

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

**School Board: Grand Erie District School Board**

**Grade(s): Grade 1**

**Subject(s): Science**

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| **BIG IDEAS:**  The materials and structure of an object determine its purpose.  **Curriculum Expectations:**  **OVERALL:**  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:**  3.1 describe objects as things that are made of one or more materials  3.5 identify the materials that make up objects and structures (e.g., wood, plastic, steel, paper, polystyrene foam, cloth)  3.7 describe the properties of materials that enable the objects and structures made from them to perform their intended function | |
| **Learning Goals: We are learning...**  ...why different objects are made differently  ...about purpose and function | **Success Criteria: We will know we are successful when...**  ...we can describe the different materials of different objects  .we can explain why we are using different materials |
| **Lesson Overview: Students will create toboggans and toboggan runs for stuffed animals that are found within the classroom. Students will choose the material best suited for their toboggans and describe why they think that material will work best for the function of going down a toboggan hill.** | |
| **Materials and Technology:**   * A variety of materials- materials that are strongly suggested   + Cardboard   + Sandpaper   + Tin Foil   + Plastic Wrap   + News Paper   + String * Fastening Materials   + Glue   + Make-Do Kits (for cardboard) \*strongly suggested   + String   + Tape * Stuffed Animals * Snow- this is a weather permitting, winter activity * Read Aloud book: The Wild Toboggan Ride- Suzan Reid * Video recording device | |
| **Student Accommodations/Modifications:**  Accommodations will range from:   * Time limit extension for creation of the toboggan * Scribing for material description * Oral output for students instead of writing   Modifications will range from:   * Pre fabricated bases for students * Checklists for materials used and their intended purposes | **Lesson will be differentiated by:**   * **Content, specifically:** students will have different levels of writing expected, oral output is another option * **Process, specifically**: prefabricated bases so students with motor skills needs will have less to build * **Product, specifically:** size of toboggans depends on students * **Environment, specifically:** if need be, outdoor snow is not needed, an indoor track would need to be pre-fabricated for students |
| **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.**  Discussion of winter and favourite activities for winter- hopefully students will discuss tobogganing  -Read Aloud of The Wild Toboggan Ride  **What key questions will you ask?**  What do you think the toboggan was made out of in the story?  What have you seen toboggans made out of?  What materials do you think toboggans should not be made out of? Why?  **How will you gather diagnostic or formative data about the students’ current levels of understanding?**  KWL chart- about materials for toboggans  **How will students be grouped? How will materials be distributed?**  Whole Group discussion  Students will return to their table groups (no more than 6) for materials to be distributed | |
| **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.**  Students will be creating toboggans and creating a write up about their material choices. The idea is that students should be choosing their materials based on how well the material can slide.  **What misconceptions or difficulties do you think they might experience?**  I think students will assume that they want the sleds to be large, instead of heavy so they can move.  That the sleds needs to be slippery on tables, instead of on snow.  The understanding of friction.  **How will they demonstrate their understanding of the concept?**  They will orally or in written form discuss the materials that they are using. They will explain why they think it is the best material. Ideally, students will say why they chose some materials over others.  **How will you gather your assessment data (e.g., checklist, anecdotal records)?**  Look For/ Misconception sheet (checklist)  **What extension activities will you provide?**  Students will explain how their sled would work in the spring, when there is no snow. How can we change a sled into an object that can serve the same purpose in a different environment (grass vs. snow)?  Students can participate in a writing activity where their toboggan is featured in a story. | |
| **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)?**  The students will be filming their runs down the snow hill. They will have the opportunity to show the class their run on the screen (smartboard, projector, interactive screen). Other students may want to just orally explain what they saw in their run down the hill. Some students who do not wish to talk will have a write up of what happened.  **What key questions will you ask during the debriefing?**  What materials do you think worked best for our toboggans?  Which materials would you want to see next time we build? Why?  Did the shape of the toboggan affect the sleds?  Did you need to consider weight when you were building? | |