

Grade 1

Unit 2—Properties of Matter Diversity (FOSS® Solids and Liquids) *Physical Science***Essential Question: What are some properties of solids, liquids, and gases?****Major Understandings:** *Quoted from New York State Performance Indicators***(Note: Correlation is provided at the level of FOSS “Investigation & Part.” All “Steps” of an investigation must be completed to meet the standard.)****PS 2.1 Describe the relationship between air, water and land on Earth.**

- 2.1c Water is recycled by natural processes on Earth.
- evaporation: changing of water (liquid) into water vapor (gas)
 - condensation: changing of water vapor (gas) into water (liquid)
 - precipitation: rain, sleet, snow, hail
 - runoff: water flowing on Earth’s surface
 - groundwater: water moves downward into the ground

PS 3.1 Observe and describe properties of materials using appropriate tools.

- 3.1c Objects have properties that can be observed, described, and/or measured: length, width, volume, size, shape, mass or weight, temperature, texture, flexibility, reflectiveness of light.
- 3.1d Measurements can be made with standard metric units and nonstandard units.
- 3.1e Materials an object is made up of determine some specific properties of the object (sink/float, conductivity, magnetism). Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets, circuit testers, and graduated cylinders.
- 3.1f Objects and / or materials can be sorted or classified according to their properties.
- 3.1g Some properties of an object are dependent on the conditions of the present surroundings in which an object exists. For example:
- temperature – hot or cold
 - lighting – shadows, color
 - moisture – wet or dry

PS 3.2 Describe chemical and physical changes, including changes in states of matter.

- 3.2a Matter exists in three states: solid, liquid, gas.
- solids have a definite shape and volume
 - liquids do not have a definite shape but have a definite volume
 - gases do not hold their shape or volume
- 3.2c Changes in the properties of materials of objects can be observed and described.

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Consult the FOSS[®] Insects Teacher Guide:**Overview**

Science Background, pp. 3-4. The concepts of solid and liquid states of matter are explored in this unit. Interactions between solids, between liquids and between solids and liquids will be explored. [Air (gas) as matter will be explored in Unit 3: Weather and Seasons, FOSS[®] Air and Weather.] This module is best undertaken including opportunities for free exploration and sharing of ideas. This perspective is addressed in the Overview: Science for Young Children, and Organizing the Classroom sections. Note that FOSS “Center” investigations are supervised experiences; this module includes both whole class and center activities.

Materials

There are 3 boxes for this kit. Boxes 1 & 2 contain Permanent and Consumable materials and equipment. Box 3 contains 5 “Bus Trays” used to organize materials and contain materials when transferring solids and liquids between containers.

“Materials Supplied by the Teacher” (items not included in your kit), pp. 4-5;

“Preparing a New Kit,” pp. 6-8;

“Preparing the Kit for Your Classroom,” pp. 9-11.

- **View the FOSS Solids and Liquids Module Introduction and Before You Begin segments of the FOSS Teacher Preparation Video / DVD (also available online at <http://www.fossweb.com/modulesK-2/SolidsandLiquids/index.html> .)**
- **Collect the “Materials Supplied by the Teacher” needed to prepare a new kit.** Many items will be gathered from your classroom. Grocery items are needed for Investigations 2, 3 and 4.

Investigation 2: Liquids (Preview the FOSS Teacher Preparation Video / DVD, Investigation 2, Part 1: Liquids in Bottles.)

The bottles in Investigation 2 (5 sets of 7 bottles) are filled with liquids and once filled considered “permanent equipment” and NEVER opened. Purchase:

Cooking oil, (1/2 liter) 16 oz. = 1 pint

Corn syrup, (1/2 liter) 16 oz. = 1 pint

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Liquid hand soap, (1/2 liter) 16 oz. = 1 pint

Liquid fabric softener or starch, (1/2 liter) 16 oz. = 1 pint

Approximately 10 oz. are used to fill bottles for Investigation 2; the remaining liquids will be consumed in Investigation 4. You will need small amounts (8oz. = 1 cup) of each liquid in subsequent years each time you use the module. If you have several kits in your school, calculate the volume of the liquids you will need for a few uses for all teachers and purchase accordingly.

