

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM Unit Plan Template

Unit Title: ADST: Wonder Walk Activities
 Number of Lessons: 8
 Time (in weeks): 4
Name: Melissa Green
 Subject(s): ADST
 Grade(s): Kindergarten

Rationale

This unit is important as it invites students to use different materials to create both independently and in small groups.

Overview:

This unit frequently uses the natural materials that are found in the outdoor education exploration zones and at other times uses materials brought into the zone. Some lessons connect to technology (cameras), some to tools (porcupine wedges), and some to the use of nature (volcanoes, family rock portraits, nature paintbrushes). These lessons may change in order based on the weather and locations. The lessons may also change based on student interests and finding while on Wonder Walks.

CORE COMPETENCIES

Communication	Thinking	Personal & Social
<ul style="list-style-type: none"> • <i>Communicating</i> Students will connect and engage with others through sharing and listening to one another. At times, they may “present” their project with a partner or the class. • <i>Collaborating</i> Students will have the opportunity to work collectively and support the interactions with their group. 	<ul style="list-style-type: none"> • <i>Creative Thinking</i> Frequently students will be given an idea, a task, or supplies and invited to create from those pieces. Their creative and uniqueness they bring will be welcomed and encouraged. • <i>Critical and Reflective Thinking</i> Students will be encouraged to wonder, reflect, and question reflectively throughout the lessons. They will investigate through trial and error as they create in different lessons. 	<ul style="list-style-type: none"> • <i>Personal Awareness and Responsibility</i> Students will be expected to be aware of, and regulate, their behaviour during class discussions and during work periods. As this is Kindergarten, this will continue to be modeled and reviewed through the unit and indeed, through the school year. • <i>Social Awareness and Responsibility</i> Students will consider who else who visit the part will see our creations/art for certain lessons. Students will be modeled about valuing diversity as each classmates creation will probably look different.

BIG IDEAS

(multiple subject areas for integrated unit)

ADST
Designs grow out of natural curiosity. Skills can be developed through play.

LEARNING STANDARDS

Curricular Competencies	Content
Applied Design CC5: Choose tools and materials CC6: Make a product using known procedures or through modelling of others CC9: Demonstrate their product, tell the story of designing and making their product CC12: Use materials and tools in a safe manner in physical environments CC13: Develop their skills and add new ones through play and collaborative work	See notes for each lesson on different curriculum content areas these activities connect to.

Prerequisite Concepts and Skills:

- Students are familiar with outdoor learning and exploration
- Students are familiar with the routine of some students engaging in an activity while others have free play in the exploration zone.

Teacher Preparation Required:

Lesson #	Teacher Preparation Required (See Unit Plan Sample)
Lesson 1	• Rocks, display mats, camera, name rocks, tarp
Lesson 2	• Picture samples, picture of camera showing important buttons, camera
Lesson 3	• Tin trays, some supplemental natural items (orange slices, etc), water
Lesson 4	• Story, sample picture, camera
Lesson 5	• Book
Lesson 6	• Baking soda, liquid dish soap, red food colouring, vinegar, containers, pouring containers, long stirring spoon
Lesson 7	• Hammers, nails, wood wedges, clothes pegs
Lesson 8	• Elastic bands, paint, paper

Cross-Curricular Connections:

N/A

Aboriginal Connections/ First Peoples Principles of Learning:

“Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.” As the pieces of this unit will take place outside we will consider how our learning, creating, and exploring supports our well-being and the well-being of the land and community around us.

Overview of Lessons:

Lesson 1

Name & Time (Minutes Allotted):	Rock Family (February 9, 2021)
Learning Standards: Curricular Competencies	CC6, CC9
Learning Standards: Content	This lesson connects to the family unit being taught in Social Studies.
Instructional Objectives	TSWBAT create a rock family portrait, of their family, choosing from the supplies provided and talk about the created rock family. This lesson allows for the use of different materials for creating art.
Assessment:	Formative <i>for</i> learning What: Rock Family Portrait

	How: Student will share with the teacher about their rock portrait: who is who and what materials they used, the response will be videoed.
Teaching Strategies:	Sample picture, using rocks to create
Materials:	Rocks, display mats, camera, name rocks, tarp
Lesson Activities:	
Introduction/Hook:	Show picture of teacher’s “rock family”
Body:	Have students create their own rock family on a display mat with their name rock in the corner. Take a photo of each students creation and a video of each student sharing about their rock family Have students make these realistically to represent their family. Three to four students to create at a time.
Closure:	Students transition to free play.

Lesson 2

Name &Time (Minutes Allotted):	Photography (February 16, 2021) – Aviation Way Trip
Learning Standards: Curricular Competencies	CC12
Learning Standards: Content	This lesson has expansive content connections based on what students are noticing and taking photos of. This lesson allows of the camera for creating art.
Instructional Objectives	TSWBAT take photos in a safe manner and choose ten photos from the ones they have taken to future sharing.
Assessment:	Formative <i>for</i> learning What: Student engagement with the camera and photos How: Teacher will observe and review photos with students.
Teaching Strategies:	Photos, interactive, camera
Materials:	Picture samples, picture of camera showing important buttons, camera
Lesson Activities:	
Introduction/Hook:	Show pictures that have been taken of one place: zoom out, zoom in, standing, laying down, kneeling, etc. Either show on the smartboard during snack before the field trip or bring printed copies to show.
Body:	Introduce students to the student camera. Share that each student will get a turn over the coming weeks. Point out zoom, brainstorm what positions we could take photos in. Ask who has taken pictures before. Review how to carry the camera to ensure its safety and use the camera.
Closure:	Download student photos and make sure that students have an opportunity to go through them and choose their top 10 photos. Provide an opportunity for students to share their photos with the class either via slideshow or having them printed.

