# How do we learn?

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### Copymasters

- Student Activity Sheets
- School-Home Connection
- Assessment Activity Sheets
- Assessment Summary Chart
Students begin their hands-on investigations by using their five senses to learn about their surroundings. They observe, describe, and compare various objects, focusing on properties such as color, shape, texture, and size. Next, students learn how tools can be used to extend their senses and gather information about the world. They explore and discuss the purposes of everyday tools from the classroom, home, and workshop. In the process, they build an operational definition of a tool as something that helps people make, fix, move, or build things; compare objects; or do work. Students then use a magnifier as a tool to describe and compare objects.

Students conduct a series of investigations using nonstandard units of measure—their feet, paper clips, adding machine tape, and a growth chart—to describe and compare objects. They create a measuring tool, a spoon ruler, and find out about different types of measurement: length, width, distance, and height. Class members then discover the difference between standard and nonstandard units of measure. They compare standard units of measure with nonstandard units and infer that standard units produce more consistent results than nonstandard units, allowing information to be shared. Finally, students conduct a Measurement Roundup. They assemble a variety of measuring tools and create a measuring center for ongoing exploration and reporting of measuring information.

In the Delta Science First Reader *How do we learn?* students read about the five senses, which help us find out about our world. They also discover other ways to learn besides using our senses: asking questions, reading, observing, comparing, sorting, using tools, and measuring. They read about ways that people share information, including talking, drawing, writing, and showing in charts and graphs.
<table>
<thead>
<tr>
<th>Hands-on Activity</th>
<th>Student Objectives</th>
</tr>
</thead>
</table>
| **The Five Senses**                      | • observe objects using the five senses  
• name the body part used for each sense                                                                                                                                         |
| **Comparing Objects: Alike and Different**| • use descriptive vocabulary  
• use the word *properties* in discussing color, shape, and texture  
• compare, sort, and group objects by one physical attribute                                                                                                       |
| **Comparing Objects by Size**             | • use descriptive vocabulary  
• use the word *property* in discussing sizes of objects  
• compare, sort, and group objects by size                                                                                                                                       |
| **Observing Everyday Tools**              | • use the word *tool* in discussing an object that helps us make, move, build, or fix things, or do work  
• use descriptive vocabulary                                                                                                                                                    |
| **Using a Magnifier**                     | • use magnifiers to observe a variety of objects  
• describe and compare the normal and magnified views of an object  
• describe how a magnifier can be used to make comparisons  
• employ magnifiers to gather information and extend the senses                                                                                                               |
| **Using Our Feet to Measure**             | • observe, measure, and compare lengths using the nonstandard unit of the human foot  
• discover that a measurement includes a number of units (counting) and the name of the unit counted (labeling)  
• solve an imaginary problem involving measuring and comparing lengths                                                                                                           |
| **Using Paper Clips to Measure**          | • observe, measure, and describe lengths using a nonstandard unit (paper clip)  
• create a measuring device using a consistent unit of measure  
• recognize and discuss the advantage of a measuring device with consistent units                                                                                               |
| **Using Adding Machine Tape to Measure**  | • observe, measure, and compare their heights using a nonstandard unit (adding machine tape)  
• use simple equipment to gather data and make comparisons  
• create a graph to describe and compare student heights  
• compare student heights to heights of animals on a Growth Chart                                                                                                                    |
| **Making a Measuring Tool**               | • use nonstandard units to make a measuring tool  
• predict measurements of classroom objects in nonstandard units (spoon lengths)  
• use a measuring tool to gather data and make comparisons                                                                                                                        |
| **Comparing Nonstandard and Standard Units of Measure** | • predict their heights in nonstandard units  
• use a measuring tool with nonstandard units to measure and describe their heights  
• use standard units on a measuring tool  
• compare measurements in standard units  
• discuss the advantages of using standard instead of nonstandard units of measure                                                                                                 |
| **Sharing Information Using Standard Units of Measure** | • observe a demonstration of measuring height in standard units  
• record their heights in standard units  
• read units of measure on a chart to describe and compare objects  
• measure and compare objects using standard units of measure  
• share measurement information with other students                                                                                                                                     |
| **Measurement Roundup**                   | • observe and describe measuring tools from the kit, classroom, and home  
• discuss books about measuring and objects to measure  
• collect and display measurement data gathered during free-time exploration using measuring tools of their choice                                                                 |
<p>| <strong>Assessment</strong>                            | • See page 103.                                                                                                                                                                                                       |</p>
<table>
<thead>
<tr>
<th>Process Skills</th>
<th>Vocabulary</th>
<th>Delta Science First Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>observe, communicate, infer</td>
<td>ear, eye, hear, nose, object, see, sense, skin, smell, taste, tongue, touch</td>
<td>pages 2–6</td>
</tr>
<tr>
<td>observe, compare, communicate, classify</td>
<td>alike, compare, describe, different, property</td>
<td>pages 10–11</td>
</tr>
<tr>
<td>observe, compare, communicate, classify</td>
<td>size, sort</td>
<td>pages 10–11</td>
</tr>
<tr>
<td>observe, define based on observations</td>
<td>observe, tool</td>
<td>pages 9, 12–13, 15</td>
</tr>
<tr>
<td>observe, compare, communicate</td>
<td>magnifier, magnify</td>
<td>pages 9–10, 12–13</td>
</tr>
<tr>
<td>observe, measure, compare, infer</td>
<td>distance, length, measure, unit</td>
<td>pages 7, 13–14</td>
</tr>
<tr>
<td>measure, compare, infer</td>
<td>width</td>
<td>pages 12–14</td>
</tr>
<tr>
<td>use numbers, measure, compare, make and use models</td>
<td>height, model</td>
<td>pages 10, 12–16</td>
</tr>
<tr>
<td>predict, use numbers, measure, compare</td>
<td>predict, ruler</td>
<td>pages 12–13, 15</td>
</tr>
<tr>
<td>predict, use numbers, measure, compare</td>
<td>centimeter, inch, standard unit</td>
<td>pages 7–9, 13–15</td>
</tr>
<tr>
<td>measure, record and display data, communicate, compare</td>
<td>share</td>
<td>pages 7–16</td>
</tr>
<tr>
<td>observe; communicate; infer; measure; collect, record, display, or interpret data</td>
<td></td>
<td>pages 8–9, 12–16</td>
</tr>
</tbody>
</table>