Investigation 3: Bits and Pieces

15-bean Soup mix (optional) but fun!

Investigation 4: Solids and Liquids with Water

This is a whole class activity – you may need twice as much of each item if you wish to conduct this as a Center.

Raisins (2-3 ‘snack’ size boxes)

(6) small cookies (broken in pieces)

- Follow the link: http://www.delta-education.com/science/foss/foss_msds.aspx to check for Material Safety Data Sheets for Grade 1 kits.
- A list of items used in FOSS kits that contain latex can be downloaded at http://www.delta-education.com/science/foss/foss_msds.aspx.

Consider Recording Observations:

Download the Science Notebook Folio on the Teacher Resources page at www.fossweb.com/NYC for more information. Focus/Inquiry questions are found in the “At A Glance” Chart for each Investigation. Use of a student notebook will reinforce the standards addressed in Unit 2 which ask students to “Observe and DESCRIBE” the properties of matter. Attention should be paid to using vocabulary to describe the properties of solids and liquids and interactions and changes of solids and liquids.

Consider “Interdisciplinary Extensions” in Language Arts, Math, Art and Science to accompany this module:

See Investigation 1: Solids, p. 25: Interdisciplinary Extensions, Language Extensions: Make “My Book of Solids” and Draw and Label Constructions to reinforce Science Notebook entries.

Review suggestions for fiction and nonfiction student reading in the Resources section of the Solids and Liquids Teacher Guide including:

Bartholomew and the Oobleck by Dr. Seuss. Random House, New York, 1970.

Horrible Harry and the Green Slime by Suzy Kline. Puffin, New York, 1998

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| WEEK 1 | <p>Lesson 1 (45 min) Objective(s): Pre-assessment.</p> | <p>Alignment with NYS Core Curriculum: PS 2.1c; 3.1c, f; PS 3.2a, c</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Note: Administration of the Pre-Test should be a few days BEFORE the start of the unit. – Teacher Guide, Assessment Folio, pp. 1-12 – Kit preparation: see Teacher Guide, Materials, pp. 1-11 and Teacher Preparation Video or DVD (or view at www.fossweb.com/nyc) – Note: see Teacher Guide, Materials, p. 4 for Materials Supplied by the Teacher – Gather materials as noted above for Investigations 2, 3, and 4. – Review the Overview folio of the Teacher Guide taking special note of pp. 3-4: Science Background; pp. 6-7: Science for Young Children; pp. 8-9: Organizing the Classroom; p. 16: Safety in the Classroom; p. 18: Solids and Liquids Module Matrix. | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – End-of-Module Assessment, Written Assessment may be administered as a Pre-Test. Use Assessment Duplication Masters Nos. 5, 6, 7 (Questions 1-5) – Letter to Parents, Teacher Sheet No. 1 <p>Note: The Letter to Parents in your Teacher Guide informs parents and caregivers about upcoming experiences for students. Resources found on Fossweb.com will help you connect parents and caregivers to student learning. Log on to www.fossweb.com/nyc:</p> <ul style="list-style-type: none"> • Go to Grade 1, click on Solids and Liquids; • Click on “Teacher/Parent Info”; • Click on “Home/School Connection”; • Download the “FOSS® at Home” Folio. | <p style="text-align: center;">Homework/ Extra Practice</p> <p>Send home Letter to Parents.</p> |

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| WEEK 1 (continued) | <p>Lesson 2 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solids are one state of matter. • Solid materials have properties that separate them from other states of matter. • We use our senses to observe the properties of solids. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teacher</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids, pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 1: Introduce Solids, Materials, and Getting Ready pp. 8-12 – <i>Taking note of p. 12, Step 11.</i> – Consider Science Notebooks: Download the FOSS Science Notebooks folio at www.fossweb.com/nyc. – www.fossweb.com/NYC – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching Solids and Liquids. | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 1: Introduce Solids, pp. 13-16, Steps 1-6 – Investigation Duplication Master: Teacher Sheet No. 1 – Investigation Duplication Master: Student Sheet No. 2 (optional) – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note:</p> <p>Recording in the student notebook takes the place of Student Sheet No. 2.</p> <p>Use the Focus Question: “How can solids be described?”</p> <p>A sample sentence frame to guide the student entry: The (object name) is (describing property). <i>For example:</i> “The triangle is pointy.”</p> | <p style="text-align: center;">Homework/ Extra Practice</p> <p>When appropriate based on acquisition of Math concepts:</p> <p>Math Extension A – Student Sheet No. 31</p> |

