# Lesson 1 – I Spy - Engage/Explore/explain

## Lesson Objectives
Students will identify an object and material in their surroundings

## Background info:
Materials are used for creating objects

## Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
b. Identify different materials that make up familiar objects found in their learning environment (e.g., classroom, school, and playground).

## Materials
Materials:
- Tape
- Spy-scope pattern reproduced for individual students
- Crayons, markers
- Scissors
- worksheet

## Procedure:
**Set: 10 minutes**
Ask students questions about metals, woods, cloths and other materials that they recognize around the playground and other places outside of school

**Development: 20 minutes**
Tell students that they will be exploring to look for materials that make up objects around the room.

Have students pretend to dress as an explorer putting on imaginary hat, gloves, jacket, boots and tell them they need to make their telescope needed for exploring.

Explain to students that they will be making a scope and demonstrate how to do this by showing them the spy scope pattern and walking them through the necessary steps (see worksheet for this lesson)

1. Model the activity: Look through your scope, focus on one object. Think of what material the object is made of. Say “I spy with my little eye something made of (name of a material)
2. Students look through their scopes, pointing them in the same direction as yours. They guess what you are looking at.
3. Repeat the activity with new spiers.

## Classroom Management
Show students step by step how to put their spy scopes together. You may need to walk around and help them to tape them together.
Allow students to color their spy scopes before they are taped together

## Assessment
As the objects are guessed, have students check to confirm that the objects are really made of the named materials. Formative peer/self assessment

## Resources

## Closure: 10 minutes
Ask students why an object is made of a particular material. For example, ‘Why are curtains made of cloth?’

Cloth can bend when the curtains are pulled
It keeps the room quieter
It looks pretty
It can be cut in different lengths and sewn on a sewing machine. Why are our clothes not made of metal? Why is a table made of wood and not cloth? How would you feel using a bath towel that is metal or wood?

**Kindergarten: Objects and Materials**

**Lesson 2 – Familiar Objects - Engage /Explore**

**Lesson Objectives**
- Students will be able to recognize and identify familiar objects in their surroundings and be able to recognize what their main property is.

**Background info:**
Know what is referred to when teacher talks about objects and materials.

**Curriculum Connection**
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment

a. Pose questions about characteristics of objects and material that lead to exploration and investigation.

**Materials**
- scavenger worksheet to mark down objects made of cloth, wood, metal

**Resources**
- Attached power point

**Procedure:**
**Set: 10 minutes**
Tell students that they will be going on a scavenger hunt on the playground. Explain to them what objects are (see teacher sheet) and tell them that they will be looking for objects that are made of cloth, wood, metal or a mixture of all of them. Show students an example of each using familiar materials PowerPoint. (see power point for this lesson)

Explain to students that they will be looking for things that are not living.

Ask students to look around the room and with a show of hands they can give an example of items that they see.

**Assessment**
Formative assessment using anecdotal notes to assess group work and understanding of concepts. Adapt teaching methods accordingly.
around the classroom that have these properties.

**Development: 20 minutes**
Place the students into groups of three or four and give each group a scavenger hunt sheet. Give students boundaries for where they are allowed to go, and show them the main meeting point to come to when they hear you blow the whistle.

Tell students when they hear the whistle blow they will need to come back to the meeting point.

As students find objects they should draw a picture of what they are seeing and try to label it. They should put the object in the appropriate box on the scavenger hunt sheet.

**Closure: 10 minutes**
Call students back to the meeting point and go back to the classroom.
Tell students to join up with another group to show each other what they found on their scavenger hunt sheets and let them discuss them.
Tell students to hand you the sheets because they will be using them for the next science class.
**Lesson 3 – Familiar Objects (part two) – Extend/ Explain**

**Lesson Objectives**
- Students will be able to recognize and identify familiar objects in their surroundings and be able to recognize what their main property is.

