

Unit Plan - Integrated Learning Segment

Key Assessment

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***Focal Science Standard(s):* K.PS1.01. Plan and construct an investigation to describe and classify different kinds of materials including wood, plastic, metal, cloth, and paper by their observable properties (color, texture, hardness, and flexibility) and whether or not they are natural or human-made.**

A second standard is K.ETS.2. 1 Use appropriate tools (magnifying glass, rain gauge, basic balance scale) to make observations and answer testable scientific questions.

Theme/Topic: PROPERTIES OF MATERIALS

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Introduction and Rationale (a)

Background

This 2-week Unit Plan supports students' thinking and learning related to physical science and the physical, observable properties of different types of materials. The Unit Plan also integrates the links between engineering, technology, science, and society as students use the appropriate tools to ask and answer testable questions. The teacher will be implementing many hands-on and minds-on STEM activities that will allow opportunity for inquiry. Inquiry can be understood as the process of "posing deliberate questions that will guide students through the process of finding the answers themselves" (Lange, Brenneman, & Mano, 2019, p. 37). A variety of activities and lessons will be used to integrate other content areas into this science-based unit plan. For example, math will be integrated into the unit plan. Students will learn and practice how to properly measure the length of materials. This skill will be used throughout the unit to describe the materials and when completing the summative clothing activity. The activity and lesson are developmentally appropriate because according to the Tennessee State Math Standards, students are expected to describe and sort objects in many different ways, including length. The Unit Plan was created the diverse needs and abilities of kindergarteners in mind, is appropriate for a constructive classroom environment, and is in line with current thinking of scientific inquiry and the 5Es as described below.

Rationale: Diverse Learning Needs and Relevance to Specific Students

The activities in this Unit Plan provide opportunity for accommodation and modification. This is evident through accommodating to the needs of children who need more support and to the children who need more of a challenge. For example, students will work in groups moving from table to table to explore the different types of materials. Students will be placed in groups

with diverse abilities, or cooperative groups. Students that need more support will be in groups with students that are on grade level and students that need more challenge this will allow learners to support, push each other, and learn from each other throughout the activity (Ward, 1987).

The Unit Plan will be expanding children's knowledge of energy and its interactions. This unit is appropriate for kindergarten due to the fact that it draws from a kindergarten state standard, K.PS1.01 (Tennessee State Board of Education, 2017). I know that this unit is also appropriate for this particular group of children because of an observation and discussion with them at University School. From this discussion, I learned that these students already have a strong understanding of what different types of materials are. As a result, this unit focus more on the properties of materials and how they can be used to create a variety of objects. In sum, I have planned activities and lessons that are developmentally appropriate to the grade, age, and ability level for each child.

Science, Inquiry, Constructivism, & Practices

The 2-week unit will focus on materials such as wood, metal, plastic, metal, and cloth and their observable properties (Tennessee State Board of Education, 2016). Children will explore the different types of materials to have a better understanding of each material's properties. This unit plan will be conducted as an inquiry-based unit plan. Activities in this plan will be used to guide students to ask and answer real, testable questions that they may have about these materials. For example, during the clothing creation process, I will use guided inquiry because I will give students the materials and a question to explore (Banchi & Bell, 2008), *Can you create your own clothing design?* but students will formulate their own design and

prototype. Student will have chances to learn content and scientific practices during these experiences, such as measuring with a ruler, the relationship between clothing and weather, and physical properties.

This approach is in line with Vygotsky's constructivist theory of development, ZPD (Jalongo, 2012). This zone is defined as the area of learning in which the student can complete the task with a little bit of assistance from the instructor. As the student continues to master content, the zone becomes more challenging. In this unit, I know that these learners can already identify different types of material. Therefore, the instructor must teach above this level of knowledge. Gradually, the expectations of these students will become more complex. The Unit Plan also aligns to the current expectations for grade level instruction and understanding of matter and its interactions as described in the *Framework for K-12 Science Education* (National Research Council, 2012).

5Es Framework

The unit is structured around the 5Es learning cycle (Bybee, 2014). Each of the activities in this unit plan align with one of the 5Es (engage, explore, explain, elaborate, and evaluate) and are mostly found in the correct cyclical order. For this unit plan, the cycle will be repeated twice. The students will participate in an **Engage** on the first day by listening to a song about materials. The song will create interest as students will be welcomed to sing and dance along. After that, we will **Explore** by investigating samples of materials that we will be working with over the course of the next two weeks. This activity serves as a hands-on introduction to the observable properties of materials. On the next day, we will **Explain** by reading the text, *What are Materials*. This story will be a minds-on read aloud and discussion about the importance of

materials. Next, the students will begin the **Elaborate** and **Evaluate** stage. This is a three-part activity in which students will make observations about the physical and observable properties and record their findings in their science journals. For the second **Engage**, students will participate in a discussion about clothes to get them excited for working on their own clothing prototype. Students will then **Explore** by creating their own drawing, designs, and ideas about the clothing they wish to make. We will then **Explain** by reading the story, *Where Did My Clothes Come From?* This story will further discuss different types of clothing and the weather they should be worn in. Next, we will **Elaborate** by furthering the design process and creating a clothing prototype. Students will choose their own materials and construct their design. In the final **Evaluate** phase, students will present their finished designs to the class. The students will answer questions about the materials used, why they chose these materials, what weather conditions they would wear their design, and how they think they did throughout the design process.

References

- Banchi, H., & Bell, R. (2008). The many levels of inquiry. *Science and children*, 46(2), 26.
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Tennessee State Board of Education. (2017). *Tennessee Academic Standards for Science*.

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<https://educationnorthwest.org/sites/default/files/InstructionalGrouping.pdf>

Standard/s Addressed, Goals, and Objectives for the Unit (b)

Standards addressed. The primary standard for my Unit Plan is for kindergarten students from the Tennessee State Science Standards, K.PS1.1. “Plan and construct an investigation to describe and classify different kinds of materials including wood, plastic, metal, cloth, and paper by their observable properties (color, texture, hardness, and flexibility) and whether or not they are natural or human-made.” (Tennessee State Board of Education, 2017, p. 19). A secondary standard is K.ETS.2.1 “Use appropriate tools (magnifying glass, rain gauge, basic balance scale) to make observations and answer testable scientific questions” (2017, p. 20).