See the following page for the Delta Science First Reader Overview Chart.
## Overview Chart for Delta Science First Reader

### How do we learn?

<table>
<thead>
<tr>
<th>Selections</th>
<th>Vocabulary</th>
<th>Related Activity</th>
</tr>
</thead>
</table>
| **We use our senses.**  
*page 2*  | senses                           | Activity 1       |
| **We find out.**     
*page 7*             | compare, measure, observe, sort | Activities 2–11  |
| **We share.**       
*page 14*            | *(optional) learn*               | Activities 8–12  |

See pages 111–118 for teaching suggestions for the Delta Science First Reader.
### MATERIALS LIST

#### How do we learn?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>blocks, parquetry, p/48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>boxes, odor, with lids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>cards, index, p/100*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>chips, counting, p/200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>cotton balls, p/50*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>cups, paper, 5-oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Discovery Guide, Body and Senses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>eye droppers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>eye droppers, marked with units of measure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>feathers, peacock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>feathers, pheasant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Growth Chart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>magnifiers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>markers, washable, blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>marker, washable, green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>marker, washable, red</td>
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<td></td>
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<tr>
<td>17</td>
<td>meter sticks, blank†</td>
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<td></td>
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<tr>
<td>1</td>
<td>notes, sticky*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>paper, construction, p/6</td>
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<td></td>
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<tr>
<td>4</td>
<td>paper clips, jumbo, p/100</td>
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<tr>
<td>1</td>
<td>paper clips, small, p/100</td>
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<tr>
<td>24</td>
<td>pennies</td>
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<tr>
<td>34</td>
<td>pine cones, large</td>
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</tr>
<tr>
<td>17</td>
<td>pine cones, small</td>
<td></td>
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<tr>
<td>1</td>
<td>poster, Body and Senses</td>
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<tr>
<td>18</td>
<td>rocks, granite</td>
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<tr>
<td>2</td>
<td>rocks, pumice</td>
<td></td>
<td></td>
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<tr>
<td>17</td>
<td>rulers, primary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>sandpaper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>sand timer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>spoons, plastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>tape, adding machine*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>tape, masking*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>tape, transparent*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>thermometer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>trays, plastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Teacher’s Guide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Delta Science First Readers: How do we learn?</td>
<td></td>
<td></td>
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<tr>
<td>1</td>
<td>Delta Science First Reader Big Book: How do we learn?</td>
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</tr>
<tr>
<td>1</td>
<td>Delta Science First Reader Big Book: About Me</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### TEACHER-PROVIDED ITEMS

