

Strand: Science	Unit: Ideas and Inventions Rubbings	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...make/observe/discuss rubbings of textured objects (including venation pattern in leaves).	<b>J1</b>	<ul style="list-style-type: none"> <li>make accurate observations using appropriate tools and units of measure.</li> </ul>	Foss Science Kit “Ideas and Inventions”
...record/communicate properties of textured objects using rubbings.	<b>L1</b>  <b>L3</b>  <b>L4</b>	<ul style="list-style-type: none"> <li>Record results of experiments or activities (e.g., interviews, discussions, filed work) and summarize and communicate what has been learned.</li> <li>Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> <li>Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
... observe/discuss patterns and hidden message in a variety of materials.	<b>J3</b>	<ul style="list-style-type: none"> <li>Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> </ul>	
...invent games/organize systems based on rubbings.	<b>J4</b> <b>L4</b>	<ul style="list-style-type: none"> <li>Design and build an invention.</li> <li>Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	

Strand: Science	Unit: Ideas and Inventions Carbon Printing	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe/discuss/record patterns made by textured objects using the carbon-printing technique.	<b>J1</b> <b>L3</b>	<ul style="list-style-type: none"> <li>• make accurate observations using appropriate tools and units of measure.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	Foss Science Kit “Ideas and Inventions”
...make/compare/sketch/analyze prints of fingers (whorl, arch, loop).	<b>L4</b>	<ul style="list-style-type: none"> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
...invent a new way to use the carbon-printing technique.	<b>J4</b> <b>L4</b>	<ul style="list-style-type: none"> <li>• Design and build an invention.</li> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	

Strand: Science	Unit: Ideas and Inventions Reflecting	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...use mirrors to view their eyes and activities going on behind them.	<b>K3</b> <b>J1</b> <b>L3</b>	<ul style="list-style-type: none"> <li>• Draw conclusions about observations.</li> <li>• make accurate observations using appropriate tools and units of measure.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	Foss Science Kit “Ideas and Inventions”
...observe/investigate/discuss mirror images (reversals, symmetry in objects, etc.)	<b>K3</b> <b>J1</b> <b>L3</b>	<ul style="list-style-type: none"> <li>• Draw conclusions about observations.</li> <li>• make accurate observations using appropriate tools and units of measure.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...compare/record objects using symmetry as a property.	<b>K3</b> <b>J1</b> <b>L3</b>	<ul style="list-style-type: none"> <li>• Draw conclusions about observations.</li> <li>• make accurate observations using appropriate tools and units of measure.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...investigate how to reflect images from one mirror to another.	<b>J1</b> <b>L3</b>	<ul style="list-style-type: none"> <li>• make accurate observations using appropriate tools and units of measure.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...assemble a periscope.	<b>L4</b>	<ul style="list-style-type: none"> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
...invent ways to use mirrors to produce useful/aesthetically-pleasing products.	<b>J4</b>	<ul style="list-style-type: none"> <li>• Design and build an invention.</li> </ul>	
...explain invention and procedure to class.	<b>L1</b> <b>L4</b>	<ul style="list-style-type: none"> <li>• Record results of experiments or activities (e.g., interviews, discussions, filed work) and summarize and communicate what has been learned.</li> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	

Strand: Science	Unit: Water Water Observations	Grade Level: 04	Earth Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...investigate the properties of water.	<b>J2</b>	<ul style="list-style-type: none"> <li>Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> </ul>	Foss Science Kit "Water"
...observe/compare/record in a journal the way in which water interacts with four different surfaces.	<b>J2</b>	<ul style="list-style-type: none"> <li>Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> </ul>	
...observe the property of surface tension.	<b>E2</b>	<ul style="list-style-type: none"> <li>Explain how matter changes in both chemical and physical ways.</li> </ul>	
...predict/discuss how to change water's surface tension.	<b>J3</b>  <b>L3</b>	<ul style="list-style-type: none"> <li>Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> <li>Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...observe/compare/record on a table or graph the rates of different amounts of water flowing downhill.	<b>L4</b>	<ul style="list-style-type: none"> <li>Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
...communicate observations about water.	<b>L1</b>	<ul style="list-style-type: none"> <li>Record results of experiments or activities (e.g., interviews, discussions, fieldwork) and summarize and communicate what has been learned.</li> </ul>	