**Curriculum Connection**
**MOK.1 Investigate observable characteristics of familiar objects and materials in their environment**

a. Pose questions about characteristics of objects and materials that lead to exploration and investigation.

f. Sequence or group objects and materials according to one or more student-selected criteria

**Materials**
- scavenger worksheet that was used in lesson one, scissors, glue
- large poster size chart of the three different categories, markers for writing that may need to be done.

**Resources**
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**Procedure:**

**Set: 10 minutes**
Ask students to tell you what kinds of materials an object can be made out of. Look for quiet hands. Review that objects can be made from different materials and sometimes more than one material. Show examples of objects in the classroom and ask students to tell you what they think they are made of.

**Development: 20 minutes**
Give students their scavenger hunt sheets from the last lesson and ask them to cut out their words and pictures.

Have a poster size chart ready of the three property categories wood, metal and cloth and tell students cut out their pictures and words from their scavenger hunt papers and glue them onto the chart in the appropriate box.

**Closure: 10 minutes**
Discuss with the class the reasons why they thought those items should go into those categories. Bring attention to the items that could fit into more than one category.

**Background info:**
Know what is referred to when teacher talks about objects and materials. Learn what properties some objects are made of, such as wood, cloth, metal

**Assessment**
Formative assessment using anecdotal notes to assess group work and understanding of concepts.
Assess final poster for a formative assessment for overall understanding concepts by the class.
Adapt teaching methods accordingly.
### Lesson 4 – Mystery Objects – Engage/Explore

#### Lesson Objectives
- Students will become familiar with some terms used to describe materials by how they feel.

#### Background info:
Know what is referred to when teacher talks about objects and materials. Review descriptive words such as hard, soft, smooth, rough.

#### Curriculum Connection
**MOK.1 Investigate observable characteristics of familiar objects and materials in their environment**

d. Identify observable characteristics of materials, such as color, texture, and odor, and observable characteristics of objects, such as shape, size, and weight.

#### Materials
- paper bags, objects that are soft, hard, smooth, rough,
- worksheets for lesson

#### Resources
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#### Procedure:
**Set: 10 minutes**
Tell students that materials are used to make objects. Show examples of this with items around the room. For example paper is an object that we use to wrap gifts or to color on, but it is also a material that can be used to make a hat. Give various examples and ask students to contribute their own examples.

**Development: 20 minutes**
Put students into groups of three or four. Have a paper bag with one item each of something that is soft, hard, smooth, rough. Make sure there are four paper sacks per group.
Students will without looking, reach into the paper bag and feel the item inside. They will decide if the item is soft, hard, smooth or rough and will record their results on their worksheet.
Students will compare their results with students in their group and discuss what they think the items are.

This can be extended into a lesson about opposites.

**Closure:10 minutes**
Discuss with the class that we can sort objects by similar characteristics that they have. Ask students to share their results by raising their hand.