- assorted classroom, kitchen, workshop tools (optional)
- assorted classroom objects to measure
- assorted pairs of large/small objects
- assorted small objects to observe
- assorted spoons, various sizes
- bags, paper, small
- block, wooden
- books about tools and measurement
- box, cardboard, large
- crackers*
- crayons, primary
- food extracts, such as mint, lemon, banana, or vanilla*
- fruit, pieces*
- hammer
- magnifier, large, on a stand
- measuring tools
- nail
- newsprint*
- objects to observe with a magnifier
- objects to sort by color, shape, texture
- pencils
- pencils, new, unsharpened
- perfume or shampoo, floral-scented*
- plates, paper, small*
- rug or mat, 60 cm x 90 cm (2 ft x 3 ft)
- scissors, blunt-tip
- stickers, small (optional)*

* = consumable item
† = in separate box

To order consumable items or refill kits, please call 1-800-442-5444.
ACTIVITY SUMMARY

The hands-on activities in this module introduce students to important science process skills: comparing objects, using tools, and measuring length, width, and height using nonstandard and standard units of measure.

ACTIVITY 1  Students observe that the five senses allow us to take in and respond to information in order to learn about our world. They use the senses of sight, hearing, touch, smell, and taste to explore objects, and they identify the body part—or sense organ—associated with each sense.

ACTIVITY 2  Students use their senses to gather information about the colors, shapes, and textures of objects. They discuss these properties of objects using descriptive vocabulary and compare objects by shape, color, and texture.

ACTIVITY 3  Students use their senses to compare big and little pine cones, feathers, paper clips, and other objects to investigate the property of size. Then they sort and group objects by size.

ACTIVITY 4  Students expand their understanding of tools to include any object that helps people make, build, move, or fix things, compare objects, or do work. They also match tools with their uses.

ACTIVITY 5  Students use magnifiers to observe objects such as rocks, feathers, pine cones, and pennies. They compare magnified and unmagnified views of objects to discover that a magnifier is a type of tool that can extend their sense of sight.

ACTIVITY 6  Students begin to explore measuring by using a nonstandard unit, their own feet, to measure length. They solve an imaginary problem involving measuring and comparing lengths, and they discover how to record a measurement using a number and a unit label.

ACTIVITY 7  Students use another nonstandard unit—a large paper clip—to measure and record the length and width of an object. They discover the advantages of using same-sized units for measuring.

ACTIVITY 8  Students explore another type of linear measure by using adding machine tape to measure their heights. They create a Class Height Chart on a classroom wall that is a model of the students themselves lined up in order of height.

ACTIVITY 9  Students turn blank meter sticks into measuring tools calibrated in same-sized but nonstandard units: plastic spoons. They use their spoon rulers to measure classroom objects and, after gaining measuring experience, make predictions about the sizes of other objects.

ACTIVITY 10  Students observe and discuss the disadvantages of using nonstandard units of measure, such as spoons and paper clips. They are introduced to standard units of measure as shown on a Growth Chart.

ACTIVITY 11  Students record their heights in standard units. They practice reading a primary ruler by measuring classroom objects. They record measurement information and share it with teammates and the class. Consistent results show students the advantage of using standard units of measure.

ACTIVITY 12  Students review measuring tools and processes by means of a Measurement Roundup, in which they present and describe measuring tools from home or the classroom. To facilitate ongoing exploration, they create a measuring center with measuring tools, books, supplies, and a place to record, display, and share measuring information.