

# Planning Guide for *Properties of Objects and Materials*

| Teaching Plans                                                                                                                                  | Specific Curriculum Outcomes                              | Components                                                                                                                                                                                                          | Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Literacy Place Connections                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>What Are Objects?</b><br>Students explore various objects and the purpose for which these objects are used.                                  | STSE/K [GCO 1/3]<br>• 25.0                                | <ul style="list-style-type: none"> <li>IWB Activity 1</li> <li>Anchor Video: <i>Properties of Objects and Materials</i></li> <li>Science Card 1</li> <li>BLM <i>Draw Objects</i></li> <li>IWB Activity 2</li> </ul> | <ul style="list-style-type: none"> <li>mystery object of choice</li> <li>assortment of familiar objects for students to explore</li> <li>digital camera (optional)</li> <li>students' Science Journals</li> </ul>                                                                                                                                                                                                                                                                          | <i>Making Things</i><br>(Guided Reading, Level A)   |
| <b>What Are Objects Like?</b><br>Students learn about and describe objects based on similarities and differences.                               | Skills [GCO 2]<br>• 7.0<br><br>STSE/K [GCO 1/3]<br>• 26.0 | <ul style="list-style-type: none"> <li>Science Card 2</li> <li><i>The Subway Mouse</i> (Read Aloud)</li> <li>IWB Activity 3</li> </ul>                                                                              | <ul style="list-style-type: none"> <li>objects featured in <i>The Subway Mouse</i></li> <li>students' Science Journals</li> <li>collection of buttons</li> <li>mystery bags (drawstring bags)</li> <li>objects with interesting shape and texture (e.g., seashells, Silly Putty, pine cone, bark chipping, corrugated cardboard)</li> <li>digital camera</li> <li>various tools for close-up viewing (e.g., magnifying glasses, gooseneck camera, hand-held microscope, rulers)</li> </ul> |                                                     |
| <b>What Are Materials?</b><br>Students learn about materials based on similarities and differences and the objects they make.                   | STSE/K [GCO 1/3]<br>• 26.0<br>• 27.0                      | <ul style="list-style-type: none"> <li>Science Card 3</li> <li>Science Card 4</li> <li>BLM <i>Materials in the Classroom</i></li> <li>BLM <i>Venn Diagram</i></li> <li>IWB Activity 4</li> </ul>                    | <ul style="list-style-type: none"> <li>students' Science Journals</li> <li>students' Science Folders</li> <li>small photo albums (one per small group)</li> </ul>                                                                                                                                                                                                                                                                                                                          |                                                     |
| <b>How Do You Describe Objects and Materials?</b><br>Students investigate the properties of objects and materials at hands-on activity centres. | STSE/K [GCO 1/3]<br>• 26.0<br>• 27.0                      | <ul style="list-style-type: none"> <li>Science Card 5</li> <li>BLM <i>How Does It Feel?</i></li> <li>BLM <i>What Does It Look Like?</i></li> <li>IWB Activity 5</li> </ul>                                          | <ul style="list-style-type: none"> <li>variety of objects and materials for students to compare (e.g., stuffed animals, dolls, blocks, seashells, hard and soft balls, modelling clay, feathers, straw hat, wool hat, soft and hard cover books, aluminum foil, mirror, cellophane wrap)</li> <li>flashlight</li> <li>pan balance</li> <li>collection of crayons of varying sizes</li> <li>digital camera (optional)</li> <li>students' Science Journals</li> </ul>                        | <i>What Can Float?</i><br>(Guided Reading, Level B) |