Goals. The goals of this unit are for children to be able to identify and describe the observable properties of materials including wood, plastic, metal, cloth, and paper. Another goal is that the learner will gain understanding that the properties of materials determine what the materials are used for

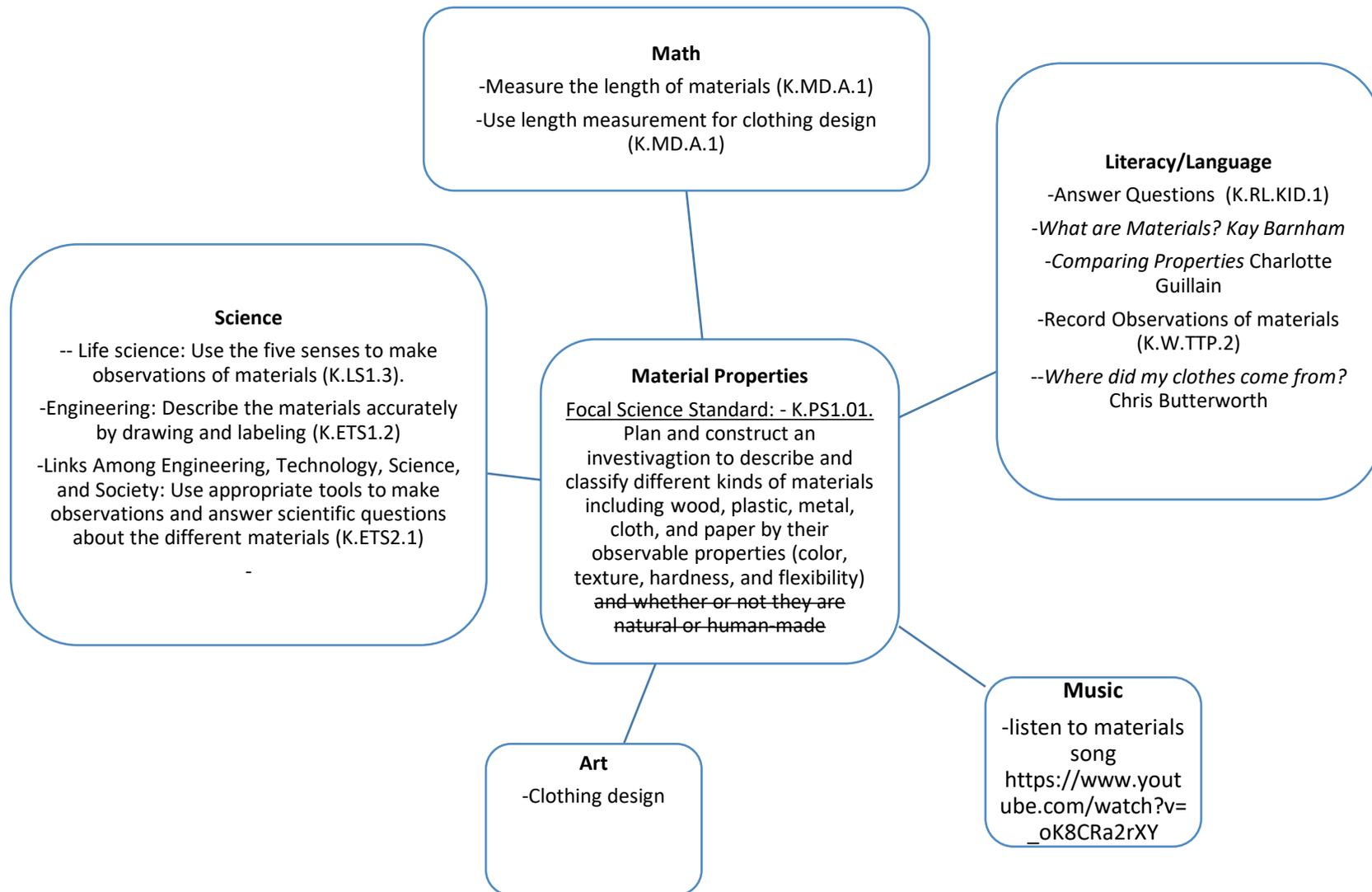
Objectives. The objectives of this unit include that the learner will apply his or her knowledge of the material cloth to design his or her own clothing design prototype. The learner will apply his or her knowledge of cloth properties to determine the appropriate weather and or season to wear their clothing design.

References

Tennessee State Board of Education. (2017). *Tennessee Academic Standards for Science*.

Nashville, TN: Tennessee Department of Education. <https://www.tn.gov/education/instruction/academic-standards/science-standards.html>

A Curriculum Web (c)



Title and Description of Learning Experiences (d)

Overview

The learner will participate in a variety of activities throughout the completion of this unit plan. The learner will have hands on experiences with samples of each type of material wood, paper, plastic, metal, and cloth. The learners will then make their own observations about the properties of each material and record them in their science journals.

During this unit plan, the students will also learn more about materials from other media. They will look at digital images of materials. Listen and watch a materials song video. As well as listen to read alouds and engage in discussion of books about materials.

Students will culminate their knowledge to complete the final art and engineering experience of this unit. The learners will apply their knowledge of materials and cloth properties to draw, design, and construct their very own article of clothing. The students will then present the final piece to the class.

Calendar

Week 1 of 2

Schedule	Monday	Tuesday	Wednesday	Thursday	Friday
Free Play/Center/ Arrival	Listen to materials song https://www.youtube.com/watch?v=oK8CRa2rXY				
Welcome/Whole Group Books		Read <i>What are Materials</i>			Discussion about Clothes and Intro to Clothing Activity
Math			Measurement: Length	Measurement Length	
Science	*Introduce real examples of Materials	Explore and Record: Wood and Metal	Explore and Record: Paper and Plastic	Explore and Record: Cloth	Clothing Design: Draw
Transition					
ELA				*Read <i>Comparing Properties</i>	
Small Group					
Free Play/Outside Departure					

* Complete lesson plan

Week 2 of 2

Schedule	Monday	Tuesday	Wednesday	Thursday	Friday
Free Play/Center/ Arrival					
Welcome/Whole Group Books					
Math					
Science	Clothing Design: Draw	Clothing Design: Real Materials	Clothing Design: Real Materials	Clothing Design: Real Materials	Clothing Design: Presentation
Transition					
ELA	Read <i>Where did my clothes come from?</i>				
Small Group					
Free Play/Center/ Departure					

* Complete lesson plan

Titles and Descriptions

Week 1

Day 1

1. Listen to materials song https://www.youtube.com/watch?v=_oK8CRa2rXY (engage)
 - a. Students will listen to a song about materials and their properties. The song will serve as an introduction to the materials that students will be learning about over the course of the next two weeks. Students will be encouraged to sing along and dance to the song if they want. The song can be repeated throughout the course of the unit to prepare students for lessons and activities about materials.
2. Introduce samples of materials (explore)
 - a. This will be the students' first opportunity to interact with the different types of materials that they will be learning about over the next two weeks. This activity is meant for students to get to know the materials. What do they feel like? What do they look like? Where have I seen this material before?

Day 2

3. Read *What are Materials?* (explain)
 - a. This storybook is about two children that discover some treasure. They learn that each piece of treasure is an object made of materials. This book will be used to incorporate literature into the unit. Students will ask and answer questions about the text.
4. Explore and record activity part 1 wood and metal (elaborate)
 - a. This is part one of a three-part activity. Students will have access to samples of materials in small groups. Each station will either have samples of wood or metal. Students will interact with the materials and record observations of the properties of each material in their science journals.

