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

**School Board:**

**Grade(s): 5**

**Subject(s): Mathematics, Visual Arts
Making book bags**

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| **BIG IDEAS:**Create bags with second-hand fabric to hold home reading books.**Curriculum Expectations:****OVERALL:**Solve problems with different units of measure of length and perimeter in simple contexts.Produce various works in two or three dimensions by following the process of artistic creation.**SPECIFIC:** Measure, record and compare the perimeter of various 2D figures.Use the process of artistic creation to create various works of art. |
| **Learning Goals:**“We are learning to…”* use sewing machines
* plan and measure the dimensions of the bag and make adequate cuts for bag assembly.
 | **Success Criteria:** “We will be successful when…”* the bag is functional and can be used to transport our books home
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| **Lesson Overview:**Students will learn how to use the sewing machine while learning about area and perimeter, and to make a backpack to carry books. |
| **Materials and Technology:** * Sewing machine
* Fabric, string, Velcro. Scissors, paper patterns
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| **Student Accommodations/Modifications:**  | **Lesson will be differentiated by:*** **Content, specifically:**Parent volunteers to help students with difficulty
* **Process, specifically:**Parent volunteers to help students with difficulty
* **Product, specifically:**Parent volunteers to help students with difficulty
* **Environment, specifically:** Students can work in the Makerspace
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| **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.** Every two weeks we went to the public library and had to find an easier and more environmental way (other than plastic bags) to carry our books. In doing research together, students proposed to make fabric bags. **What key questions will you ask? How will you gather diagnostic or formative data about the students’ current levels of understanding?**Place them in front of the sewing machine (filming them) and ask them to explain how they think a sewing machine works.Ask to estimate how much fabric or string they will need **How will students be grouped? How will materials be distributed?** Students will work independently. Parent volunteers to help students with material distribution. |
| **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. What misconceptions or difficulties do you think they might experience?** 1 - Cut the pieces of fabric (from a pattern) (**Difficulty**: Dexterity required to cut properly)2 - Sew the pieces together (**Difficulty**: use of the sewing machine, there will be support from the volunteer adult, students proficient in sewing)3 – Sewing strings through holes (**Difficulty**: This technique requires patience; there will be the support of the volunteer adult and a talented student in sewing)**How will they demonstrate their understanding of the concept?**Students will make a video in which they must explain the production steps and how to use the sewing machine. They also had to calculate the area and perimeter of their bag in order to present a tutorial of the manufacture of the backpack.**How will you gather your assessment data (e.g., checklist, anecdotal records)?**The video will be used to assess the steps students took during the creation process. Photos will also be taken throughout.**What extension activities will you provide?** Students will measure the area and perimeter of their bags. It is the hope that some students decide to choose a sewing project for their Genius Hour/20% project to make sewing projects for the school. |
| **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)?** They will wear their bags to the library.**What key questions will you ask during the debriefing?** Now that you can sew, what other projects would you like to make? |