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| WEEK 1 (continued) | <p>Lesson 3 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solids are one state of matter. • Solid materials have properties that separate them from other states of matter. • We use our senses to observe the properties of solids. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids, pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 1: Introduce Solids, Materials and Getting Ready, pp. 8-12 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 1: Introduce Solids, pp. 13-16, Steps 7-13 – Investigation Duplication Master: Teacher Sheet No. 1 – Investigation Duplication Master: Student Sheet No. 2 (optional) – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note: The Focus Question: “What are some properties of solid objects?” may be used for student notebook entries.</p> | <p style="text-align: center;">Homework/ Extra Practice</p> |

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| WEEK 2 | <p>Lesson 4 (45 min) Objective(s):</p> <ul style="list-style-type: none"> • Solids can be sorted by their properties. • We use our senses to observe the properties of solids. • Solid materials have properties that separate them from other states of matter. | | <p>Alignment with NYS Core Curriculum: PS 3.1c, f; PS 3.2a</p> |
| | <p>Advanced Planning/ Notes to Teacher</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids, pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 2: Sort Solid Objects, Materials and Getting Ready pp. 17-18 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 2: Sort Solid Objects, pp. 19-20, Steps 1-7 through Paragraph 1. (Collect papers and objects in zip top bags.) – Investigation Duplication Master: Student Sheet No. 3 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note: The Focus Question: “In what ways are some solids the same?” may be used for student notebook entries.</p> | <p style="text-align: center;">Homework/Extra Practice</p> |

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| WEEK 2 (continued) | <p>Lesson 5 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solids can be sorted by their properties. • We use our senses to observe the properties of solids. • Solid materials have properties that separate them from other states of matter. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids, pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 2: Sort Solid Objects, Materials and Getting Ready, pp. 17-18 | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 2: Sort Solid Objects, pp. 19-20, Step 7, Paragraphs #2-10. – Investigation Duplication Master: Student Sheet No. 3 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note:</p> <p>The Focus Question: “In what ways are some solids the same?” may be used for student notebook entries.</p> | <p>Homework/Extra Practice</p> <p>Home/School Connection, Student Sheet No. 39</p> |

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| WEEK 2 (continued) | <p>Lesson 6 (45 min) Objective(s):</p> <ul style="list-style-type: none"> • Solid materials have distinct uses based on their properties. • Engineers are scientists who use their knowledge of materials to design useful objects and structures. | | <p>Alignment with NYS Core Curriculum: PS 3.1c, e, f, g; PS 3.2a</p> |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids, pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 3: Construct with Solids, Materials and Getting Ready, pp. 21-22 – Teacher Guide Science Stories folio, pp. 2-4 | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 3: Construction With Solids, pp. 23-24, Steps 1-7 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note: The Focus Question: “How can the properties of solids be used?” may be used for student notebook entries.</p> <p>Note: You may wish to spend more than one session on tower construction, or schedule a double period to work on towers. Having the first session of tower building in Art Class and continuing in Science is another option.</p> | <p>Homework/Extra Practice</p> |

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| | <p>Lesson 7 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solid materials have distinct uses based on their properties. • Engineers are scientists who use their knowledge of materials to design useful objects and structures. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, e, f, g; PS 3.2a</p> | |
| WEEK 3 | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 1: Solids pp. 1-7 – Teacher Guide Inv. 1: Solids, Part 3: Construct with Solids, Materials and Getting Ready, pp. 21-22 – Teacher Guide Science Stories folio, pp. 2-4 – Consider Interdisciplinary Extensions, Language Extensions: Make “My Book of Solids” <i>(or defer to Investigation 3, Part 1 – Lesson 13)</i> – Draw and Label Constructions. | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 1: Solids Part 3: Construction With Solids, pp. 23-24, Steps 8-11 – Investigation Duplication Master: Student Sheet No. 4 (optional) – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Notes:</p> <p>The Focus Question: “How can the properties of solids be used?” may be used for student notebook entries.</p> <p>Consider setting up a “Science Corner” station to conduct Step 11 over several days.</p> <p>Read Science Stories: pp. 3-7 <i>Everything Matters</i></p> <p>For link to the Solids and Liquids Science Stories Audio Stories log on to www.fossweb.com/nyc: Go to Grade 1, click on Solids and Liquids; click on “Media”; click on Audio Stories.</p> | <p style="text-align: center;">Homework/Extra Practice</p> <p>Math Extension B – Student Sheet No. 32</p> |