Strand: Science	Unit: Water Hot Water , Cold Water	Grade Level: 04	Earth Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe/compare/discuss the properties of water as frozen, heated, cooled.	<b>J2</b>  <b>L3</b>	<ul style="list-style-type: none"> <li>• Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	Foss Science Kit “Water”
...make a water thermometer.	<b>L4</b>	<ul style="list-style-type: none"> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
...observe/compare/record and communicate the density of water at different temperatures.	<b>J2</b>  <b>L1</b>	<ul style="list-style-type: none"> <li>• Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> <li>• Record results of experiments or activities (e.g., interviews, discussions, fieldwork) and summarize and communicate what has been learned.</li> </ul>	

Strand: Science	Unit: Water Water Vapor	Grade Level: 04	Earth Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe evaporation and condensation.	<b>F2</b>	<ul style="list-style-type: none"> <li>• Demonstrate an understanding that many things about the earth occur in cycles that vary in length and frequency.</li> </ul>	Foss Science Kit “Water”
...observe/compare/record/graph rates of evaporation under different conditions.	<b>J2</b> <b>L3</b> <b>L4</b>	<ul style="list-style-type: none"> <li>• Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	
...organize/communicate results from evaporation investigations.	<b>K3</b>	<ul style="list-style-type: none"> <li>• Draw conclusions about observations.</li> </ul>	
...set up condensation chambers.	<b>F2</b>	<ul style="list-style-type: none"> <li>• Demonstrate an understanding that many things about the earth occur in cycles that vary in length and frequency.</li> </ul>	
...explain/illustrate how evaporation and condensation contribute to water cycle.	<b>F4</b> <b>L1</b> <b>L4</b>	<ul style="list-style-type: none"> <li>• Illustrate how water and other substances go through a cyclic process of change in the environment.</li> <li>• Record results of experiments or activities (e.g., interviews, discussions, fieldwork) and summarize and communicate what has been learned.</li> <li>• Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	

Strand: Science	Unit: Water Waterworks	Grade Level: 04	Earth Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe/compare/record in a journal what happens when water is poured through soil and gravel.	<b>J2</b> <b>L3</b>	<ul style="list-style-type: none"> <li>Consider scientific investigations: make observations, collect and analyze data, and do experiments.</li> <li>Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	Foss Science Kit “Water”
...construct a water wheel.	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.	
...use a water wheel to lift objects.	<b>J2</b>	Conduct scientific investigations: make observations, collect and analyze data, and do experimentation.	
...record/communicate observations about objects lifted by a water wheel.	<b>L1</b>	<ul style="list-style-type: none"> <li>Record results of experiments or activities (e.g., interviews, discussions, fieldwork) and summarize and communicate what has been learned.</li> </ul>	
...collect/examine/record in a journal the properties of water collect from local sources.	<b>L3</b>	<ul style="list-style-type: none"> <li>Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...communicate their findings about water collected from local sources.	<b>L1</b>	<ul style="list-style-type: none"> <li>Record results of experiments or activities (e.g., interviews, discussions, fieldwork) and summarize and communicate what has been learned.</li> </ul>	

Strand: Science	Unit: Magnetism/Electricity The Force	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe/describe magnetic interactions.	<b>I1</b>  <b>J1</b>	<ul style="list-style-type: none"> <li>Describe the effects of different types of forces (e.g., mechanical, electrical, magnetic) on motion.</li> <li>Make accurate observations using appropriate tools and units of measure.</li> </ul>	Foss Science Kit “Magnetism/Electricity”
...sort/record/communicate to others the objects affected/unaffected by a magnet.	<b>L1</b>	<ul style="list-style-type: none"> <li>Record results of experiments or activities, (e.g., interviews, discussions, fieldwork), and summarize and communicate what has been learned.</li> </ul>	
...measure/record/communicate the force of attraction between two magnets.	<b>J2</b>	<ul style="list-style-type: none"> <li>Conduct scientific investigations: make observations, collect and analyze data, and do experiments.</li> </ul>	

Strand: Science	Unit: Magnetism/Electricity Making Connections	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...investigate/build/test circuit (current electricity).	<b>J2</b>	<ul style="list-style-type: none"> <li>Conduct scientific investigations: make observations, collect and analyze data, and do experiments</li> </ul>	Foss Science Kit “Magnetism/Electricity”
...test objects for conductivity.	<b>J2</b>	<ul style="list-style-type: none"> <li>Conduct scientific investigations: make observations, collect and analyze data, and do experiments.</li> </ul>	
...predict conductivity of materials.	<b>J3</b>	<ul style="list-style-type: none"> <li>Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> </ul>	
...sort materials based on conductivity.	<b>J1</b>	<ul style="list-style-type: none"> <li>Make accurate observations using appropriate tools and units of measure.</li> </ul>	