Day 3

5. Explore and record activity part 2 paper and plastic
 - a. This is part two of a three-part activity. Students will have access to samples of materials in small groups. Each station will either have samples of paper or plastic. Students will interact with the materials and record observations of the properties of each material in their science journals.
6. Measurement
 - a. Part one of two-part activity. Students will participate in a direct instruction lesson about how to properly measure objects. Students will then practice these new skills by measuring the lengths of the material.

Day 4

7. Explore and record activity part 3 cloth
 - a. This is part three of a three-part activity. Students will have access to samples of materials in small groups. Each station will either have samples of cloth. Students

will interact with the materials and record observations of the properties of each material in their science journals.

8. Read *Comparing Properties* and Assessment (Evaluate)
 - a. The teacher will conduct a lesson in which the teacher will lead discussion about materials and their properties. The teacher will then read the text, *Comparing Properties* this text will serve as a form of review of what the students have learned this far in the unit. The students will then complete an assessment about the properties of materials. (See Lesson Plan Two)
9. Measurement
 - a. Part two of a two-part activity. Students will expand on exploration of materials by measuring the lengths of different materials.

Day 5

10. Discussion about clothes (engage) and introduce clothing activity
 - a. During this time, students will talk about the clothes that they wear. Students will talk about what kind of clothes they should wear depending on the weather. The teacher will introduce the clothing activity that they will work on throughout the week.
11. Start clothing activity by drawing design (explore)
 - a. Students will start brainstorming what kind of clothing they would like to design. Students will draw and label their design.

Week 2

Day 6

12. Continue drawing design (explore)
 - a. Students will continue drawing, labeling, and thinking about their design.
13. Read *Where did my clothes come from?* (explain)
 - a. Students will read a story about clothes. The book explains that clothing is made out of different materials. This will provide students with insight about what materials they would like to use for their design.

Day 7

14. Create the design using real materials (elaborate)
 - a. Students will use their design and knowledge of different cloths to begin creating his or her design on paper. Students will use cut and attach materials to paper to make a more realistic sample of his or her design.

Day 8.

13. Continue creating the design using real materials (elaborate)

Day 9.

14. Continue creating the design using real materials (elaborate)

Day 10.

15. Present final design to the class (evaluate)

Students will present his or her final design to the class. Each student will explain his or her design. Students should explain where they would wear this specific outfit. He or she will explain what weather the outfit is ideal for and why. The student will explain his or her choice of materials. After the student has presented, I will ask the student more privately to evaluate themselves. The students will also evaluate themselves on the project and the unit overall. Self-evaluation will include: Do you think you know more about materials than you did at the start of the unit? Do you think you know more about cloth and clothing after this project? Why?

Two Complete Lesson Plans (e)

Complete Lesson Plan 1

Lesson Title: Explore Materials

Grade/Level: K

Date/Learning Experience #:

Curriculum Standards	Essential Question(s)/I Can Statement(s)
<p><i>State Curriculum Standards – Underline your <u>language/vocabulary words</u></i></p> <p>K.PS1.1 Plan and <u>conduct an investigation</u> to describe and classify different kinds of materials including <u>wood, plastic, metal, cloth, and paper</u> by their observable properties (color, texture, hardness, and flexibility) and whether they are natural or human-made.</p>	<p><i>What question(s) or I Can statement(s) drive your instruction?</i></p> <p>What are these different materials used for? I can describe the observable properties of a material.</p>
<p>Lesson Objective(s) – Student Learning Outcome(s) for this learning experience</p>	
<p><i>Objectives use active verbs, are measurable (if applicable), and link to standards. Consider using Bloom’s Taxonomy or Webb’s Depth of Knowledge.</i></p> <p>TLW examine samples of different materials including wood, plastic, metal, cloth, and paper in groups to formulate at least one question or observation about the materials.</p>	
<p>Knowing Your Learners</p>	
<p><i>Describe pre-requisite skills students already know that will help them meet the lesson objective(s). What is your evidence that students need this/these skills(s)? This may include pre-assessment data; student personal, cultural or community assets you have gathered and observations you have made concerning your students.</i></p> <p>The learners at the University School already have a strong understanding of what materials are. When presented with example of cloth, paper, wood, metal, and plastic, the students would quickly identify what the sample was made out of. For example, when presented with a pencil the students were asked, “What is this object made of?” The students immediately explained that the pencil was made out of wood. Therefore, the students do not need more instruction about what the different materials are. The next logical step for these students is to describe the observable properties of each material.</p>	
<p>Assessment/Evaluation</p>	
<p><i>How will students demonstrate understanding of lesson objective(s)?</i></p> <p>Formative: <i>How will you monitor student progress towards lesson objectives as you are teaching?</i></p> <p>During the examination of materials, students will work in groups. During the time, the instructor will move from group to group. The instructor will take anecdotal notes. The teacher will jot down notes about some of the observations and questions that the students may have. The instructor will bring up these questions and observations in a discussion.</p> <p>Summative: <i>What evidence (formative and/ or summative) will you collect and how will you document student learning/ mastery of lesson objective(s)? A summative assessment is not needed for every lesson; however, it is required for every lesson submitted for CAEP data collection points I, II, and III.</i></p> <p>During discussion, each group will be asked to present at least one question or observation that they had during the exploration period with the materials. The instructor will record these questions during the discussion on a T-chart on large piece of paper in the front of the class. One side of the chart will be for questions and the other side will be for observations.</p> <p>Academic Feedback: <i>How will you give academic feedback? How will your academic feedback promote student understanding of the learning objective(s) or state standard(s)?</i></p> <p>The instructor will provide feedback during the group exploration part of the lesson. The instructor will provide encouraging feedback such as, “I see that you are all working very hard, you must be very proud of yourselves.” The instructor will also use elaboration</p>	<p>Assessment/Evaluation Modifications</p> <p><i>What modifications will you make on assessments/ evaluations for students with diverse and/ or special needs (i.e. students with IEP or 504, struggling learners, advanced learners) and will these modifications be within/ for small groups or individuals?</i></p> <p>Any students with a 504 or IEP will be addressed and modifications will be made per student. Students will be placed in groups of students with diverse abilities. This will allow students to collaborate and help each other learn.</p>

feedback. For example, when a student makes an observation the teacher will say, “Why do you think that?” “Does anyone else agree with what _____ observed?”

Academic Language Demands

Function and Product of the Lesson *The function is the verb, usually a Blooms verb (e.g., analyze, interpret, recount), that guides the language objective of the lesson. This includes a product that students will either write, say, present, or do that involves Academic Language (e.g. essay, present, recount).*

TLW examine the materials in groups and present at least one question or observation to the class that was formulated during their observation.