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| | <p>Lesson 8 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> Liquids are one state of matter. Liquids have many properties. Liquids pour and flow. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f, g; PS 3.2a</p> | |
| WEEK 3 (continued) | <p>Advanced Planning/Notes to Teachers</p> <ul style="list-style-type: none"> Teacher Guide Inv. 2: Liquids pp. 1-9 Teacher Guide Inv. 2: Liquids, Part 1: Liquids in Bottles, Materials and Getting Ready, pp. 10-12 <i>Refer to p. 9 for strategies to conduct this lesson over 2 or more days.</i> Consider Science Notebooks: Download the FOSS Science Notebooks folio at www.fossweb.com/nyc. Consider Interdisciplinary Extensions, p. 30, Science Extensions: Conduct Floating and Sinking Investigations. www.fossweb.com/NYC – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching Solids and Liquids. | <p>Investigation/Activity</p> <ul style="list-style-type: none"> Investigation 2: Liquids Part 1: Liquids in Bottles, pp. 13-14, Steps 1-9 Investigation Duplication Master: Teacher Sheet No. 5 Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Notes:</p> <p>The Focus Question: “How do liquids differ from each other?” may be used for student notebook entries.</p> | <p>Homework/Extra Practice</p> |

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| | <p>Lesson 9 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Liquids are one state of matter. • Liquids have many properties. • Liquids pour and flow. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f, g; PS 3.2a</p> | |
| WEEK 3 (continued) | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 2: Liquids pp. 1-9 – Teacher Guide Inv. 2: Liquids, Part 1: Liquids in Bottles, Materials and Getting Ready, pp. 10-12 – <i>Refer to p. 9 for strategies to conduct this lesson over 2 or more days.</i> – Consider Science Notebooks: Download the FOSS Science Notebooks folio at www.fossweb.com/nyc. – Consider Interdisciplinary Extensions, p. 30, Science Extensions: Conduct Floating and Sinking Investigations. – www.fossweb.com/NYC – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching Solids and Liquids. | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 2: Liquids Part 1: Liquids in Bottles, pp. 13-14, Steps 1-9 – Investigation Duplication Master: Teacher Sheet No. 5 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Notes:</p> <p>The Focus Question: “How do liquids differ from each other?” may be used for student notebook entries.</p> | <p>Homework/Extra Practice</p> |

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| WEEK 4 | <p>Lesson 10 (45 min)</p> <p>Objective(s): Liquids have many properties.</p> | <p>Alignment with NYS Core Curriculum: PS 3.1c, f, g; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 2: Liquids pp. 1-9 – Teacher Guide Inv. 2: Liquids, Part 2: Properties of Liquids, Materials and Getting Ready pp. 15-17 <p><i>Taking note of p. 17, Step 6.</i></p> | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 2: Liquids Part 2: Properties of Liquids, pp. 18-20, Steps 1-9 – Investigation Duplication Master: Teacher Sheet No. 6 – Investigation Duplication Master: Student Sheet No. 7, (8 optional) – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Note: When recording in the student notebook takes the place of Student Sheet No. 8; use the Focus Question: “How do liquids differ from each other?” A sample sentence frame to guide the student entry: This liquid is (describing property). <i>For example:</i> “This liquid is <u>foamy</u>.”</p> <p>Note: It is not necessary to identify the liquids by name in this part.</p> | <p style="text-align: center;">Homework/Extra Practice</p> |

