF SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

K-4 Benchmark II: Know that living things have similarities and differences and that living things change over time.

Essential Question: How do living things grow in different ways?

Grade 2 Performance Standards (1st nine weeks)	Grade 2 Textbook Pages <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Explain that stages of the life cycle are different for different animals (e.g., mouse, cat, horse, butterfly, and frog). (R)	Unit A p.98–99,	TSW create posters that represent the life cycle of different animals. Assessment: Teacher observation, finished product	Poster board Research http://tinyurl.com/d84r2h http://tinyurl.com/c8hce8 www.earthsbirthday.org
2. Observe that many characteristics of the offspring of living organisms (e.g., plants or animals) are inherited from their parents. (R)	UA3, 106–107, 108–109, 110–111, 112–113, 114–115, 116–117, 118–121	TSW create a Venn Diagram that will compare young animals to their parents. (kitten, cat; puppy, dog, plants) Assessment: Rubric Activity, participation, teacher observation	Venn Diagram Pictures of animals and their young.
3. Observe how the environment influences some characteristics of living things (e.g., amount of sunlight required for plant growth). (R)	Unit A p.2	TSW illustrate and describe the environment in which each plant lives. Assessment: science journal	Science journal Sample of plants http://tinyurl.com/dnl4gg

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Strand: CONTENT OF SCIENCE	Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.	K-4 Benchmark III: Know the parts of the human body and their functions.
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Essential Question: What do nutrients do for your body? What do your organ do for your body?

Grade 2 Performance Standards (2 nd nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessments	Resources / Materials
1. Identify a variety of human organs (e.g., lungs, heart, stomach, brain) (R)	This objective is covered in Grades 4 and 5	TSW describe where their lungs, heart, stomach, and brain are located on a human body. Assessment: Correct location and labels of organs on diagram.	Chart paper Picture of organs Markers
2. Know that various nutrients are required for specific parts and functions of the body (e.g., milk for bones and teeth, protein for muscles, sugar for energy). (I)	This objective is covered in Grades 3 and 6	TSW create a food pyramid booklet. Assessment: Completion of pyramid booklet.	http://www.eduref.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Health/Nutrition/NUT0005.html
3. Identify the functions of human systems (e.g., respiratory, circulatory, digestive). (I)	This objective is covered in Grades 4, 5, and 6	TSW describe the functions of human systems such as respiratory (lungs), circulatory (heart), digestive (stomach). Assessment: Teacher observation and participation of student	Classroom discussion and participation Science journals

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Strand: CONTENT OF SCIENCE	Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.	K-4 Benchmark I: Know the structure of the solar system and the objects in the universe.
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Essential Question: What are some the earth moves? What can you see in the night sky? Is the sun a star?

Grade 2 Performance Standards (4 th nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Observe that the phase of the moon appears a little different every day but looks the same again after about four weeks. (M)	Unit D p.380–381	TSW illustrate a half Moon and full Moon and compare the two phases. Assessment: Science journal Rubric Activity, teacher observation	www.sfsuccessnet.com http://tinyurl.com/dftbap
2. Observe that some objects in the night sky are brighter than others. (M)	361E, 376–379, 380–381, 384–385, 392	TSW illustrate brighter objects shown as big dots and dimmer objects shown as smaller dots using chalk drawings. Assessment: Chalk drawings	Book: There Once Was a Sky Full of Stars, by Bob Crelin. http://tinyurl.com/ctpa5m
3. Know that the sun is a star. (M)	366–369, 376	TSW create a T-Chart explaining how the sun is like / different from other stars. Assessment: T-Chart completion, teacher observation	T Chart

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Strand: CONTENT OF SCIENCE	Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.	K-4 Benchmark II: Know the structure and formation of Earth and its atmosphere and the processes that shape them.
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Essential Question: What are rocks and soil like? What are the four seasons?

Grade 2 Performance Standards (4th nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Know that rocks have different shapes and sizes (e.g., boulders, pebbles, sand) and that smaller rocks result from the breaking and weathering of larger rocks. .(I)	Unit D p.148–149	TSW gather and sort rocks while distinguishing the similarities/differences of them. Assessment: Teacher observation	http://tinyurl.com/cq6hso
2. Understand that rocks are made of materials with distinct properties. .(I)	Unit D p.146–147	TSW examine rocks with magnifying glasses and describing the smaller materials in the rocks in their science journal. Assessment: Teacher observation,	Rocks Magnifying glasses Science journal
3. Know that soil is made up of weathered rock and organic materials, and that soils differ in their capacity to support the growth of plants. .(I)	xxii–xxv, 3, 22–23, 25, 138, 140, 141, 148–149, 152–153, 208–209, UD2	TSW examine different types of soil; then compare and contrast their finding in their science journal. Assessment: Teacher observation, science journal	Types of soil Science journal
4. Recognize the characteristics of the seasons. .(I)	UB2, 174–177, 180–181, 182–183, 184–185, 186–187, 196–197, 230–231, 361E, 374–375	TSW create a T-chart of favorite/least favorite season. List 3 reasons for their choice of most and least favorite.	http://tinyurl.com/cdmmeK

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Strand: SCIENCE AND SOCIETY	Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.	K-4 Benchmark I: Describe how science influences decisions made by individuals and societies.
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Essential Question: How do people make things? How do you prevent the spread of germs?

Grade 2 Performance Standards (2nd nine weeks)	Scott Foresman Science NM- Concepts/Skills <i>This concept skill may be developed from the inquires on these pages</i>	Activities / Assessment	Resources / Materials
1. Describe ways to prevent the spread of germs (e.g., soap, bleach, cooking). (M)	This objective is covered in Grade 3	TSW distinguish the amount of time to thoroughly wash their hand by participating in the computer game. Assessment: Participation of game	www.tinyurl.com/cef8rr
2. Know that science has ways to help living things avoid sickness or recover from sickness (e.g., vaccinations, medicine) and adult supervision is needed to administer them. .(I)	Unit D p.402–403	TSW describe real life experiences of having and x-ray and how they recovered from their sickness. Assessment: Teacher observation Science journal	Picture of X-ray (broken bone, non-broken bone)
3. Know that some materials are better than others for making particular things (e.g., paper, cardboard, plastic, metal, fiberglass, wood). .(I)	150–151, 408–409, 410–411	TSW select objects made from materials and write/illustrate about each material. Assessment: Teacher observation, Science journal	Paper Cardboard Plastic Metal Wood
4. Understand that everybody can do science, invent things, and formulate ideas. (M)	This objective also can be fulfilled as students do science in the inquiries throughout Scott Foresman Science . Here are some of the many inquiry pages: 26–27, 56–57, 68, 90–91, 100, 122–123, 132–133, 146–147, 194–195, 268, 290–291, 300, 322–323, 396, 410–411	TSW participate in a grade level science fair using the scientific method. Assessment: Grade level science fair displays.	Knowledge of scientific method Poster board "Teacher discretion
5. Know that science has discovered many things about objects, events, and nature and that there are many more questions to be answered. .(I)	UB1, UB4, 188–193, 200, 206–209, 210–211, 212–215, 216–217, 352, 394, 398–401, 402–403, 404–405, 406–407	TSW create/complete a KWL chart according to their science fair project. Assessment: Completion of	Classroom/individual KWL chart

		science fair project and KWL chart.	
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