Academic Vocabulary *What specialized terms and phrases do students need to understand what they are expected to do? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

1. Observation- a statement about something that has been noticed
 - a. TLW have to understand what an observation is to align with the lesson’s objective. In order to make and present an observation, the learner must know what an observation is.

Content Vocabulary *What are the key vocabulary words, symbols, or sounds in this lesson? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

1. Material- something that is used to make something else
 - a. TLW have to understand what a material is in order to master the objective and the standard. The learner needs to understand that all the things they are examining are materials.

Syntax and/or Discourse, Mathematical Precision (math only). ~~This section is not required for Early Childhood or Special Education.~~

Syntax *What are the specific ways or conventions for organizing symbols (e.g., linear, horizontal), words (grammar), phrases, or graphics that students need to know to be able to do what you are asking?*

Discourse *What are the specific ways in which members of a discipline (e.g., scientist, historian, etc.) talk, write, and communicate knowledge that students need to know to be able to do what you are asking (e.g., essays, presentations, performance, journal, debate, historical account, signal)?*

Language Supports *What general instruction will you provide to help students in the whole class (e.g., word walls, learning partners, guided notes) learn the discourse/ syntax? What focused instruction (e.g., Venn diagrams, graphic organizers, outlines, student examples, sentence stems) will you provide to help students learn the discourse/ syntax (can be completed in small groups)? What individual instruction that targets the needs of an individual student(s) will you provide to help that student(s) learn the discourse/ syntax? What opportunities will you provide for students to practice language/ vocabulary and develop fluency? What tools (e.g., EQ or vocabulary board, Venn diagram, anchor chart, vocabulary cards, graphic organizer, peer support, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games) will you use to help students meet the language demands?*

General Supports – *Strategies used to support the whole class and may be used to support more than one demand (e.g., Venn diagram, learning partners, word wall, anchor chart, vocabulary cards, graphic organizer, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games). These strategies can cross disciplines and be used in a variety of lessons.*

The lesson will begin by listening to a song about materials and their properties. This song introduces some of the vocabulary that will be used in this lesson. The video shows terminology and example of materials and properties.

Targeted Supports – *Strategies that focus toward a specific language demand (e.g., Venn diagrams, graphic organizers, outlines, examples, sentence stems). These may be addressed during small groups. These can be general supports that are modified for specific students or groups of students.*

Students that need additional support will be given a chart of vocabulary and examples that will be used throughout this lesson. Vocabulary will include paper, plastic, metal, cloth, wood, hard, soft, etc.

Individual Supports – *Supports used to target the specific needs of an individual student (e.g., ELL, student with autism, struggling reader or writer, student with significant language delays). These students may or may not have been formally identified and may or may not have an IEP or 504 plans.*

ELL students will be given the targeted support chart in both English and their native language.

Instruction – When designing your instruction, consider when you will implement formal and informal assessments/evaluations, when you will provide feedback, and when you will teach academic language. Therefore, this section should include aspects written above.

Lesson Part	Description of Activities and Instruction (Teacher Does)	Description of Activities and Instruction (Students Do)	Meeting Individual & Group Needs /Learning Styles <i>Plans instruction to meet the needs of individual students. Adaptations are tied to learning objectives. Specific individual or group learning includes requirements in IEP or 504 plans.</i>
<p>Set/Motivator: <i>Restate and address your Essential Question. How do you engage student interest in the content of the lesson? How does this relate to previous learning? Use knowledge of students' academic, social, and cultural characteristics.</i></p>	<ol style="list-style-type: none"> 1. TTW call students to the carpet by tables. 2. TTW introduce that we will be working with different types of materials: wood, metal, paper, plastic, and cloth. 3. TTW remind students to raise their hands to ask and answer questions. 4. TTW ask students if they can share an object made out of these materials. The teacher can ask about each material individually. <ol style="list-style-type: none"> a. Can anyone tell me an object made out of wood? b. TTW use wait time between questions. 	<ol style="list-style-type: none"> 1. TLW take a seat on the carpet when dismissed. 2. TLW listen to the instructor. 3. TLW listen and remember to raise his or her hand. 4. TLW raise his or her hand to answer questions. TLW use prior knowledge to answer questions about materials. 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Instructional Procedures/Learning Tasks: <i>Provide specific step-by-step details of lesson content aligned with objectives, utilizing a variety of teaching strategies.</i></p>	<ol style="list-style-type: none"> 5. TTW tell the students that we will listen to a song about material. 6. TTW play the song and video for the students. During this time TTW put out the materials at the different tables. 7. TTW tell the students that they will have a chance to work with these materials today. 8. TTW explain that the students will work in groups to explore the materials in stations. Each table will have a different type of material. You will explore with the materials to make observations. 	<ol style="list-style-type: none"> 5. TLW listen. 6. TLW watch and listen to the song. 7. TLW listen. 8. TLW listen. 9. TLW listen. 10. TLW listen. 11. TLW ask any questions that they may have about materials and/or the activity. TLW also listen to other students ask questions. 12. TLW dismiss to a table with his or her group when called on. 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>