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| WEEK 4 (continued) | <p>Lesson 11 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> Liquids pour and flow. Liquids take the shape of their container. The surface of a liquid is level with respect to the ground. Solids and liquids have distinct properties that separate them as two states of matter. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, d, f, g; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> Teacher Guide Inv. 2: Liquids, pp. 1-9 Teacher Guide Inv. 2: Liquids, Part 3: Liquid Level, Materials and Getting Ready pp. 21-23 <p><i>Refer to p. 9 for strategies to conduct this lesson over 2 or more days.</i></p> <ul style="list-style-type: none"> Teacher Guide Science Stories folio, pp. 5-7 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> Investigation 2: Liquids Part 3: Liquid Level, pp. 24-27, Steps 1-7 Investigation Duplication Master: Teacher Sheet No. 16 Investigation Duplication Master: Student Sheets Nos. 17, 18, 19 Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Questions:</p> <p>“How do liquids flow when a bottle is tipped upside down?”</p> <p>“How does the same amount of liquid look in various shapes of containers?”</p> <p>“In what ways are liquids the same?”</p> | <p style="text-align: center;">Homework/ Extra Practice</p> |

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| | <p>Lesson 12 (45 min) Objective(s):</p> <ul style="list-style-type: none"> Liquids pour and flow. Liquids take the shape of their container. The surface of a liquid is level with respect to the ground. Solids and liquids have distinct properties that separate them as two states of matter. | <p>Alignment with NYS Core Curriculum: PS 3.1c, d, f, g; PS 3.2a</p> | |
| WEEK 4 (continued) | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> Teacher Guide Inv. 2: Liquids, pp. 1-9 Teacher Guide Inv. 2: Liquids, Part 3: Liquid Level, Materials and Getting Ready pp. 21-23 <p><i>Refer to p. 9 for strategies to conduct this lesson over 2 or more days.</i></p> <ul style="list-style-type: none"> Teacher Guide Science Stories folio, pp. 5-7 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> Investigation 2: Liquids Part 3: Liquid Level, pp. 24-27, Steps 8-13 Investigation Duplication Master: Teacher Sheet No. 16 Investigation Duplication Master: Student Sheets Nos. 17, 18, 19 Investigation Duplication Master: Student Sheet No. 20 –optional Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Questions: “How do liquids flow when a bottle is tipped upside down?” “How does the same amount of liquid look in various shapes of containers?” “In what ways are liquids the same?”</p> <p>Read Science Stories: pp. 8-13 <i>Solids and Liquids</i></p> <p>For link to the Solids and Liquids Science Stories Audio Stories log on to www.fossweb.com/nyc: Go to Grade 1, click on Solids and Liquids; click on “Media”; click on Audio Stories.</p> | <p style="text-align: center;">Homework/ Extra Practice</p> <p>Math Extension A – Student Sheet No. 33</p> |

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| | <p>Lesson 13 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solid materials come in all sizes and shapes. • Particles of solid materials can pour like liquids, but each particle maintains its shape. • Solid materials can support denser materials on their surface. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, d, e; PS 3.2a</p> | |
| WEEK 5 | <p>Advanced Planning/Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 1: Solids in Containers, Materials and Getting Ready, pp. 8-10 <p><i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i></p> <ul style="list-style-type: none"> – Consider Science Notebooks: Download the FOSS Science Notebooks folio at www.fossweb.com/nyc . – www.fossweb.com/NYC – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching Solids and Liquids. | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 1: Solids in Containers, pp. 11-13, Steps 1-9 – Investigation Duplication Master: Teacher Sheet No. 21 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “Are these materials solids or liquids?”</p> | <p style="text-align: center;">Homework/Extra Practice</p> |

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| WEEK 5 (continued) | <p>Lesson 14 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Solid materials come in all sizes and shapes. • Particles of solid materials can pour like liquids, but each particle maintains its shape. • Solid materials can support denser materials on their surface. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, d, e; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 1: Solids in Containers, Materials and Getting Ready, pp. 8-10 <p><i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i></p> | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 1: Solids in Containers, pp. 11-13, Steps 10-12 – Investigation Duplication Master: Teacher Sheet No. 21 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “Are these materials solids or liquids?”</p> | <p>Homework/Extra Practice</p> <p>Home/School Connection, Student Sheet No. 41</p> |