**Assessment**
Collect worksheets and do a diagnostic assessment to see if students are understanding the concepts that are being taught.
<table>
<thead>
<tr>
<th>Lesson 5 and 6 – Play Dough Fun - Engage/Explore/Extend/Evaluate</th>
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<tbody>
<tr>
<td><strong>Lesson Objectives</strong></td>
</tr>
<tr>
<td>To allow students to discover that everyday substances are</td>
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<td>composed of parts that make a unique whole.</td>
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<tr>
<td><strong>Curriculum Connection</strong></td>
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<tr>
<td>MOK.1 Investigate observable characteristics of familiar</td>
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<tr>
<td>objects and materials in their environment</td>
</tr>
<tr>
<td>a. Pose questions about characteristics of objects and</td>
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<tr>
<td>material that lead to exploration and investigation.</td>
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<tr>
<td><strong>Materials</strong></td>
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<tr>
<td>• play dough recipe (have enough ingredients for the class),</td>
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<td><strong>Procedure:</strong></td>
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<tr>
<td><strong>Set: 10 minutes</strong></td>
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<tr>
<td>Before beginning this activity, place the ingredients on</td>
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<td>a table that is viewable by students.</td>
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<td>Ask Students:</td>
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<tr>
<td>*Does anyone recognize these items I have placed on the</td>
</tr>
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<td>table? Allow response time.</td>
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<tr>
<td>*What if I told you that we could take these ingredients</td>
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<tr>
<td>and make something that is completely different than the</td>
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<td>individual ingredients? Do you think that we could do that?</td>
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<tr>
<td>Do any of you know what we could make with these</td>
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<tr>
<td>ingredients?</td>
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<td><strong>Development: 2 classes</strong></td>
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<tr>
<td>Have pre-measured and labeled ingredients arranged on the</td>
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<td>table. Warn students that they are not making something</td>
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<td>they can eat. Remind them that although the ingredients are</td>
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<td>food ingredients, it does not mean that they should be able</td>
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<td>to eat them.</td>
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<tr>
<td>First, allow students to approach the table and observe</td>
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<td>each of the ingredients being used. Once all students have</td>
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<td>looked at the ingredients, have groups of four or five</td>
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<td>students be responsible for one ingredient and allow them</td>
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<td>to take it back to their desks.</td>
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<tr>
<td>Say to students: *Now you need to look at your ingredient.</td>
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<tr>
<td>does it feel? *Do you think that once we combine it with</td>
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<td>the other ingredients it will be different or the same?</td>
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<tr>
<td>Allow different students to describe each of the</td>
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<td>ingredients. You might</td>
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</tbody>
</table>
want to write their responses on a flipchart or blackboard. Discuss responses together.

With help from students, combine all the ingredients in the pan and allow the students to make observations about the combined ingredients. Discuss observations together.

Cook ingredients until the mixture has the consistency of mashed potatoes. Students may help, but make sure that they are wearing hot-mitts and eye protection. Turn the dough out onto waxed paper. When dough is cool enough to handle, allow students to take turns kneading it. Divide the dough among the groups so that all students are able to feel the consistency of it.

Ask students:
- What does it feel like?
- What do you think we have made?
- Is this like any of the starting ingredients? Why or why not?
- How is this substance different?
- What would happen if we left out the water? Oil? Flour?
- What do you think would happen if we added an extra cup of flour?
- How do you think we could find out?
- Do you think that each of the parts or ingredients that we added was important?
- Do you see, smell, or feel any evidence of the original parts?
- Do you think that we could divide the play dough back to the original ingredients? Why or why not?
- Has anyone ever seen parts put together to make a whole substance that is different? Where and what?

Be sure to record students' observations on a worksheet and discuss their responses to these questions with them.

**Extend**
Allow students to play with the play dough and make their own creations. As students are working ask them questions such as.
- Was your creation unique?
- How did using different parts allow you to make your creature different than others?
- How do the different parts or places on the island allow you to make you creation unique?

**Closure: 10 minutes**
Review and discuss how parts can make a whole.

**Evaluate**
- Would your creation change if you added a new part?
- Would your creation change if you took a part away?
- Are the parts that make up your creation needed to make it special?
Lesson 7 – Marble Art, Engage

Lesson Objectives

Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
c. Differentiate between objects and the materials used to construct the object.

Materials
- Tin foil pans (one per student), paper, three or four marbles per students, various colors of paint, sticky tac

Resources
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Procedure:
Set: 10 minutes
Show students all of the materials that will be used. Talk about each one and ask them if they would consider them an object or material. Continue with examples until it seems like concept is understood.

Development: 20 minutes
Each student will be given a tin plate, piece of paper, marbles. Attach the paper to the bottom of plate with sticky tac. Put a few dabs of paint of various colors onto the paper. Give students marbles and tell them to roll the marbles around on the plate so that they go through the paint to make designs. Once paper is covered with designs students can place their project to the side to dry. Allow students to make one or two marble paintings.