	<p>9. TTW explain that an observation is something that you notice or find out about the materials.</p> <p>10. TTW explain that you will work with your group to make come up with some observations and questions that you have about the materials (HOT Question 1).</p> <p>11. TTW ask the students if they have any questions.</p> <p>12. TTW call the students names and assign them to a group. TTW tell each group which table to go to.</p> <p>13. TTW walk around the tables and take anecdotal notes about some of the comments and/or questions the students say when working.</p> <p>14. After a few minutes, TTW instruct students to switch tables.</p> <p style="padding-left: 40px;">a. TTW repeats steps 13 and 14 until every group has been to every table.</p> <p>15. TTW call students back to the carpet by group.</p> <p>16. TTW ask students to share some of their questions and observation.</p> <p style="padding-left: 40px;">a. TTW record the questions and observations on the T-chart.</p> <p style="padding-left: 40px;">b. TTW ask students to elaborate on their observations by asking questions such as, “Can you explain why thought that?” (HOT Question 2)</p> <p style="padding-left: 40px;">c. To continue discussion the teacher will share some of the questions and comments from the anecdotal notes.</p>	<p>13. TLW work with the materials at his or her table. T</p> <p style="padding-left: 40px;">a. LW interact with materials by using his or her senses.</p> <p style="padding-left: 40px;">b. TLW collaborate with the other members of his or her group by talking about the materials, any observations, and any questions that they might have.</p> <p>14. TLW switch to a different table that they are instructed to go to.</p> <p style="padding-left: 40px;">a. TLW repeat steps 13 and 14 until every group has been to every table.</p> <p>15. TLW return to the carpet when his or her group is called.</p> <p>16. TLW share questions and observations and listen.</p>	
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<p>Questions and/or activities for higher order thinking: <i>These are open-ended and cannot be answered by yes or no. These can be asked at various points throughout the lesson and guide rather than direct student thinking.</i></p>	<ol style="list-style-type: none"> 1. Examine the materials to formulate questions and observations. 2. Explain how you came to this observation or question, 3. Summarize what we did today. 	<ol style="list-style-type: none"> 1. "I saw that the wood objects do not bend easily." 2. "I learned this when I tried to bend the wood chips and the pencil." 3. "Today we learned about making observations." "Today we worked with materials." 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Closure: <i>Makes clear connections to real-world situations and requires students to reflect on and apply their learning through verbal or written expression.</i></p>	<ol style="list-style-type: none"> 17. TTW begin to close the discussion by asking students to share what they did and learned today. 18. TTW use wait time. 19. TTW call on students to answer. 20. TTW ask students to share why they think that learning about materials is important. 21. TTW call on students to answer. 22. TTW explain that we will continue working with more materials tomorrow. 	<ol style="list-style-type: none"> 17. TLW listen. 18. TLW think about the questions and think of answers. 19. TLW raise his or her hand to answer the question. 20. TLW listen and think about how to answer the question. 21. TLW raise his or her hand to answer. 22. TLW listen. 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Material/Resources: <i>What do you need for this lesson? Identify, within a bulleted list, the specific materials and resources that you will use. Describe how these materials and resources add value, depth, and extend students' learning.</i></p> <ul style="list-style-type: none"> • Video: https://www.youtube.com/watch?v=_oK8CRa2rXY <ul style="list-style-type: none"> ○ This video will be used to introduce some of the terminology that will be used in the lesson and the materials unit. The song will be a fun way for students to practice and learn vocabulary. • Wood: wood chips, pencils, sticks, wood floor sample, wooden block <ul style="list-style-type: none"> ○ These materials will be used at a table for material exploration. These samples of wood will provide students with a hands-on experience with the material. • Plastic: plastic utensils, water bottle, plastic cup, plastic bag, tubberware 	<p>Technology: <i>(a) Describe the technology you plan to use in your lesson, (b) How does the identified technology in your lesson improve student learning? If applicable, (c) explain how you will use this technology to support a variety of student needs within the learning environment, and (d) If you used this technology to design and implement formative and/or summative assessments, please explain. Did you use the technology to collect and/or analyze your data to inform instruction? Explain.</i></p> <p>A song and video will be used during this less. This video will improve student learning because it introduces vital vocabulary and shows examples of the vocabulary. Presenting the vocabulary in a song will be more engaging for young learners. Using this song and video will be especially beneficial for visual, auditory, and musical learners.</p>		

- These materials will be used at a table for material exploration. These samples of plastic will provide students with a hands-on experience with the material.
- Paper: piece of paper, paper bag, newspaper, books, tissue paper
 - These materials will be used at a table for material exploration. These samples of paper will provide students with a hands-on experience with the material.
- Metal: aluminum foil, nuts and bolts, coins, keys, aluminum can
 - These materials will be used at a table for material exploration. These samples of metal will provide students with a hands-on experience with the material.
- Cloth: cotton fabric, wool fabric, silk fabric, linen fabric, polyester fabric
 - These materials will be used at a table for material exploration. These samples of cloth will provide students with a hands-on experience with the material.
- T-Chart on Large Paper
 - The T-chart will be used to record the students' questions and observations. Writing the chart on large paper will help all students to see the chart.

Co-Teaching Strategies Used: *(highlight and explain all that apply):* **One Teach, One Observe**; One Teach, One Assist; Station Teaching; Parallel Teaching; Supplemental Teaching; Alternative (Differentiated); Team Teaching

One teacher will lead the lesson and instruction. The observing teacher will record which students answer questions during the discussion about questions and observations that they have about materials. Both teachers will record anecdotal notes as the students are working.

Management

Management: *Explanation of processes and/or procedures, transitions from one activity to another, strategies for gaining attention, motivating students to engage in the lesson and focus on learning (e.g. work boards, posted procedures, modeling, positive feedback, redirection). If management decisions were addressed above, please bold those processes and procedures.*
 To transition from tables to the carpet, students will be called by tables. This procedure will be used to prevent all students from moving at one time which is likely to cause problems. Students will also be assigned groups and where to sit to be more time efficient. Students will be called on by groups to return to the carpet.

Theory/Rationale

The lesson is part of the 5E's structure of Engage, Explore, Explain, Elaborate, and Evaluate. This lesson is the Explore stage of the 5E's cycle. In the Explore phase, "Students should have experiences and the occasion to formulate explanations, investigate phenomena, observe patterns, and develop their cognitive and physical abilities" (Bybee, 2014, p. 11). In this lesson, students will investigate the presented materials to formulate their own observations and questions that they have.

Bybee, R. W. (2014). The BSCS 5E instructional model: Personal reflections and contemporary implications. *Science and Children*, 51(8), 10-13.

Complete Lesson Plan 2

Lesson Title: Comparing Properties

Grade/Level: K

Date/Learning Experience #:

<p>Curriculum Standards</p> <p><i>State Curriculum Standards – Underline your language/ vocabulary words</i></p> <p>K.PS1.1 Plan and conduct an investigation to describe and classify different kinds of materials including wood, plastic, metal, cloth, and paper by their observable properties (color, texture, hardness, and flexibility) and whether they are natural or human-made.</p>	<p>Essential Question(s)/I Can Statement(s)</p> <p><i>What question(s) or I Can statement(s) drive your instruction?</i></p> <p>I can describe the observable properties of the materials.</p>
<p>Lesson Objective(s) – Student Learning Outcome(s) for this learning experience</p> <p><i>Objectives use active verbs, are measurable (if applicable), and link to standards. Consider using Bloom’s Taxonomy or Webb’s Depth of Knowledge.</i></p> <p>TLW apply his or her knowledge of the informational text <i>Comparing Properties</i> and his or her own prior experiences with materials to answer questions about the properties of materials with 80% accuracy.</p>	
<p>Knowing Your Learners</p> <p><i>Describe pre-requisite skills students already know that will help them meet the lesson objective(s). What is your evidence that students need this/these skills(s)? This may include pre-assessment data; student personal, cultural or community assets you have gathered and observations you have made concerning your students.</i></p> <p>The learners at the University School already have a strong understanding of what materials are. When presented with example of cloth, paper, wood, metal, and plastic, the students would quickly identify what the sample was made out of. The students also have prior experience of describing the observable properties of the materials during the elaborate phase of the unit. From these experiences, the students are ready to answer questions about the materials.</p>	
<p>Assessment/Evaluation</p> <p><i>How will students demonstrate understanding of lesson objective(s)?</i></p> <p>Formative: <i>How will you monitor student progress towards lesson objectives as you are teaching?</i></p> <p>The students will participate in a discussion during the read aloud of <i>Comparing Properties</i>. These questions and responses will be used to guide the discussion and plan for future learning and assessments.</p> <p>Summative: <i>What evidence (formative and/ or summative) will you collect and how will you document student learning/ mastery of lesson objective(s)? A summative assessment is not needed for every lesson; however, it is required for every lesson submitted for CAEP data collection points I, II, and III.</i></p> <p>Students will complete an assessment about the properties of materials. A PowerPoint of questions and images will be displayed on the board. The students will document their answers on an assessment sheet. On this page, students will circle their answers that correspond with the question on the board.</p> <p>Academic Feedback: <i>How will you give academic feedback? How will your academic feedback promote student understanding of the learning objective(s) or state standard(s)?</i></p> <p>The teacher will use feedback to guide discussion and ask students to elaborate. For example, the teacher may ask, “How do you know that this material is soft?” Feedback can also be used to encourage students. “I see that you are working very hard, you must be proud of yourself.”</p>	<p>Assessment/Evaluation Modifications</p> <p><i>What modifications will you make on assessments/ evaluations for students with diverse and/ or special needs (i.e. students with IEP or 504, struggling learners, advanced learners) and will these modifications be within/ for small groups or individuals?</i></p> <p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Academic Language Demands</p> <p>Function and Product of the Lesson <i>The function is the verb, usually a Blooms verb (e.g., analyze, interpret, recount), that guides the language objective of the lesson. This includes a product that students will either write, say, present, or do that involves Academic Language (e.g. essay, present, recount).</i></p>	