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| WEEK 5 (continued) | <p>Lesson 15 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> Mixtures of solid particles can be separated with a screen. Solid materials come in all sizes and shapes. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1d, f; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 Teacher Guide Inv. 3: Bits and Pieces, Part 2: Separating Soup Mix, Materials and Getting Ready, pp. 14-16 <p><i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i></p> | <p>Investigation/Activity</p> <ul style="list-style-type: none"> Investigation 3: Bits and Pieces Part 2: Separating Soup Mix, pp. 17-18, Steps 1-8 Investigation Duplication Master: Teacher Sheet No. 22 Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How can mixtures of solid particles be separated?”</p> | <p>Homework/Extra Practice</p> |

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| WEEK 6 | Lesson 16 (45 min) Objective(s): <ul style="list-style-type: none"> Mixtures of solid particles can be separated with a screen. Solid materials come in all sizes and shapes. | | Alignment with NYS Core Curriculum: PS 3.1d, f; PS 3.2a |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 Teacher Guide Inv. 3: Bits and Pieces, Part 2: Separating Soup Mix, Materials and Getting Ready, pp. 14-16 <i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i> | Investigation/Activity <ul style="list-style-type: none"> Investigation 3: Bits and Pieces Part 2: Separating Soup Mix, pp. 17-18, Steps 9-12 Investigation Duplication Master: Teacher Sheet No. 22 Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist Use the Focus Question: “How can mixtures of solid particles be separated?” | Homework/Extra Practice Math Extension A – Student Sheet No. 35 |

Grade 1

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| WEEK 6 (continued) | <p>Lesson 17 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Senses of sight, hearing, and touch can be used to observe the properties of materials. • Particles of solid materials can pour like liquids, but unlike liquids they maintain their shape. • The behavior of small solids has similarities to and differences from that of liquids. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, d, f, g; PS 3.2a</p> | |
| | <p>Advanced Planning/Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 3: Solids in Bottles, Materials and Getting Ready, pp. 19-21 <p><i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i></p> | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 3: Solids in Bottles, pp. 22-18, Steps 1-6 – Investigation Duplication Master: Teacher Sheet No. 23 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do particles of solids move in bottles?”</p> | <p style="text-align: center;">Homework/Extra Practice</p> |

Grade 1

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| WEEK 6 (continued) | <p>Lesson 18 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Senses of sight, hearing, and touch can be used to observe the properties of materials. • Particles of solid materials can pour like liquids, but unlike liquids they maintain their shape. • The behavior of small solids has similarities to and differences from that of liquids. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, d, f, g; PS 3.2a</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 3: Solids in Bottles, Materials and Getting Ready pp. 19-21 <p><i>Refer to p. 7 for strategies to conduct this lesson over 2 or more days.</i></p> | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 3: Solids in Bottles, pp. 22-18, Steps 7-11 – Investigation Duplication Master: Teacher Sheet No. 23 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do particles of solids move in bottles?”</p> | <p>Homework/Extra Practice</p> |

Grade 1

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| | <p>Lesson 19 (45 min)</p> <p>Objective(s): Mixtures of solid particles can be separated with a screen.</p> | <p>Alignment with NYS Core Curriculum: PS 3.1d, g; PS 3.2a, c</p> | |
| WEEK 7 | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 4: Separating Beads with a Screen, Materials and Getting Ready, pp. 24-25. – Teacher Guide Science Stories folio, pp. 8-9 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 4: Separating Beads with a Screen, pp. 26-27, Steps 1-4 – Investigation Duplication Master: Teacher Sheet No. 26 (if needed) – Investigation Duplication Master: Student Sheet No. 24 or 25 – Assessment Duplication Master No. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do you know which screens to use for separating a mixture of solids?”</p> | <p style="text-align: center;">Homework/ Extra Practice</p> |

