

Name: Harry Nowell Onsite OA \_\_\_\_\_

Subject: Science		Grade: 1			Strand: Mechanisms and Structures		
Title of Unit: Structures and Mechanisms							
<b>Identify Desired Results</b>							
Big Idea for Unit: The Materials and Structure of the object determines its purpose & Materials have specific properties.				Fundamental Concept for Unit: An introduction to “Materials and Objects” and how widespread their presence is.			
Overall Expectation: (pg 47) Demonstrate and understanding that objects and structures have observable characteristics and are made from materials with specific properties that determine how they are used... Investigate structures (and materials) that are built for specific purpose to see how their design and materials suit the purpose... Assess the impact on people and the environment of objects and structures and the materials used in them.							
Learning Goal for Unit: For students to become aware of materials, properties and mechanisms of everyday objects. Also to instil a curiosity in all students about everyday objects by investigating materials that will interest all students.							
Key Guiding/Essential/Inquiry Question (s) for Unit: What are the properties of everyday objects? How do they affect us? How do the objects change in their environment?							
<b>Determine Acceptable Evidence</b>							
Mini Culminating Task: [Description] Being grade one, many tasks were used to culminate evidence including verbal, written and observational tasks. One task was given at the end of lesson three – a science journal entry.							
Evaluation Tool for Culminating Task: [Description] Being grade one and using a play-based structure in the class many forms of assessment were used - verbal, written and observational. The culminating task was a journal entry used to describe observations of an all day experiment.							
<b>Planning Learning Experiences and Instruction</b>							
Lesson #	Concise overview/ rationale for the learning activities <sup>1</sup>	Specific Learning Intentions	Specific Expectations	Instructional and learning strategies	Assessment and Evaluation		
					Assessment Purpose <sup>2</sup> & type of/as/for	Assessment Mode & Strategy <sup>3</sup>	Tool <sup>4</sup> if applicable
1 – Three little pigs + building blocks	Reading of “Three Little Pigs” story. Physical intro of different building materials while undertaking an Inquiry Discussion. Follow-up in Science Activity Centre with a building project comparing ‘strength’ of three materials – assessed by blowing fan.	To incite curiosity and exploration of building materials to encourage students to compare and contrast the properties of different	# 3.2 pg 49 – “Describe Structures as supporting frameworks #3.5 Identify the	Using repeated and different exposure to the same materials, students will become engaged at different levels: <b>1.</b> Through a shared reading students are introduced to different materials and their properties. <b>2.</b> Through Inquiry based discussion and physical manipulations students are enticed to explore material.	<b>For:</b> Shared readings allows teacher to investigate student understanding. <b>As:</b> Inquiry Discussion and Building provide students to assess for the purpose of learning. <b>Of:</b> Observation of language and building structures allows teacher to assess understanding.	<b>Shared Reading</b> – allows students to be introduced to material choice and properties. <b>Inquiry Discussion &amp; Physical Exploration:</b> Provides the basis for curiosity and	<ul style="list-style-type: none"> <li>• “Three Little Pigs” story.</li> <li>• Straw (or grasses), sticks, and bricks for manipulation.</li> <li>• Wooden building blocks, cardboard blocks and straws for</li> </ul>

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<p>1 – Three little pigs + building blocks</p>	<p>Reading of "Three Little Pigs" story. Physical intro of different building materials while undertaking an Inquiry Discussion. Follow-up in Science Activity Centre with a building project comparing 'strength' of three materials – assessed by blowing fan.</p>	<p>To incite curiosity and exploration of building materials to encourage students to compare and contrast the properties of different materials.</p>	<p># 3.2 pg 49 – "Describe Structures as supporting frameworks #3.5 Identify the materials that make up objects and structures."</p>	<p>Using repeated and different exposure to the same materials, students will become engaged at different levels:  <b>1.</b> Through a shared reading students are introduced to different materials and their properties.  <b>2.</b> Through Inquiry based discussion and physical manipulations students are enticed to explore material.  <b>3.</b> Through a building activity students experiment with building materials.</p>	<p><b>For:</b> Shared readings allows teacher to investigate student understanding.  <b>As:</b> Inquiry Discussion and Building provide students to assess for the purpose of learning.  <b>Of:</b> Observation of language and building structures allows teacher to assess understanding. Recording of description of results of experiment.</p>	<p><b>Shared Reading</b> – allows students to be introduced to material choice and properties.  <b>Inquiry Discussion &amp; Physical Exploration:</b> Provides the basis for curiosity and cognitive exploration  <b>Building Activity:</b> Allows a kinaesthetic, hands-on teaching opportunity.</p>	<ul style="list-style-type: none"> <li>• "Three Little Pigs" story.</li> <li>• Straw (or grasses), sticks, and bricks for manipulation.</li> <li>• Wooden building blocks, cardboard blocks and straws for building activity.</li> </ul>
<p>2 - Cinderella + clothing</p>	<p>Shared reading of Cinderella + discussion/demonstration of different clothing.</p>	<p>To present that materials matter in many facets of life including fashion and clothing.</p>	<p># 2.3 pg 48 – "Investigate through experimentation, the properties of various materials."</p>	<p>By incorporating a non-traditional science story (Cinderella) as a hook I hope to capture the interest of some girls (and others) who are not necessarily interested in science. Including drama and inquiry discussions also breaks down learning barriers to a traditionally limited interest subject.</p>	<p><b>For:</b> Reading of Cinderella with discussion of material clothing allows teacher to see student awareness.  <b>As:</b> Using drama element students explore the ideas of material properties.  <b>Of:</b> Students provide evidence of learning through verbal answers and participation</p>	<p>Assessment is conducted orally through discussion and participation.</p>	<ul style="list-style-type: none"> <li>• "Cinderella" story</li> <li>• Beach clothing outfit.</li> <li>• Full snowsuit and winter clothing.</li> </ul>
<p>3 - Ice Water Steam</p>	<p>Presentation of water in its three formats – steam, water, ice. Inquiry discussion ensues to</p>	<p>To incite curiosity about everyday</p>	<p># 1.2 pg 49 – "assess objects</p>	<p>Using inquiry based approach and observational experimentation students learn through group and</p>	<p><b>For:</b> Presentation of ice, water, steam – and inquiry allows teacher to assess student</p>	<p><b>Demonstration &amp; Discussion:</b> Provides tactile and shared</p>	<ul style="list-style-type: none"> <li>• Two containers</li> <li>• Water</li> <li>• Ice</li> </ul>

