

**CODE/MOE/UOIT Makerspaces Project—Lesson Planning Template**

**School Board: Huron Superior Catholic District School Board**

**Grade(s): 1**

**Subject(s): Science**

|  |  |
| --- | --- |
| **BIG IDEAS:**  **Objects have observable characteristics and are made from materials.**  **Materials have specific properties.**  **An object is held together by its structure. In this lesson, students will create a structure that will demonstrate their understanding of different materials.**  **Curriculum Expectations:**  **OVERALL:**  **2. Developing Investigation and Communication Skills**  **3. Demonstrate an understanding that objects and structures have observable characteristics**  **and are made from materials with specific properties that determine how they are used.**  **SPECIFIC:**  **2.3 investigate, through experimentation, the properties of various materials**  **3.2 describe structures as supporting frameworks**  **3.3 describe materials as the substances from which something is made** | |
| **Learning Goals:**  “We are learning to…”  …cooperate and work in a group.  …demonstrate that some materials are stronger than others. | **Success Criteria:**  “We will be successful when…”  …we build a structure that will withstand wind from the fan. |
| **Lesson Overview:**  **The students will build three different structures with various materials that resemble the houses from the story of The Three Little Pigs.** | |
| **Materials and Technology:**  -book: The Three Little Pigs  -construction paper  -toothpicks  -popsicle sticks  -straw  -legos  -glue  -scissors  -iPad to take anecdotal notes  -and other materials available in makerspace lab or brought in by students | |
| **Student Accommodations/Modifications:**  **Students are seated according to IEP plans.**  **The groups will be chosen according to ability.** | **Lesson will be differentiated by:**   * **Content, specifically: n/a** * **Process, specifically: a teacher will work with one of the groups** * **Product, specifically: n/a** * **Environment, specifically: seat students in proximity to teacher as needed** |
| **MINDS ON: Getting Started** | |
| During this phase, the teacher may:  • activate students’ prior knowledge;  • engage students by posing thought-provoking questions;  • gather diagnostic and/or formative assessment data through observation and questioning;  • discuss and clarify the task(s). | During this phase, students may:  • participate in discussions;  • propose strategies;  • question the teacher and their classmates;  • make connections to and reflect on prior learning. |
| **Describe how you will introduce the learning activity to your students.**  I will hook them by reading them the story of The Three Little Pigs. Then, they will be placed into groups and be tasked with developing three different structures similar to those from the story.  **What key questions will you ask?**  Which of the materials do you think will be the strongest? Why?  **How will you gather diagnostic or formative data about the students’ current levels of understanding?**  Through conversations and observations throughout the process.  I would be able to mark or give a grade to the student's final products.  **How will students be grouped? How will materials be distributed?**  The students will be grouped in groups of 3 according to ability. Each group will be given the same amount of three different types of materials. | |
| **ACTION: Working on it** | |
| During this phase, the teacher may:  • ask probing questions;  • clarify misconceptions, as needed, by redirecting students through questioning;  • answer students’ questions (but avoid providing a solution to the problem);  • observe and assess;  • encourage students to represent their thinking concretely and/or pictorially;  • encourage students to clarify ideas and to pose questions to other students. | During this phase, students may:  • represent their thinking (using numbers, pictures, words, manipulatives, actions, etc.);  • participate actively in whole group, small group, or independent settings;  • explain their thinking to the teacher and their classmates;  • explore and develop strategies and concepts. |
| **Describe the task(s) in which your students will be engaged.**  The students will be engaged in building the structures and experimenting with different materials.  **What misconceptions or difficulties do you think they might experience?**  I think that they will struggle with the designing part of the structure (I think they may struggle to come up with a plan to turn the toothpicks into a “house”). I also anticipate that some may struggle to work cooperatively. They may think that the toothpicks will be the strongest structure.  **How will they demonstrate their understanding of the concept?**  They will demonstrate their understanding when they can explain why the straw house could not withstand the wind whereas the lego house could, when they can articulate the difference between the materials.  **How will you gather your assessment data (e.g., checklist, anecdotal records)?**  I will walk around making anecdotal notes of how students are planning their final product, helping or prompting students who seem to have forgotten missing parts. I will take videos and/or pictures during the task.  **What extension activities will you provide?**  They could document their findings by drawing pictures. They could think of other materials that would be better for next time. | |
| **CONSOLIDATION: Reflecting and Connecting** | |
| During this phase, the teacher may:  • bring students back together to share and analyse strategies;  • encourage students to explain a variety of learning strategies;  • ask students to defend their procedures and justify their answers;  • clarify misunderstandings;  • relate strategies and solutions to similar types of problems in order to help students generalize concepts;  • summarize the discussion and emphasize key points or concepts. | During this phase, students may:  • share their findings;  • use a variety of concrete, pictorial, and numerical representations to demonstrate their understandings;  • justify and explain their thinking;  • reflect on their learning. |
| **How will you select the individual students or groups of students who are to share their work with the class (i.e., to demonstrate a variety of strategies, to show different types of representations, to illustrate a key concept)?**  I would like to put all of their work on a display, in a showcase to demonstrate that we are all makers...this time “house makers.” I will also give several students the opportunity to share their thoughts on how they planned out their structure.  **What key questions will you ask during the debriefing?**  Which structure withstood the wind from the fan the best? Why?  Which structure did not withstand the wind? Why?  What other materials could you bring? | |