Grade 1

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| <p>Lesson 20 (45 min)</p> <p>Objective(s): Mixtures of solid particles can be separated with a screen.</p> | <p>Alignment with NYS Core Curriculum: PS 3.1d, g; PS 3.2a, c</p> | |
| <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 3: Bits and Pieces, pp. 1-7 – Teacher Guide Inv. 3: Bits and Pieces, Part 4: Separating Beads with a Screen, Materials and Getting Ready pp. 24-25 – Teacher Guide Science Stories folio, pp. 8-9 | <p style="text-align: center;">Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 3: Bits and Pieces Part 4: Separating Beads with a Screen, pp. 26-27, Steps 5-6 – Investigation Duplication Master: Teacher Sheet No. 26 (if needed) – Investigation Duplication Master: Student Sheets Nos. 24, 25 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do you know which screens to use for separating a mixture of solids?”</p> <p>Read Science Stories: pp. 14-17 <i>Solids to Liquids and Back Again</i></p> <p>For link to the Solids and Liquids Science Stories Audio Stories log on to www.fossweb.com/nyc: Go to Grade 1, click on Solids and Liquids; click on “Media”; click on Audio Stories.</p> | <p style="text-align: center;">Homework/Extra Practice</p> <p>Math Extension B – Student Sheet No. 36</p> |

Grade 1

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| | <p>Lesson 21 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Some solids change when mixed with water; others do not. • Some solids dissolve in water; evaporation leaves the solid behind. • Water can be separated from a mixture through evaporation. | <p>Alignment with NYS Core Curriculum: PS 2.1c; PS 3.1f, g; PS 3.2a, c</p> | |
| WEEK 7 (continued) | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 1: Solids and Water, Materials and Getting Ready pp. 7-9 – Consider Science Notebooks: Download the FOSS Science Notebooks folio at www.fossweb.com/nyc. – www.fossweb.com/NYC – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching Solids and Liquids. | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 1: Solids and Water, pp. 10-12, Steps 1-12 – Investigation Duplication Master: Student Sheets Nos. 27, 28 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do you know which screens to use for separating a mixture of solids?”</p> <p>Note: The Science Extensions at the end of Investigation 4 make great (and fun!) end of year activities!</p> | <p>Homework/Extra Practice</p> |

Grade 1

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| WEEK 8 | Lesson 22 (45 min) Objective(s): <ul style="list-style-type: none"> • Some solids change when mixed with water; others do not. • Some solids dissolve in water; evaporation leaves the solid behind. • Water can be separated from a mixture through evaporation. | | Alignment with NYS Core Curriculum: PS 2.1c; PS 3.1f, g; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 1: Solids and Water, Materials and Getting Ready pp. 7-9 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 1: Solids and Water, pp. 13-14, Steps 13-20 – Investigation Duplication Master: Student Sheets Nos. 27, 28 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do you know which screens to use for separating a mixture of solids?”</p> | Homework/Extra Practice |

Grade 1

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| WEEK 8 (continued) | Lesson 23 (45 min) Objective(s): <ul style="list-style-type: none"> • Some solids change when mixed with water; others do not. • Some solids dissolve in water; evaporation leaves the solid behind. • Water can be separated from a mixture through evaporation. | | Alignment with NYS Core Curriculum: PS 2.1c; PS 3.1f, g; PS 3.2a, c | |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water, pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 1: Solids and Water, Materials and Getting Ready, pp. 7-9 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 1: Solids and Water, pp. 15-16, Steps 21-28 – Investigation Duplication Master: Student Sheets Nos. 27, 28 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “How do you know which screens to use for separating a mixture of solids?”</p> | | Homework/ Extra Practice |

Grade 1

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| WEEK 8 (continued) | Lesson 24 (45 min) Objective(s): <ul style="list-style-type: none"> • Some liquids mix with water. • Some liquids form a layer above or below water. | | Alignment with NYS Core Curriculum: PS 3.1c, d, e, f, g; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water, pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 2: Liquids and Water, Materials and Getting Ready, pp. 17-19 – Teacher Guide Science Stories folio, pp. 10-11 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 2: Liquids and Water, pp. 20-21, Steps 1-9 – Investigation Duplication Master: Student Sheet No. 29 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “What happens when water is mixed with different liquids?”</p> | Homework/ Extra Practice |