Closure: 10 minutes
Talk to students about the materials they used to make their artwork. Ask them if artwork is an object that people can use. What are the uses for artwork. What kind of everyday materials did we use to make the object? Can any of these materials also be considered objects?

Background info:
Students should begin to understand the difference between materials and objects.

Classroom Management
Students will only answer questions once they raise their hand and they are called on. Call on students by name. Don’t give students the materials until the project is being started. Allow students to come forward to get their paint. One at a time.

Play music in the background while students are working.

Assessment
Formative assessment during question time to see if concepts are understood.
Lesson 8 – Popcorn Tree/ POE

Grade: K

Lesson Objectives
Students will predict, observe and explain what they think will happen throughout the process.

Background info:
This lesson will carry forward to the next lesson.

Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
e. Explore how materials may change as a result of processes such as cutting, gluing together, heating, cooling, folding, and pouring them into different containers.

Materials
Materials:
• Popcorn By Alex Moran
• paper towels
• plastic bag that zips for each child
• unpopped kernels of popcorn
• tape
• planter pot
• soil
• POE worksheet

Resources
• Popcorn Alex Moran

Classroom Management
Students will only answer questions once they raise their hand and they are called on. Call on students by name.

Give each student one or two kernels of popcorn.

Assessment
Have students hand in their POE charts and do a formative assessment of their understanding.

Procedure:
Set: 10 minutes
Read student the book “Popcorn” By Alex Moran, Talk to students about popcorn and where it comes from. Ask them if they know where the popcorn seed comes from. Give each student a seed of popcorn to look at while the discussion is happening.

Development: 20 minutes
1. Tell the children they are going to grow their own popcorn plant.
2. Put a few paper towels in a plastic bag and soak them with water.
3. Place a few kernels in the bag so they sit on top of the paper towels.
4. Zip the bag up and tape it to an object where it can get plenty of sunlight. (Window, fence outside, etc.)
5. Keep an eye on the kernels over the next week.
6. If the towels get too dry, water them again.
7. Once you see small plants growing, plant them into a pot with soil.
8. Keep the soil moist.
9. You can do this at school or have the children take them home and do this.

Tell students that we will be watching the popcorn plants over the next week. Have them fill out their POE sheet by drawing the appropriate
Closure: 5 minutes
Talk to students as a large group about what their predictions will be for their popcorn plants.
Lesson 9 – Popcorn Time - Explore/Extend

Lesson Objectives
Students will recognize non-reversible changes that can happen with an object

Background info:
This lesson is an extension of the popcorn tree lesson

Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
e. Explore how materials may change as a result of processes such as cutting, gluing together, heating, cooling, folding, and pouring them into different containers.

Materials
Materials:
- The Popcorn Dragon
- Popcorn seeds
- Popper
- Bowls
- Butter
- Salt
- Popcorn song, by Barenaked Ladies – CD Snacktime
- POE worksheets from previous lesson
- Characteristics worksheets

Resources
- Popcorn Dragon by Jane Thayer
- CD Snack time – by, Barenaked Ladies

Procedure:
Set: 10 minutes
Read students the book “The Popcorn Dragon” by, Jane Thayer. Talk to students about how heat makes the kernels pop into fluffy popcorn.
Play popcorn song on Snack Time CD, by The Barenaked Ladies
Students will pretend that they are pieces of popcorn while listening to this song.

Development: 20 minutes
Students will check their popcorn plants and continue filling in their POE worksheets.
Give students some popcorn seeds and ask them to describe what they are seeing, feeling, smelling, and what characteristics the popcorn seed has. Have students practice writing characteristic words on worksheet provided. Teacher should write the words down on the board or on chart paper so students can copy them.
Take some popcorn seeds and ask students to predict what they think will happen when we heat the kernels.
Pop enough popcorn for the class and have them complete the second side of their charts with descriptive words describing what the kernel looks like once its popped.
Ask questions:
How did the kernel of popcorn change?
Why do you think the kernel changed?