Strand: Science	Unit: Magnetism/Electricity Advanced Connections	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...observe the functioning of series vs. parallel circuits.	<b>J1</b>	<ul style="list-style-type: none"> <li>• Make accurate observations using appropriate tools and units of measure.</li> </ul>	Foss Science Kit “Magnetism/Electricity”
...compare/discuss brightness of lamps in series vs. parallel circuits.	<b>L3</b>	<ul style="list-style-type: none"> <li>• Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>	
...determine (through observed patterns) characteristics of series/parallel circuits.	<b>J3</b>	<ul style="list-style-type: none"> <li>• Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> </ul>	
...analyze/solve circuitry problems.	<b>J2</b> <b>K3</b>	<ul style="list-style-type: none"> <li>• Conduct scientific investigations: make observations, collect and analyze data, and do experiments.</li> <li>• Draw conclusions about observations.</li> </ul>	

Strand: Science	Unit: Magnetism/Electricity Current Attractions		Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources	
...make an electromagnet.	<b>L4</b>	<ul style="list-style-type: none"> <li>Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.</li> </ul>	Foss Science Kit “Magnetism/Electricity”	
...observe interaction between an electromagnet and objects.	<b>J1</b>	<ul style="list-style-type: none"> <li>Make accurate observations using appropriate tools and units of measure.</li> </ul>		
...predict ways to strengthen electromagnets.	<b>J3</b>	<ul style="list-style-type: none"> <li>Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> </ul>		
...conduct experiments on ways to strengthen electromagnets.	<b>J2</b>	<ul style="list-style-type: none"> <li>Conduct scientific investigations: make observations, collect and analyze data, and do experiments.</li> </ul>		
...compare/record/discuss strength of electromagnets.	<b>L3</b>	<ul style="list-style-type: none"> <li>Reflect on work in science and technology using such activities as discussions, journals, and self-assessment.</li> </ul>		
...average/graph/communicate results of experiments.	<b>L4</b>  <b>L1</b>	<ul style="list-style-type: none"> <li>Make and/or use sketches, tables, graphs, physical representations and manipulatives to explain procedures and ideas.</li> <li>Record results of experiments or activities, (e.g., interviews, discussions, fieldwork), and summarize and communicate what has been learned.</li> </ul>		

Strand: Science	Unit: Magnetism/Electricity Click It	Grade Level: 04	Physical Science
Objective: Student will ...	Learning Results Performance Indicators & Code		Instructional Resources
...build a telegraph system using concepts learned from previous lessons.	<b>J3</b>  <b>K3</b> <b>L4</b>	<ul style="list-style-type: none"> <li>• Use results in a purposeful way: design fair tests, make predictions based on observed patterns, and interpret data to make further predictions.</li> <li>• Draw conclusions about observations.</li> <li>• Make and/or use sketches, tables, graphs, physical representations and manipulatives to explain procedures and ideas.</li> </ul>	Foss Science Kit “Magnetism/Electricity”
...encode/decode clicks produced by telegraph.	<b>J1</b>	<ul style="list-style-type: none"> <li>• Make accurate observations using appropriate tools and units of measure.</li> </ul>	

Strand: Science	Unit: Plants	Grade Level: 04	Life Science
Objective: Students will...	Learning Results Performance Indicators & Code		Instructional Resources
...describe/sort/compare seeds using different properties	<b>A1</b>	Group the same organisms in different ways using different characteristics.	Budding Botanist (an AIMS activity book, grades 3-6), p. 5-12 Silver Burdet Science text, 1987, p. 30-31 Scott Foresman Science text, 2000 p. A6
	<b>J1</b>	Make accurate observations using appropriate tools and units of measure.	
...dissect/compare/contrast/sketch parts of a seed.	<b>A4</b>	Compare and contrast the life cycles, behavior, and structure of different organisms.	Budding Botanist, p. 13-16 Silver Burdet, p. 30-31 FOSS Science Kit, Structures of Life, Investigation 1: "Seed Soak" FOSS website: www.fossweb.com
	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.	
... compare/group/record/graph the numbers and properties of seeds from a variety of fruits	<b>A1</b>	Group the same organisms in different ways using different characteristics.	Budding Botanist, p. 54-57
	<b>A4</b>	Compare and contrast the life cycles, behavior, and structure of different organisms.	
	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedure and ideas.	
	<b>J2</b>	Conduct scientific investigations: make observations, collect and analyze data, and do experiments.	
...observe/sketch/graph forms of seed dispersal	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.	Budding Botanist, p. 17-21
...observe/compare/sketch/graph germination in a variety of seeds	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.	Scott Foresman, P. A26-A31 Budding Botanist, p. 22-24; 28-34 FOSS Science Kit, Structures of Life, Investigation 1: "The Sprouting Seed"; Investigation 2: "Germination"; Investigation 2: "Life Cycle of the Bean" FOSS website: www.fossweb.com