**Mini Science Unit Template**  
**Mini Science Unit Evaluation Rubric**

Criteria	Level 1	Level 2	Level 3	Level 4
<b>Knowledge of Subject Matter</b>	Demonstrates below average knowledge of the subject matter. Learning activities are not appropriate for content being taught.	Demonstrates adequate/average knowledge of the subject matter through the development of a few appropriate learning activities for the content being taught.	Demonstrates above average knowledge of the subject matter through the development of appropriate learning activities for the content being taught.	Demonstrates masterful knowledge of the subject matter through the development of highly effective learning activities for the content being taught.
<b>Scientific inquiry based learning opportunities for students</b>	Few of the lessons provide students with an opportunity to engage in scientific inquiry based learning. There is no clear hands-on component and the learning activities are not inquiry driven.	Some of the lessons provide students with an opportunity to engage in scientific inquiry based learning. There is at least one clear hands-on component.	Some of the lessons provide students with an opportunity to engage in a high level of scientific inquiry based learning. There is at least one clear hands-on component and students are making predictions, observation, and explanations to answer questions.	The lessons provides students with an opportunity to engage in a high level of scientific inquiry based learning. There is a clear hands-on component and students are making predictions, observation, and explanations to answer questions.
<b>Incorporation of 5-E Model of Instruction</b>	Fewer than five of the 5-E components are incorporated and they do not effectively align with the learning goals of the lesson.	Fewer than five of the 5-E components are incorporated and they align with the learning goals of the lesson.	All of the 5-E components are incorporated and align with the learning goals of the lesson.	All of the 5-E components are incorporated in a thoughtful and creative manner that effectively align with the learning goals the lesson.
<b>Assessment</b>	Some of the required elements (2 types of assessment including assessment "of" learning) are included.	All required elements are included but some of the rationales are not clear and/or some elements are not appropriate to curriculum expectations or to the proposed inquiry based learning activities.	All required elements are included. The rationales are clear and demonstrate a good understanding of assessment planning. Most assessments connect with both the learning goals and the proposed inquiry based learning activities.	The proposed assessments are thoughtful and original, are closely linked to the curriculum expectations and the proposed inquiry based learning activities.
<b>Planning learning experiences and instruction</b>	The descriptions are such that the nature of the learning experiences is not clear. There is no clear alignment between ministry expectations, learning goals, success criteria, learning experience, and assessment.	The nature of the learning experiences is clear but some or all of the lessons do not connect with the essential question and/or the proposed assessment tasks. There is some alignment between ministry expectations, learning goals, success criteria, learning experience, and assessment.	The nature of the learning experiences is clear. All lessons connect with the essential question and the proposed assessment tasks. There is clear alignment between ministry expectations, learning goals, success criteria, learning experience, and assessment.	The proposed lessons are thoughtful and original, are closely linked to the curriculum expectations, the essential question and the proposed assessment tasks. There is excellent alignment between ministry expectations, learning goals, success criteria, learning experience, and assessment.
<b>Communication &amp; presentation of ideas in lessons &amp; website</b>	Communication, organization and presentation of ideas are not clear in most sections. Conventions of language use are inconsistent.	Communication, organization and presentation of ideas are adequate in all sections of the assignment. Conventions of language use are mostly consistent.	Communication, organization and presentation of ideas are clear, concise and facilitates comprehension. Conventions of language use are entirely consistent.	Communication and organization of ideas is creative, clear, and concise and facilitates comprehension. Conventions of language use are entirely consistent.