Grade 1

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| WEEK 9 | Lesson 25 (45 min) Objective(s): <ul style="list-style-type: none"> • Some liquids mix with water. • Some liquids form a layer above or below water. | | Alignment with NYS Core Curriculum: PS 3.1c, d, e, f, g; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water, pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 2: Liquids and Water, Materials and Getting Ready, pp. 17-19 – Teacher Guide Science Stories folio, pp. 10-11 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 2: Liquids and Water, pp. 22, Steps 10-14 – Investigation Duplication Master: Student Sheet No. 29 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “What happens when water is mixed with different liquids?”</p> <p>Read Science Stories: pp. 18-23 <i>Mix It Up!</i></p> <p>For link to the Solids and Liquids Science Stories Audio Stories log on to www.fossweb.com/nyc: Go to Grade 1, click on Solids and Liquids; click on “Media”; click on Audio Stories.</p> | Homework/ Extra Practice Home/School Connection, Student Sheet No. 42 |

Grade 1

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| | <p>Lesson 26 (45 min)</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Some materials have properties of both solids and liquids. • Scientists test materials in many ways in order to compare them to what is known. | <p>Alignment with NYS Core Curriculum:</p> <p>PS 3.1c, f, g; PS 3.2a, c</p> | |
| | <p>Advanced Planning/ Notes to Teachers</p> <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water, pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 3: Toothpaste Investigation, Materials and Getting Ready, pp. 23-24 | <p>Investigation/Activity</p> <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 3: Toothpaste Investigation, pp. 25-27, Steps 1-6 – Investigation Duplication Master: Student Sheet No. 30 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “Is toothpaste a solid, a liquid, a mixture or some other form of matter?”</p> | <p>Homework/ Extra Practice</p> <p>Math Extension A – Student Sheet No. 37</p> |

Grade 1

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| WEEK 9 (continued) | Lesson 27 (45 min) Objective(s): <ul style="list-style-type: none"> • Some materials have properties of both solids and liquids. • Scientists test materials in many ways in order to compare them to what is known. | | Alignment with NYS Core Curriculum: PS 3.1c, f, g; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 3: Toothpaste Investigation, Materials and Getting Ready pp. 23-24 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 3: Toothpaste Investigation, pp. 25-27, Steps 7-9 – Investigation Duplication Master: Student Sheet No. 30 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “Is toothpaste a solid, a liquid, a mixture or some other form of matter?”</p> | Homework/Extra Practice |

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| WEEK 10 | Lesson 28 (45 min) Objective(s): <ul style="list-style-type: none"> • Some materials have properties of both solids and liquids. • Scientists test materials in many ways in order to compare them to what is known. | | Alignment with NYS Core Curriculum: PS 3.1c, f, g; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers <ul style="list-style-type: none"> – Teacher Guide Inv. 4: Solids and Liquids With Water, pp. 1-6 – Teacher Guide Inv. 4: Solids and Liquids With Water, Part 3: Toothpaste Investigation, Materials and Getting Ready, pp. 23-24 | Investigation/Activity <ul style="list-style-type: none"> – Investigation 4: Solids and Liquids With Water Part 3: Toothpaste Investigation, pp. 25-27, Steps 10-11 – Investigation Duplication Master: Student Sheet No. 30 – Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist <p>Use the Focus Question: “Is toothpaste a solid, a liquid, a mixture or some other form of matter?”</p> | Homework/Extra Practice |

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| WEEK 10 (continued) | Lesson 29 (45 min) Objective(s): Performance Assessment. | | Alignment with NYS Core Curriculum: PS 3.1f, g; PS 3.2a |
| | Advanced Planning/ Notes to Teachers Teacher Guide, Assessment Folio, pp. 6-11 | Investigation/Activity <ul style="list-style-type: none"> – Administer the End-of-Module Assessment – Performance Assessment. – Assessment Duplication Master No. 4 – Assessment Duplication Master No. 7, Portfolio Assessment Checklist – Anecdotal Notes and Assessment Checklist | Homework/Extra Practice |
| | Lesson 30 (45 min) Objective(s): End of Module Assessment. | | Alignment with NYS Core Curriculum: PS 2.1c; PS 3.1c, f; PS 3.2a, c |
| | Advanced Planning/ Notes to Teachers Teacher Guide, Assessment Folio, pp. 6-11 | Investigation/Activity <ul style="list-style-type: none"> – Administer the End-of-Module Assessment – Written Assessment. – Assessment Duplication Master No. 5-6 – Assessment Duplication Master No. 7, Portfolio Assessment Checklist – Anecdotal Notes and Assessment Checklist | Homework/Extra Practice |