Classroom Management
Students will only answer questions once they raise their hand and they are called on. Call on students by name.
Give each student one or two kernels of popcorn.

Assessment
Assess students worksheets for understanding of characteristics and changes that can not be reversed.
Can the popped kernel be changed back into its original state?

**Closure: 10 minutes**
Distribute popcorn to each student and let them eat it. Talk about places that students like popcorn in.
Lesson 10 – Eggsperiment
Engage/Explore/explain

Lesson Objectives
Students will explore the changing states of matter which transform an egg from raw to soft to hard-boiled.

Background info:
Concept of changing states from one form to another.

Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
e. Explore how materials may change as a result of processes such as cutting, gluing together, heating, cooling, folding, and pouring them into different containers.

Materials
Materials:
• Three whole eggs per group
• Three bowls per group
• Large pot with boiling water
• Kitchen timer
• Results worksheets

Resources

Procedure:
Set: 10 minutes
Show students the eggs and ask them to tell you some descriptive words to describe the characteristics of the egg.
Development: 20 minutes
1. Tell students that they will explore some basic principles about eggs and how they can change. Start by checking their understanding: what will happen if you leave an egg in a bowl and don’t touch it? What’s inside? What happens if you put the egg in boiling water? (Warning: be prepared to explain that the eggs you buy at the store are not the kind with real chicks inside, so if you boil them you aren’t hurting any creatures!)
2. Invite students to help you crack one egg into one bowl, and observe what happens. Name the parts—yolk and white—if students don’t already know them well. Leave them on the counter during your next phase, but check back now and then: has anything changed?
3. Now heat up your boiling water, and gently place the other two eggs into it. Students should watch you, and observe the eggs while staying a safe distance from the heat. Students can also help you set the timer for three minutes.

Classroom Management
Students will only answer questions once they raise their hand and they are called on. Call on students by name.

Assessment
Assess students worksheets for understanding of characteristics and changes that can not be reversed.
4. After three minutes, leave one egg to boil longer (set the clock for another twelve minutes), and pull out the other egg. Ask students, "What do you think this egg will look like if I open it? Will it look like the one in the bowl?" (You can tell your child that that egg is a “control” in this experiment.)

5. Since the egg is hot, you’ll need to help with the next step. Take a knife, and split the egg into a second bowl. It will be a “soft boiled” egg—the egg white will have turned an opaque clear white, and the yolk, while still soft, will be more firm! And all this happened with just the addition of heat.

6. By now, you should be ready to pull out the final egg. Again, ask your scientists to make a hypothesis about what she expects might have happened. Then split the final egg. Presto! It’s a hard-boiled egg! Working together, observe what has changed now.

7. What happened? Heat changed the “state” of the egg, and it will never change back. Why? They’re still the same substances that started in the egg—nothing came out and nothing was added—but the heat changed how they were put together.

Have students write on their worksheets the results from the egg experiment.

**Closure:10 minutes**

Talk about other ways they have seen the state of an egg change.
**Lesson 11 - Soak It Up**
**Engage/Explore/explain**

| Grade: K |

<table>
<thead>
<tr>
<th>Lesson Objectives</th>
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<tbody>
<tr>
<td>Students will test common items to find out which ones absorb water</td>
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| Background info: |