TLW apply his or her knowledge of the properties of materials and the information presented in *Comparing Properties* to answer questions about the characteristics of properties.

Academic Vocabulary *What specialized terms and phrases do students need to understand what they are expected to do? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- Describe-use words to talk about something
 - TLW need to know how to describe the properties of materials in order to master the standard.

Content Vocabulary *What are the key vocabulary words, symbols, or sounds in this lesson? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- Properties- a trait or thing that a material has
 - TLW need to know what properties are in order to master the standard and objective. TLW discuss and answer questions about properties.

Syntax and/or Discourse, Mathematical Precision (math only). ~~This section is not required for Early Childhood or Special Education.~~

Syntax *What are the specific ways or conventions for organizing symbols (e.g., linear, horizontal), words (grammar), phrases, or graphics that students need to know to be able to do what you are asking?*

Discourse *What are the specific ways in which members of a discipline (e.g., scientist, historian, etc.) talk, write, and communicate knowledge that students need to know to be able to do what you are asking (e.g., essays, presentations, performance, journal, debate, historical account, signal)?*

Language Supports *What general instruction will you provide to help students in the whole class (e.g., word walls, learning partners, guided notes) learn the discourse/syntax? What focused instruction (e.g., Venn diagrams, graphic organizers, outlines, student examples, sentence stems) will you provide to help students learn the discourse/syntax (can be completed in small groups)? What individual instruction that targets the needs of an individual student(s) will you provide to help that student(s) learn the discourse/syntax? What opportunities will you provide for students to practice language/vocabulary and develop fluency? What tools (e.g., EQ or vocabulary board, Venn diagram, anchor chart, vocabulary cards, graphic organizer, peer support, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games) will you use to help students meet the language demands?*

General Supports – *Strategies used to support the whole class and may be used to support more than one demand (e.g., Venn diagram, learning partners, word wall, anchor chart, vocabulary cards, graphic organizer, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games). These strategies can cross disciplines and be used in a variety of lessons.*

Some of the key property terms will be written on the board for the entirety of the lesson for all of the students.

Targeted Supports – *Strategies that focus toward a specific language demand (e.g., Venn diagrams, graphic organizers, outlines, examples, sentence stems). These may be addressed during small groups. These can be general supports that are modified for specific students or groups of students.*

A copy of the key property terms will be given to learners that need additional support. These terms will be on a chart that also feature synonyms of the properties.

Individual Supports – *Supports used to target the specific needs of an individual student (e.g., ELL, student with autism, struggling reader or writer, student with significant language delays). These students may or may not have been formally identified and may or may not have an IEP or 504 plans.*

ELLs will be given a copy of the chart in English and their native language.

Instruction – When designing your instruction, consider when you will implement formal and informal assessments/evaluations, when you will provide feedback, and when you will teach academic language. Therefore, this section should include aspects written above.

Lesson Part	Description of Activities and Instruction (Teacher Does)	Description of Activities and Instruction (Students Do)	Meeting Individual & Group Needs /Learning Styles <i>Plans instruction to meet the needs of individual students. Adaptations are tied to learning objectives. Specific individual or group learning includes requirements in IEP or 504 plans.</i>
Set/Motivator: <i>Restate and address your Essential Question. How do you engage student interest in</i>	1. TTW call the students to the carpet by tables.	1. TLW take a seat on the carpet when called.	Any students with a 504 or IEP will be

<p><i>the content of the lesson? How does this relate to previous learning? Use knowledge of students' academic, social, and cultural characteristics.</i></p>	<ol style="list-style-type: none"> 2. TTW tell the students that they have now had a chance to explore all of the types of materials we will be using throughout the unit. 3. TTW ask students to share any observations they have made from exploring all of the materials. 	<ol style="list-style-type: none"> 2. TLW listen. 3. TLW raise his or her hand to share an observation with the class. 	<p>addressed and modifications will be made per student.</p>
<p>Instructional Procedures/Learning Tasks: <i>Provide specific step-by-step details of lesson content aligned with objectives, utilizing a variety of teaching strategies.</i></p>	<ol style="list-style-type: none"> 4. TTW explain to the students that we will read a book about the properties of materials. 5. TTW begin reading <i>Comparing Properties</i> to the class. During the reading TTW ask questions. <ol style="list-style-type: none"> a. “Does anyone know what is in this picture?” b. “Have you ever felt this object?” c. “From your experiences, do you agree that this object is soft?” d. “This object is made out of one of the materials we have been working with. Can you tell me what this object is made out of? What are some of the properties you have observed about this material?” 6. TTW finish reading the text. 7. TTW ask students if they have any questions about the text, discussion, or materials. 8. TTW answer any questions. 9. TTW dismiss students back to their tables. 10. TTW explain that they will be looking at the board and 	<ol style="list-style-type: none"> 4. TLW listen to the instructor. 5. TLW listen to the story. TLW answer questions. 6. TLW listen. 7. TLW listen. 8. TLW ask any questions that he or she may have. 9. TLW return to his or her table when dismissed. 10. TLW listen to the instructions. 11. TLW wait. 12. TLW watch, listen, and begin the assessment. 13. TLW listen, think about the answer, and circle an answer. 14. TLW give his or her paper to the teacher. 15. TLW listen. 16. TLW ask any questions that he or she may have. 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>

