DRAFT

| Content Area: | Physical Science | Grade(s) | K |
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| Unit Plan Title: | Material of Our World | | |

## Overview of Unit

This unit provides experiences that heighten students' awareness, curiosity, and understanding of the physical world as they observe and compare the properties of a variety of kinds of wood, paper, fabric, and earth materials.

## Essential Question(s) and Enduring Understandings

1. **In what ways do we depend upon earth's natural resources?**
   - Wood, paper, and fabric are composed of materials found on Earth.
   - The origin of everyday manufactured products such as paper and cans can be traced back to natural resources.

2. **In what ways do the materials of the Earth change when exposed to different elelments?**
   - Water changes paper, wood, and some fabrics.
   - Physical, living, and earth systems are related through the interplay of energy and matter.
   - A lof of different items in our life are made from wood, paper and fabric.
   - Matter can change as a result of heating and cooling, but not all materials respond the same way.

3. **How can we preserve Earth's natural resources?**
   - Humans need to find ways to reuse Earth's Materials through recycling efforts and reducing paper, fabric, and wood overuse.

## Content Statements and CPIs

**5.1.4.B.1-4** Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.

**5.2.4.A.1-2** Sort and describe objects based on the materials of which they are made and their physical properties.

**5.2.2.B.1** Some properties of matter can change as a result of processes such as heating and cooling. Not all materials respond the same way to these processes.

**5.4.2.G.4** The origin of everyday manufactured products such as paper and cans can be traced back to natural resources.

## Student Learning Targets/Objectives:

*Students will be able to:*

1. Develop a curiosity and interest in the physical world around them.
2. Observe and describe properties of different kinds of wood, paper and fabric.
3. Compare different finds of wood, paper and fabric to discover how they are alike and how they are different.
4. Observe interactions of wood, paper and fabric with water.
5. Become aware of natural resources in our world.
6. Communicate observations.
7. Acquire vocabulary associated with properties of materials.
8. Learn that wood and paper can be recycled to create new forms of paper or wood that have new properties.

## Strategies/Justifications

- KWLAQ, indentify what students know about wood, paper and fabric. Lay a foundation for specialized knowledge about the importance in our world.
- Observe and describe the properties of different types of wood, paper and fabric.
- Compare and contrast the different kinds of wood, paper and fabric.
- Predict what changes will occur when wood, paper and fabric are exposed to water.
- Acquire vocabulary associated with the properties and structures of wood, paper and fabric.
- Communicate observations of wood, paper and fabric.

| Teaching Points, Activities, and Assessments | Time Frame |
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| **Teaching Point #1**<br>*Scientists think about what they already know about a subject..*<br><br>**1.** Students create the KW of the KWDLAQ on wood. Return to this chart throughout the unit to make additions and corrections. Help students record important aspects of their thinking in their notebooks. Help students refer to their own thinking and adjust any misconceptions as their learning experiences warrants.<br>**2.** In their science notebooks, students sketch wood and beginning writing their observations of things made of wood. These are their predictions: reinforce the word prediction, and discuss the meaning.<br><br>*Teacher Note: KWDLAQ - What We Think We **K**now, What We **W**ant to Find Out, What We Will **D**o to learn more, What We **L**earned, How We Can **A**pply what we learned, What **Q**uestions We Still Have. | 2/30 minute periods (ongoing) |
| **Teaching Point #2**<br>*Scientists observe things made of wood in their environment and record their observations. Scientists draw accurate pictures of what they see.*<br><br>At center tables, children will compare and contrast different wood samples. They will sketch the samples in their journals, noting different characteristics**.** | 30 minutes |
| **Teaching Point #3**<br>*Scientists observe things made of wood in their environment and record their observations. Scientists draw accurate pictures of what they see.*<br><br>Using the room as their observatory, students will label objects made from wood. | 30 minutes |
| **Teaching Point #4**<br>*During physical interactions, substances retain their original properties.*<br><br>Complete wood- water experiment (See Foss Investigation Guide section 1 part 3: Wood and Water, page 73). Students will record findings in science notebook.<br><br>Explore Sinking and Floating with different kinds of Wood. (See FOSS Investigations Guide section 1, part 4: Sink the Pine and Plywood, page 81 ).<br>Record findings in science notebook. | 2/30 minute periods |
| **Teaching Point #5**<br>*Matter has physical properties that can be observed and quantified.*<br><br>Explore Sanding Wood (See FOSS Investigations Guide, section2, part 1: Sanding Wood, page 103). Collect saw dust for next investigation.Record findings in science notebook.<br><br>Compare Shavings and Sawdust. (See Foss Investigation section 2,Part 2,Sawdust and Shavings, page 111).Record findings in science notebook.<br><br>Create wood sculptures using small wooden blocks or large big blocks.Draw/Write about sculpture in science notebooks. | 3/30 minute periods |

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| **Teaching Point #6**<br>*Scientists think about what they already know about a subject.* | 2/30 minute periods |
| Students will create a KWL of what students know about paper.Allow students to go on paper hunt in the classroom (prior knowledge).Create class chart to record their discoveries.<br><br>Students will compare and contrast paper samples. Students record observations in science notebooks. | |
| **Teaching Point #7**<br>*Scientists observe things made of paper in their environment and record their observations. Scientists draw accurate pictures of what they see.* | 30 minutes |
| Using the room as their observatory, students will label objects made from paper. | |
| **Teaching Point #8**<br>*During physical interactions, some substances change from their original properties.* | 2/30 minute periods |
| Complete paper-water experiment (See Investigation 1 section3, part 3, page 156).<br>Record findings in science notebook. | |
| **Teaching Point #9**<br>*Scientists think about what they already know about a subject.* | 2/30 minute periods |
| Create a KWL of what students know about fabric.<br><br>Allow students to go on a fabric hunt in the classroom.Create class chart to record their discoveries. | |
| **Teaching Point #10**<br>*Scientists observe things made of fabric in their environment and record their observations. Scientists draw accurate pictures of what they see.* | 3/30 minute periods |
| Compare and Contrast fabric samples (See Investigation 1, section 4, part 1, page 189).<br><br>Taking Fabric Apart (See Investigation 1, section 4, part 2, page 195).<br><br>Observing water and fabric (See Investigation 1, section4, part 3, page 200). | |
| **Benchmark Assessment** | |

## Unit Resources

- The Einstein Project website
- Foss Investigation Guide: Materials In Our World
- Foss Science Resources: Big Book: Materials In Our World and student books(32)

## Technological Resources

**Technology to be integrated (tools, equipment, software, and online learning)**

- DVDs
- Internet
- Video Clips
- ELMO