<table>
<thead>
<tr>
<th>Curriculum Connection</th>
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<tbody>
<tr>
<td>MOK.1 Investigate observable characteristics of familiar objects and materials in their environment</td>
</tr>
<tr>
<td>a. Pose questions about characteristics of objects and materials that lead to exploration and investigation.</td>
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<table>
<thead>
<tr>
<th>Materials</th>
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<tbody>
<tr>
<td>Materials:</td>
</tr>
<tr>
<td>• Straws</td>
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<td>• Toothpicks</td>
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<tr>
<td>• Cloth</td>
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<tr>
<td>• Paperclips</td>
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<tr>
<td>• Foil</td>
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<tr>
<td>• Wire</td>
</tr>
<tr>
<td>• Plastic ties</td>
</tr>
<tr>
<td>• Bags</td>
</tr>
<tr>
<td>• Eyedroppers</td>
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<tr>
<td>• Pencil or crayon</td>
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<tr>
<td>• Small containers of water</td>
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<tr>
<td>• Sheet of plastic, tray, or towel to use as work area</td>
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<tr>
<td>• Sorting mat reproducible for each group</td>
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<tr>
<td>• Cardboard</td>
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<tr>
<td>• Yarn</td>
</tr>
<tr>
<td>• Paper strips of hard wood</td>
</tr>
<tr>
<td>• Rubber bands</td>
</tr>
<tr>
<td>• Plastic tubing</td>
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<tr>
<td>• Styrofoam</td>
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<tr>
<td>• Hairpin tape</td>
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| Resources |

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<thead>
<tr>
<th>Classroom Management</th>
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<tbody>
<tr>
<td><strong>Procedure:</strong></td>
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<tr>
<td><strong>Set: 10 minutes</strong></td>
</tr>
<tr>
<td>Divide students into groups of three or four. Tell them they will be exploring objects to find out which ones absorb water</td>
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<tr>
<td><strong>Development: 20 minutes</strong></td>
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<tr>
<td>1. Give each group a bag containing 8 to 10 objects from your materials collection, a container of water, and eyedropper, and a copy of the sorting mat.</td>
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<tr>
<td>2. Students take an object from the bag and predict whether it will absorb the water.</td>
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<td>3. Students can tape the objects to the sorting mat or draw or write the names of the objects in the correct areas.</td>
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<tr>
<td>Show students step by step how to put their spy scopes together. You may need to walk around and help them to tape them together.</td>
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<tr>
<td>Allow students to color their spy scopes before they are taped together</td>
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</tbody>
</table>
Have students report the results of their experiment. Record the material that absorb water on a large chart.

**Closure: 10 minutes**

Ask students to find other objects in the classroom that absorb. Ask, “Why is it important for some materials to absorb? What things do you use everyday that absorb? Why is it important that some things don't absorb?”

<table>
<thead>
<tr>
<th>Assessment</th>
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<tbody>
<tr>
<td>Assess the larger chart once students have placed their results on it. Check for understanding of concepts. Assess answers for if students understand absorption and types of objects that can do this.</td>
</tr>
</tbody>
</table>
**Lesson Objectives**
Students will become aware of the types of materials that man uses to build sturdy objects.

**Curriculum Connection**
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
- g. Discuss how familiar objects are designed to meet human needs.
- h. Identify and explore ways to use appropriate tools (e.g., balance, funnel, stapler, hammer, glue, scissors, and containers) safely to help carry out a variety of useful tasks such as stapling, measuring, hammering, gluing, and cooking.
- i. Explain how tools and other objects are designed to meet human needs.

**Materials**
- Straw
- Popsicle sticks
- Bricks/Lego
- Hair dryer
- Cardboard
- Toilet paper rolls
- Tape
- Copy of three little pigs story (see PowerPoint)

**Resources**
Three Little Pigs book or power point

**Procedure:**

**Set: 20 minutes**
Pick an object in the room and ask students if they know what it is made from. Help them to differentiate between sturdy and weak materials.

Read the story "The Three Little Pigs" ask questions about the choices the pigs are making when building their houses.