	<p>answering questions. TTW explain that they will circle their answers on a paper.</p> <ol style="list-style-type: none"> 11. TTW pass out the papers. 12. TTW begin the assessment. 13. TTW read each of the questions to the students. TTW tell the students to circle their answers. 14. TTW take up the papers at the end of the assessment. 15. TTW ask students if they have any questions about the assessment. 16. TTW answer any questions. 		
<p>Questions and/or activities for higher order thinking: <i>These are open-ended and cannot be answered by yes or no. These can be asked at various points throughout the lesson and guide rather than direct student thinking.</i></p>	<ol style="list-style-type: none"> 1. Relate prior knowledge and experiences materials to answer questions. 2. Compare the properties of materials. 3. Summarize what you have learned about materials. 	<ol style="list-style-type: none"> 1. "From working with the metal coins and cans, I know that metal is shiny." 2. "Metal is shinier than wood." 3. "I learned that a lot of plastic things can bend." 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Closure: <i>Makes clear connections to real-world situations and requires students to reflect on and apply their learning through verbal or written expression.</i></p>	<ol style="list-style-type: none"> 17. TTW explain that we are soon going to start a new part in our exploration of materials. 18. TTW ask students to summarize and share what they have learned up to this point about materials. 19. TTW will wait. 20. TTW call on students to share. 21. TTW ask students why materials are important. 22. TTW wait. 23. TTW call on students to share. 	<ol style="list-style-type: none"> 17. TLW listen. 18. TLW listen and think about how to summarize what he or she has learned about materials. 19. TLW continue to think about how to summarize what he or she knows about materials. 20. TLW raise his or her hand to answer. 21. TLW listen. 22. TLW think of why materials are important. 23. TLW raise his or her hand to answer. 	<p>Any students with a 504 or IEP will be addressed and modifications will be made per student.</p>
<p>Material/Resources: <i>What do you need for this lesson? Identify, within a bulleted list, the specific materials and resources that you will use. Describe how these materials and resources add value, depth, and extend students' learning.</i></p> <ul style="list-style-type: none"> • PowerPoint Assessment 	<p>Technology: <i>(a) Describe the technology you plan to use in your lesson, (b) How does the identified technology in your lesson improve student learning? If applicable, (c) explain how you will use this technology to support a variety of student needs within the learning environment, and (d) If you used this technology to design and implement formative and/ or summative assessments, please explain. Did you use the technology to collect and/ or analyze your data to inform instruction? Explain.</i></p>		

<ul style="list-style-type: none"> ○ The PowerPoint Assessment will allow students to see the pictures used for the assessment on a large scale. This will help learners be able to identify the properties of materials. ● <i>Comparing Properties</i> by Charlotte Guillain <ul style="list-style-type: none"> ○ This informative text discusses the properties of materials that the class has been learning about. The text will serve as a review before the assessment. ● Assessment Paper <ul style="list-style-type: none"> ○ The assessment paper will be used to record and evaluate students' understanding of materials and their properties. 	<p>Technology will be used in this lesson by using a PowerPoint. The PowerPoint will be used to conduct an assessment. The PowerPoint assessment will display the pictures on a larger scale. This will allow students to see the images more clearly to appropriately identify the property of the materials. The students will be evaluated based on their assessment paper responses.</p>
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Co-Teaching Strategies Used: *(highlight and explain all that apply):* **One Teach, One Observe**; *One Teach, One Assist; Station Teaching; Parallel Teaching; Supplemental Teaching; Alternative (Differentiated); Team Teaching*

One teacher will lead the lesson and instruction. The observing teacher will record which students answer questions during the read aloud discussion. The observing teacher will take anecdotal notes during the discussion,

Management

Management: *Explanation of processes and/or procedures, transitions from one activity to another, strategies for gaining attention, motivating students to engage in the lesson and focus on learning (e.g. work boards, posted procedures, modeling, positive feedback, redirection). If management decisions were addressed above, please bold those processes and procedures.*

To transition from tables to the carpet, students will be called by tables. This procedure will be used to prevent all students from moving at one time which is likely to cause problems. Students will periodically be reminded to raise his or her hand to answer questions.

Theory/Rationale

The lesson is part of the 5E's structure of Engage, Explore, Explain, Elaborate, and Evaluate. This lesson is the Evaluation stage of the 5E's cycle. "In the evaluate phase, the teacher should involve students in experiences that are understandable and consistent with those of prior phases and congruent with the explanations" (Bybee, 2014, p. 11). In this phase the reading, discussion, and assessment are all consistent with the previous learning about materials and their properties that have occurred in the previous phases of the unit.

Bybee, R. W. (2014). The BSCS 5E instructional model: Personal reflections and contemporary implications. *Science and Children*, 51(8), 10-13.

Is this material hard or soft?



Is this material hard or soft?



Is this material smooth or rough?



Is this material smooth or rough?



Is this material stiff or bendable?



Which material is shiny?



Which material is stiff?



Which material is hard?



Which material is bendable?



Which material is soft?



Name: _____

Directions: Circle your answer.



hard

soft



hard

soft



smooth

rough



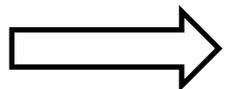
smooth

rough



stiff

bendable



6. Which material is shiny?



7. Which material is stiff?



8. Which material is hard?



9. Which material is bendable?



10. Which material is soft?



Unit Evaluation Plan (f)

Overview

The teacher will use both formative and summative assessments throughout this unit plan. The students will mostly complete formative assessments. The majority of these formative assessments include journaling, recording, drawing, and asking and answering questions. These formative assessments will be evaluated to determine what the students know and what they need to know. The summative assessment takes place at the end of the unit. Students will create and present their own clothing prototype. To create and present their clothing, student will apply their knowledge of materials, there properties, measurements, and what clothing is worn during seasonal changes. This assessment will be used to determine what the students took away from the entire unit.

Formative

The teacher will use formative assessment in each of the major activities to assess understanding. Pictures and notes will be taken throughout the unit to document the different stages of the unit. This documentation will be reviewed to determine what went well and adjustments that need to be made. During the first engage activity, the teacher will open a discussion to find out what the students know about materials and their properties after listening to the materials song. During this time, students will ask and answer questions about materials. During the first explore stage, students will ask and answer questions about the sample materials. During the explain stage, students will answer questions about the text, *What are Materials?* During the elaborate and evaluate stage, students will record observations of materials and properties in their science journals.

In the second engage activity, students will participate in a discussion about clothes. The students will ask and answer questions about clothes so that the teacher can gain a better

understanding of what the students know and what they need to know. For the second explore activity, students will begin to draw the clothes they would like to design. The teacher will review these drawings. In the second explain stage, students will ask and answer questions about the text *Where did my clothes come from?* In the second elaborate stage, students will create a prototype of their clothing design. These designs will be examined and reviewed by the instructor.