Strand: Science	Unit: Plants continued	Grade Level: 04	Life Science
Objective: Students will...	Learning Results Performance Indicators & Code		Instructional Resources
...describe/sort/compare plants using different properties.	<b>A1</b>  <b>A4</b>	Group the same organisms in different ways using different characteristics. Compare and contrast the life cycles, behavior, and structure of different organisms.	Budding Botanist, p. 1-4
... design/describe a classification system for plants (comparing/contrasting seed plants and non-seed plants).	<b>A2</b>	Design and describe a classification system for organisms.	Scott Forsman, A8 – A14 Budding Botanist, p. 35 – 39 Silver Burdet, P. 26 - 43
...observe/compare/sketch/record structures and functions of plant parts.	<b>A4</b>  <b>J2</b>	Compare and contrast the life cycles, behavior, and structure of different organisms. Conduct scientific investigations: make observations, collect and analyze data, and do experiments.	Budding Botanist, p. 49 – 53 Scott Forsman, p. A15 – A18; A24 – A25
...observe/investigate various ecosystems, describing plants a <b>producers</b> (plants that make their own food) or <b>decomposers</b> (use waste materials/dead organisms as food: bacteria and fungi).	<b>A3</b> <b>B2</b>  <b>J2</b>	Describe the different living things within a given habitat. Explain the difference between producers, consumers, and decomposers, and identify examples of each. Conduct scientific investigations: make observations, collect and analyze data, and do experiments.	Nature films Field trip to arboretum Nature hike
...describe/discuss role of producer/decomposer in food web within a given ecosystem.	<b>A3</b> <b>A4</b>  <b>B1</b>	Describe the different living things within a given ecosystem. Compare and contrast the life cycles, behavior, and structure of different organisms. Describe a food web and the relationships within a given ecosystem.	Nature films Nature hike
...describe/discuss plants and their relationship to consumers in a variety of ecosystems' food web.	<b>A4</b>  <b>B1</b>	Compare and contrast the life cycle, behavior, and structure of different organisms. Describe a food web and the relationships within a given ecosystem.	Nature films Nature hike

Strand: Science	Unit: Plants continued	Grade Level: 04	Life Science
Objective: Students will...	Learning Results Performance Indicators & Code		Instructional Resources
...investigate/discuss different biomes (tundra, rain forest, desert, ocean, etc.) and adaptations of plant life found in each.	<b>A3</b> <b>A4</b> <b>B3</b>	Describe the different living things within a given habitat. Compare and contrast the life cycles, behavior, and structure of different organisms. Compare and contrast physical and living components of different biomes- i.e., regions characterized by their climate and plant life- (e.g., tundra, rainforest, ocean, and desert).	Budding Botanist, p. 90 – 92 Silver Burdet, Science Text, grade 6, 1989, p. 78 - 101
...observe prepared slides of a variety of plant cells under a microscope	<b>C3</b>	Explore how the use of a microscope allows one to see cells in a variety of organisms.	Budding Botanist, p. 58 - 89
...observe/describe structure and function of each part of a flower	<b>A4</b>	Compare and contrast the life cycles, behavior, and structure of different organisms.	Scott Forsman, p. A15 – A18 Silver Burdet, p. 30
...dissect/compare/contrast/sketch parts of a flower	<b>L4</b>	Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas.	Budding Botanist, p. 93
...plan/conduct a plant experiment/project. (Radish seeds are a good choice.)	<b>J1</b>	Make accurate observations using appropriate tools and units of measure.	FOSS website: <a href="http://www.fossbweb.com">www.fossbweb.com</a>