**Development: 2 days**
1. Ask students about Saskatchewan and the kinds of weather that we have. Talk about the strength of our homes and what could happen if our homes were not built in a sturdy way.
2. Divide students into groups of 4. Tell students that they will be making a replica of one of the houses in the three little pigs.
3. Give students the materials needed for building their houses and allow them to build as sturdy of a house as possible with the materials that they are given.
4. One group will be given Lego, one popsicle sticks and the other straw.
5. Ask students to make predictions about the strength of their

**Classroom Management**
Show students step by step how to put their spy scopes together. You may need to walk around and help them to tape them together.

Allow students to color their spy scopes before they are taped together.

**Assessment**
Anecdotal assessment of group work and process. Have students draw a picture showing the order of the Three Pigs Book.
Day 2

6. Students should write on their sheets what they think will happen when the hairdryer (wind, wolf) blows at their house.
7. Students should blow the hairdryer at each of the houses to see if their predictions are correct.

Students should draw a picture of the kinds of houses built in The Three Little Pigs story.

**Closure: 10 minutes**

Students should clean up their work areas.
Ask questions.
Why do you think that the straw house blew over?
Why is it important to use sturdy materials for things like houses and buildings?
What kinds of materials would you use to build a house? A fort in your living room?
Have a discussion about the types of tools used to build a house or another sturdy object.
Lesson Objectives
Students will use softer materials to mix and create a harder substance used to build an object.

Curriculum Connection
MOK.1 Investigate observable characteristics of familiar objects and materials in their environment
   c. Differentiate between objects and the materials used to construct the object.
   d. Identify observable characteristics of materials, such as color, texture, and odor, and observable characteristics of objects, such as shape, size, and weight.

Materials
Materials:
- Sand (about a cup per students)
- Cornstarch (2 boxes)
- Water
- Old Pot
- Stir stick
- Shells (for decorating)
- Piece of square flat cardboard one per students
- Bowl of water

Procedure:
Set: 10 minutes
Show students some dry sand. Ask them if they could use that dry sand to make something sturdy like a sand castle. Ask students what they would need to do so that they could use the sand to make a sturdy object. Can the sand return back to its original state? How? Use part of this video to show the science of sandcastle building
http://www.youtube.com/watch?v=v0BzfN3FZzc&feature=related

Development: 2 days
1. Mix the sand and cornstarch in an old pot. Make sure it's one that you won't use anymore to cook your family's meals, because the sand and cornstarch can really scratch up a good pot.
2. Pour the water into the sand and cornstarch mixture and heat on the stove over low heat. (This step may be best for grown-ups only.) Do only a few portions
at a time.
3. Keep stirring until the sand is close to the consistency of very thick mud.
4. Cool the mixture in another bowl. Lay some newspaper down in an area where your child will work with the sand. Keep the piece of cardboard handy for when students are ready to build her castle.
5. Once the mixture has cooled, dump it onto the newspaper. Make sure the mixture is completely cooled before letting the students dig in.
6. Explain to students that they should knead the mixture in her hands until it feels like Play-doh. If the sand starts to dry out, wet her hands and let her continue to work with the mixture. (Keep a bowl of water handy for this purpose.)
7. And now the real fun begins: have students free-form a castle onto her piece of cardboard. Talk to students about creating different forms – a square castle perhaps, or a tall and pointy one. Encourage them to use their imagination when building. And don't be afraid to make your own sand castle along with them!
8. Before the sand dries, apply shells around the castle to give it an extra, beachy touch.

Closure: 10 minutes
Allow time for clean-up
Review with students that everyday objects are made from one or more materials. Ask students what materials were used to make the sandcastles.
Review that some objects can be changed from one state to another and can not be changed back to the original state. Explain that some substances can be changed from one state to another and can be changed back. Example, dry sand to wet sand to dry again.

Assessment
Ask students questions and mark on the checklist if they understand the concepts addressed in this unit.
Use this as a summative assessment
Use checklist attached with this unit.

Assessment:
Cover sand with plastic and put it in containers to use the next day if students have not quite finished the first day.
Assess if students understand the concept of parts making a whole. Go around and ask students questions to assess their understanding. Use a checklist.