Summative

The final experience of this unit plan is that students will present their finished clothing prototype. During this presentation, students will explain the materials they used, why they used these materials, the properties of the materials they used, and what weather they would wear their clothing in. Students will be prompted to answer these questions. For the prototype creation, students will apply their knowledge of materials and their properties. Students will understand that a thicker cloth like wool helps you stay warm. The students will apply this knowledge in the design process to think about where and when would someone wear these clothes. Students will then present their final ideas to the class to share their knowledge. After the presentation, students will be asked to evaluate their own work and progress throughout the unit. Self-evaluation will include: Do you think you know more about materials than you did at the start of the unit? Do you think you know more about cloth and clothing after this project? Why?

A Letter to Parents (g)

Dear Parents,

Over the next two weeks, we will be exploring materials and their properties in the classroom. The materials that we will be working with are wood, plastic, metal, paper, and cloth. During the duration of this unit, your learner will have several hands-on experiences with these materials. One of the activities that your learner will participate in is making his or her own material journal. Over the course of three days, the class will explore samples of the different materials. They will then write any observations that they notice about the characteristics of each material. This journaling experience will be a great opportunity for your learner to practice using his or her senses to make discoveries.

To conclude this unit, your student will work on a clothing design project. For this final project, the students will use their knowledge of the material cloth from the hands on experiences and in-class instruction. The students will begin the project by drawing an initial design of the clothing item that they will make. The students will then select what kinds of fabrics they will use to make prototype, or sample, of their clothing. The students will then create their design out of the real cloth materials. Finally, the students will share their designs with the class.

For this final project, we are asking for any donations of materials that could be used. You and your learner should look around the house to see if you have any cloth materials that could be repurposed. Any kind of fabric that you can send it would be very helpful. Items may include blankets, sheets, pillowcases or even old clothes. All I ask is that any materials that are sent in are freshly washed. I will begin collecting the donations on Monday, April 27. I will continue to take donations through Friday, May 1.

I have attached some links of activities you may want to explore with your learner. The first is an activity from Science Sparks (<https://www.science-sparks.com/how-waterproof-is-it/>). For this activity, you and your learner will use different materials around your house to try to make a toy waterproof! The second activity is also from Science Sparks (<https://www.science-sparks.com/introducing-materials/>). For this activity, you and your learner will gather toys from around the house. Together you will then group the toys by the material that they are made of plastic, wood, metal, or fabric. This activity can also be done with any assortment of objects from around the house.

The students and I are looking forward to making these new discoveries together and we appreciate all of your help.

Sincerely,

Daisy Flomberg

List of References (h)

Teachers

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Nashville, TN: Tennessee Department of Education. <https://www.tn.gov/education/instruction/academic-standards/science-standards.html>

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Families

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Vanstone, E., Veronica, Carrie, & Haworth, M. (2020, April 18). Materials for Key Stage 1 -

Sorting Toys. Retrieved from <https://www.science-sparks.com/introducing-materials/>

Vanstone, E., @AfterschoolForSmartyPants, N., Trisha, Susanna, Roo, B., Too, T., ...

Homeschool. (2020, March 24). Properties of Materials - How waterproof is it? Retrieved from

<https://www.science-sparks.com/how-waterproof-is-it/>

Children

<https://www.youtube.com/watch?v=veUUii1U8-o>

List of Resources Used in the Unit (i)

Materials and supplies

Material/Resources: *What do you need for this lesson? Identify, within a bulleted list, the specific materials and resources that you will use. Describe how these materials and resources add value, depth, and extend students' learning.*

- Wood: wood chips, pencils, sticks, wood floor sample, wooden block
- Plastic: plastic utensils, water bottle, plastic cup, plastic bag, tubberware
- Paper: piece of paper, paper bag, newspaper, books, tissue paper
- Metal: aluminum foil, nuts and bolts, coins, keys, aluminum can
- Cloth: cotton fabric, wool fabric, silk fabric, linen fabric, polyester fabric, patterned fabrics, nylon fabrics, towels
- Glue
- Scissor
- Markers
- Paper
- Tape
- Journals
- Rulers

Print and non-print

- T-Chart on Large Paper
- Assessment Paper
- *Comparing Properties* by Charlotte Guillain
- *What are Materials?* Kay Barnham
- *Where did my clothes come from?* Chris Butterworth

Technology resources

- PowerPoint Assessment
- Video: https://www.youtube.com/watch?v=_oK8CRa2rXY

Reflection, Peer Review (j)

Reflection

I incorporated the feedback of my peers during the completion of my unit plan. The question I had for my peers was, "I will be asking the student to self-evaluate their work. What are some questions I should ask for the self-evaluation portion? Also, do you think I should do this self-evaluation during the presentation or another way?" One suggestion I received from a peer was to conduct a one-on-one self-evaluation with each student. I added this suggestion into the presentation portion of my unit. After presenting their final designs to the class, I will ask students more privately to assess their own development throughout the unit and the clothing project.

I also received self-evaluation question suggestions from my professor, Dr. Lange. The suggestions included, "Do you think you understand more now after completing our clothing Unit than you did before the Unit about the following: what are different materials and what are their properties; what about a material makes it good or not good to be part of a piece of clothing; how to plan and carry out an investigation (science practices). Why or why not?" I also included some of these questions during the self-evaluation after the presentation.

Another piece of feedback that I used to formulate my final unit plan was Dr. Lange's feedback on my web and calendar draft. One thing that helped me the most was, "Do you need to remove some of the activity ideas to make room for more extended learning about a smaller number of concepts (e.g. thinking about clothes idea starting in week)?" This question pushed me to rethink my entire plan to make it more developmentally appropriate. Originally, I would have had to rush through activities to get everything done. Inquiry is more about allowing students to have the time to learn from asking and answering their own questions. I then decided that it would make more sense to cut back on the number of activities and increase the quality of the activities. I took out many of the activities I had included in my first draft. I also began the exploration and discussion of cloth and clothing in the first week. Since the final project is about clothing, I felt that it was important to allow more time for clothing centered activities.

Minute Paper

"I think your unit plan is very engaging and allows students to explore and develop new things. To answer your question, I believe asking the questions throughout the presentation can help you assess the students understanding of the concepts, but I believe having a self-evaluation one on one with students could be very beneficial because it will allow for students to reflect on their work and the thought process. A question you could ask could be, "do you think your design can withstand different weather types" or "how did you know to use this type of fabric, instead of the others?" I think you have a really great unit plan and the creative aspect is there so great job!" -Darian Davis

Other Evidence of Feedback

” But make sure you're not trying to cram too much in. Will students have enough time to make sense of each of the different types of materials during week 1? Maybe they will, but you want to make sure you're clear how, since you want to come up with activities that will be inquiry-rich and some that will stretch over multiple days. Do you need to remove some of the activity ideas to make room for more extended learning about a smaller number of concepts (e.g., thinking about the clothes idea starting in week 1)? You don't have to do this, just something to think about.” -Dr. Lange