

INSTRUCTIONS FOR USING REMOTE LEARNING PROJECTS

These materials were developed with the intention of easing the transition between in-class and temporary remote learning. Learning experiences are aligned with curricular outcomes and assessment tools have been included with each project.

Note:

1. The teacher either sends a link to the appropriate project or sends the document itself.
2. The teacher ensures that parents/caregivers receive any required school supplies (bin with pencils, markers, paper, etc.).
3. The teacher reassures parents/caregivers that communication will be maintained between home and school.
4. The parents/caregivers may access additional resources at:
 - My Learning at Home (www.edu.gov.mb.ca/k12/mylearning)
 - My Child in School (www.edu.gov.mb.ca/k12/mychild/index.html)

PROJECT OVERVIEW

Grade :	4
Main Subject :	Science
Big Idea :	Sound
Title :	SOUND DESIGN
Cluster :	Sound
Duration :	2 weeks
Materials :	<p>A variety of materials found around the home for making instruments such as cardboard, cans, plastic containers, string, glue, elastic bands, boxes, wax paper, cloth, etc. and tools for crafting such as scissors, glue gun, ruler, pencil (whatever is available)</p> <p>Glasses or glass bottles, water, spoon</p> <p>Paper and pencils, drawing tools such as pencil crayons, crayons, or markers</p> <p>Device for recording audio/pictures (optional)</p>
Short description :	<p>A unit about sound and musical instruments that could be completed asynchronously that would benefit from some synchronous instruction and opportunities to share learning and thinking. Included are two opportunities for scientific inquiry and a design challenge. Cross-curricular connections to symmetry and author's purpose for writing.</p>

LEARNING OUTCOMES

Science: www.edu.gov.mb.ca/k12/cur/science/scicurr.html

4-3-04, 4-3-05, 4-3-06, 4-3-07, 4-0-3c, 4-0-3d, 4-0-3e, 4-0-3f, 4-0-4a, 4-0-4b, 4-0-4c, 4-0-4d, 4-0-7a, 4-0-7b, 4-0-7c

Mathematics: www.edu.gov.mb.ca/k12/cur/essentials/docs/glance_kto9_math.pdf

4.SS.6

ELA: www.edu.gov.mb.ca/k12/cur/ela/index.html

Lenses: Imaginative and Literary; Environmental and Technological

Practices: Language as Exploration and Design

ASSESSMENT

LANGUAGE ARTS					MATHEMATICS			SCIENCE			SOCIAL STUDIES		
COMP. Listening & Viewing	COMP. Reading	COMM. Speaking & Represent.	COMM. Writing	Critical Thinking	Knowledge and Understanding	Mental Math & Estimation	Problem Solving	Knowledge and Understanding	Scientific Inquiry Process	Design Process & Problem Solving	Knowledge and Understanding	Research and Communication	Critical Thinking and Citizenship
			X		X			X	X	X			

Original concept created by: Denise Smith

LEARNING EXPERIENCES AND ASSESSMENT

Questions:

How do scientists and inventors develop ideas and technology?

How do musical instruments create and manipulate sound?

How does symmetry help us understand shapes?

How can factual documentation be used to support the development of stories about historical events?

Teacher's instructions

This learning experience is designed to be completed asynchronously. However, the experience would be enhanced with opportunities for students to share their learning from with various tasks in small or whole group synchronous sessions. This will provide some scaffolding for those who need support and a prompt for others to go deeper when they attempt the task and provide accountability for students. This would also provide an opportunity for students to reflect on their THINK section for the learning experiences.

In addition, you may need to consider some mini-lessons to introduce symmetry, read a-loud some of the inventor stories and identify some 'doing words,' review the steps of scientific inquiry, and discuss common themes in the inventor stories. When introducing symmetry, *Seeing Symmetry* by Loreen Leedy is an excellent resource. https://www.youtube.com/watch?v=GL0Cvu_7pKY

There are 8 learning experiences and a final task in this experience. Two of the learning experiences are experiments (Does size affect sound? and Does shape affect sound?). You may choose to assign half the class to do one and then half the class to do the other and then have students share their findings in pairs.

No templates have been provided for the final learning experience as a variety of methods could be used for documenting these creative processes. Students can use a notebook for document their invention or they may choose to document using technology. The same is true for the stories. Students may want to write a traditional written story, some may choose to draw a picture book, and others may choose to do an oral story. You may want to discuss and check in with students as to how they will do these pieces. Some students may require some scaffolding and you can then provide them with a template that they may be familiar with for those purposes.

Students would be expected to complete all tasks; however, students should not be penalized if they don't complete all of the tasks. Students need to demonstrate their understanding of the concepts and may be able to do this without necessarily completing all tasks. Students could suggest alternate assignments if desired. Work on these activities should allow students to develop their thinking and to move to the second and third column on the assessment rubric. As students apply their learning in the final projects, students further develop their understanding of the concepts and should move to the third or fourth columns on the rubric.

Assessment of student thinking should include products, observations, and conversations as much as possible. Some of this may take place during individual meetings with students. These will encourage students to develop their critical and creative thinking skills and prepare them for the final stage of the unit.

How to Use the Assessment Rubric

1. The rubric is to be used throughout the learning experiences. There is no need for individual criteria or rubrics for each task. Students will use each task to further their understanding of the essential understandings. Students will be demonstrating this through a variety of modalities.
2. As you collect evidence of students' level of understanding, highlight or check off their progress on the rubric. You should notice your students move across the rows as their understanding develops throughout the experiences. Do not average your check marks or highlights. Students obtain their highest level of understanding. It does not matter where they start.

Step-by-step instructions for students:

See Sound Design PowerPoint

APPENDIX (PRINTABLE SUPPORT MATERIALS INCLUDING ASSESSMENT)

Grade 4: Sound Design PowerPoint

Grade 4: Appendix A: Sound Design Rubric

Assessment Rubric

Report Card Category	Big Idea	Limited	Basic	Good	Very Good to Excellent
Science – Knowledge & Understanding	Sound can be produced and their properties can be changed.	Categorizes sound by properties (e.g., loud/safe)	Observes, measures, categories, and demonstrates how sound is produced and its properties can change.	Analyzes how sound is produced both naturally and artificially to create music.	Experiments with sound to change its properties to create music.
Science – Design Process & Problem Solving	Scientific and technological developments result from evaluating information and ideas encountered during investigations and daily life.	Follows a template or instructions to observe design.	Observes and collects data to represent findings from the construction of a design.	Changes or experiments with design to create specific changes based on observations.	Integrates observation and scientific knowledge to design technology to create music.
Science – Scientific Inquiry Process	The scientific inquiry process is a method for finding answers to questions about science and nature.	Follows a template or instructions to conduct an inquiry.	Follows a template or instructions to conduct an inquiry, collect data, and represent findings.	Adapts a template or set of instructions to conduct a new inquiry, collect data, and represent findings.	Designs an inquiry process to answer a question, collect data, and represent findings.
Math – Knowledge & Understanding	Shapes can be classified and analyzed according to the property of symmetry.	Recognizes a line of symmetry.	Compares and sorts polygons according to the property of symmetry.	Designs polygons with various types of symmetry.	Makes connections between polygons and symmetry in various contexts such as design and art.
ELA – Communication: Writing	Factual documentation is used to develop stories about historical events.	Identifies fiction and non-fiction texts.	Describes fiction and non-fiction purposes for creating texts.	Creates texts for a variety of purposes and audiences.	Creates stories that incorporate non-fiction texts in their development.