| Teaching Plans                                                                                                                            | Specific Curriculum Outcomes                                                             | Components                                                                                                                                        | Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Literacy Place Connections                                          |
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| <b>Introducing the Design Challenge</b><br>Students become familiar with (or review) the design process.                                  | Skills [GCO 2]<br>• 24.0<br>• 7.0<br>• 8.0<br><br>STSE/K [GCO 1/3]<br>• 26.0<br>• 27.0   | • <i>The Magnificent Tree</i> (Read Aloud)<br>• <i>What Is the Design Process?</i> poster<br>• Science Card 6                                     | • students' Science Journals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                     |
| <b>Testing Materials</b><br>Students will determine the purpose of various materials and test their properties using the inquiry process. | Skills [GCO 2]<br>• 24.0<br>• 10.0<br>• 20.0<br>• 13.0<br><br>STSE/K [GCO 1/3]<br>• 28.0 | • <i>What Is the Inquiry Process?</i> poster<br>• BLM <i>Signs for Centres 1 and 2</i><br>• BLM <i>How Materials Are Used</i><br>• IWB Activity 6 | • various materials for the seven centres for students to test their properties (see chart on page 43)<br>• plastic water bottle<br>• plastic bag<br>• piece of Styrofoam<br>• white tissue paper<br>• students' Science Folders                                                                                                                                                                                                                                                                                                                                                                   | <i>Munchal Munchal Munchal</i> (Read Aloud–Inferring Strategy Unit) |
| <b>How Do You Join Materials?</b><br>Students explore various ways to join different materials.                                           | Skills [GCO 2]<br>• 8.0<br>• 24.0<br><br>STSE/K [GCO 1/3]<br>• 29.0                      | • Science Card 7<br>• IWB Activity 7<br>• Science Card 8                                                                                          | • variety of familiar objects with fasteners<br>• variety of objects and materials to join (e.g., paper, paper bags, aluminum foil, beads, blocks of wood, buttons, cardboard, fabric, foil plates, paper plates, paper towel rolls, pencils, plastic containers and lids, craft sticks)<br>• joining materials/fasteners (e.g., different types of tape and glue, elastic bands, stapler and staples, buttons, pipe cleaners, plastic ties, zippers, wool, ribbon, shoelaces)<br>• students' Science Journals<br>• tools such as scissors, colouring pencils, crayons, markers, paint and brushes | <i>Let's Make Cards</i> (Guided Reading, Level F)                   |

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## Planning Guide for *Properties of Objects and Materials* (continued)

| Teaching Plans                                                                                                                                                                                                   | Specific Curriculum Outcomes                                                                                                                       | Components                                                                                                                                                                                                                                                                  | Materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Literacy Place Connections                                                     |
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| <b>How Do You Use Objects?</b><br>Students examine the purpose of objects and record their findings. Students design a new tool.                                                                                 | Skills [GCO 2]<br>• 22.0<br><br>STSE/K [GCO 1/3]<br>• 25.0<br>• 27.0                                                                               | <ul style="list-style-type: none"> <li>Science Card 9</li> <li>BLM <i>How Do We Use Objects?</i></li> <li>IWB Activity 8</li> <li><i>What Is the Design Process?</i> poster</li> <li><i>The Magnificent Tree</i> (Read Aloud)</li> <li>Science Card 10</li> </ul>           | <ul style="list-style-type: none"> <li>variety of tools, for example:               <ul style="list-style-type: none"> <li>workshop tools: pliers, screwdrivers, measuring tape, sandpaper</li> <li>gardening tools: garden trowel, watering can</li> <li>office tools: tape dispenser, staple remover</li> <li>kitchen tools: pancake flipper, bottle opener, pizza cutter, egg beater, measuring spoons</li> </ul> </li> <li>small boxes, pencils or straws, cardboard</li> <li>students' Science Journals</li> <li><i>The Polar Bear in the Pack: Two Windows on the World</i>, by Derek Wilton (optional)</li> </ul> |                                                                                |
| <b>Modelling the Design Process</b><br>Teacher models the design process for students or, if students have experience with the design process, guides students through the process of making a pencil holder.    | Skills [GCO 2]<br>• 31.0<br>• 22.0<br>• 32.0<br>• 18.0<br>• 30.0<br>• 7.0<br>• 8.0                                                                 | <ul style="list-style-type: none"> <li><i>What Is the Design Process?</i> poster</li> <li>IWB Activity 9</li> </ul>                                                                                                                                                         | <ul style="list-style-type: none"> <li>sample pencil holder</li> <li>materials to build and decorate a pencil holder</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                |
| <b>The Design Challenge</b><br>Students apply their understanding of the properties of objects and materials to complete the design challenge to build a useful object of their choice using recycled materials. | Skills [GCO 2]<br>• 24.0<br>• 31.0<br>• 22.0<br>• 32.0<br>• 18.0<br>• 30.0<br>• 7.0<br>• 8.0<br><br>STSE/K [GCO 1/3]<br>• 29.0<br>• 28.0<br>• 30.0 | <ul style="list-style-type: none"> <li><i>What Is the Design Process?</i> poster</li> <li>Science Card 6</li> <li>BLM <i>Student Self-Assessment of Design Process</i></li> <li>BLM <i>Design and Build a Useful Object</i></li> <li>BLM <i>My Useful Object</i></li> </ul> | <ul style="list-style-type: none"> <li>recycled materials such as string, yarn, paper towel rolls, cans, cotton balls, buttons, broken toy parts, plastic containers and bottles</li> <li>digital camera (optional)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           | <i>Art for the Birds</i> (Shared Reading—I Can Make a Difference Inquiry Unit) |