Lesson 3

Name &Time (Minutes Allotted):	Ice Sun Catcher (February 18, 2021) Double Day
Learning Standards: Curricular Competencies	CC5, CC6, CC12, CC13
Learning Standards: Content	This lesson connects to the science unit on winter... what happens when we leave water outside and it’s very cold out?
Instructional Objectives	TSWBAT create an ice sun catcher and reflect on what creatures/animals they think may enjoy the creation as it melts.
Assessment:	Formative <i>for</i> learning What: Ice Sun Catcher and reflection How: Teacher will take photos and videos.

Teaching Strategies:	Story, water transformation, sun catches for our community trees!
Materials:	Tin trays, some supplemental natural items (orange slices, etc), water
Lesson Activities:	
Introduction/Hook:	Read: Snow Birds by Kirsten Hall
Body:	Have students make ice sun catches by putting items they collect in nature into a tin, add a string and add water. These will need to stay in place to freeze (consider making at the school before wonder walk and then the next day transportation to a Wonder Walk location to hang in the trees).
Closure:	Reflect: What creatures do you think might enjoy your ice sun catcher? Why?

Lesson 4

Name &Time (Minutes Allotted):	Heart Creations (February 19, 2021) 100's Day
Learning Standards: Curricular Competencies	CC5, CC6, CC12, CC13
Learning Standards: Content	This lesson connects to math as we are adding to a list of 100 ways to show love and kindness in our community and social studies as we consider the community members who may see our heart creations while they are visiting the park. This lesson allows for the use of different materials for creating art.
Instructional Objectives	TSWBAT create a heart using pieces of nature and reflect on what they used to create the heart and why.
Assessment:	Formative <i>for</i> learning What: Nature heart How: Teacher will take photos and share in conversation with students about the supplies they choose and used.
Teaching Strategies:	Story, outdoor creativity
Materials:	Story, sample picture, camera
Lesson Activities:	
Introduction/Hook:	Read: Love Is, or How to Mend a Heart Can we come up with 100 ways to show love and kindness in our community? Making hearts out of pieces of nature is one way – we need 99 more! Start a list that can be added to throughout the day.
Body:	In pairs (If with both Kindergarten groups, otherwise maybe individually) have students make a heart out of items they find in nature. Show picture of sample. If at an outdoor location where others at the park may see the hearts talk about how seeing these may make others feel. How are we adding kindness to our community? (in which case, consider being strategic about where they are created – maybe along a path.)
Closure:	As students finish go around to take photos and hear from students about their creation. Students then transition to free play after conversation with teacher.

Lesson 5

Name &Time (Minutes Allotted):	Who's Nest? (February 23, 2021)
Learning Standards: Curricular Competencies	CC5, CC6, CC9, CC13
Learning Standards: Content	This lesson connects to science as students learn more about creatures and their nests through the story.
Instructional Objectives	TSWBAT create a nest using supplies from nature and then share who the next is for and what was used to create the nest.
Assessment:	Formative <i>for</i> learning

	What: Created nest and student reflection. How: Teacher will take photos/video of the project and response.
Teaching Strategies:	Book, inquiry and creating, collaboration
Materials:	Book
Lesson Activities:	
Introduction/Hook:	Read: Who's Nest by Victoria Cochrane
Body:	Students create a nest using the items from nature that are around them. Who is your nest for? What did you use to create your nest? Take photos and video student response.
Closure:	Students transition to free play.

Lesson 6

Name & Time (Minutes Allotted):	Snow Volcanoes (Or sand/mud) (February 26, 2021)
Learning Standards: Curricular Competencies	CC6, CC12, CC13
Learning Standards: Content	This lesson connects to science as students see changes in materials as they are mixed together.
Instructional Objectives	TSWBAT Create a snow volcano and share what surprised them about adding the vinegar mixture.
Assessment:	Formative <i>for</i> learning What: Snow volcanoes How: Photos and video of the creation and student reflection on what surprised them.
Teaching Strategies:	Student inquiry and reflecting. Hands on exploration.
Materials:	Baking soda, liquid dish soap, red food colouring, vinegar, containers, pouring containers, long stirring spoon
Lesson Activities:	
Introduction/Hook:	Question: What is a volcano like?
Body:	Add everything to the container except the vinegar. Carefully shape a volcano shape around the container using snow. Add the vinegar and watch! If it doesn't work add a bit more dish soap and vinegar and stir. Why does this happen?? When we mix vinegar and baking soda they react and produce a gas – carbon dioxide. We added soap into the mix so that the gas blows bubbles and creates a lot of foam. <i>Alternative way: Add a few drops of food colouring to the baking soda, add a little bit of water and mix. Place mixture in ice cube tray (or larger tray) and freeze until solid. Put cubes into the cup within the volcano. Add dish soap to vinegar and pour in!</i>
Closure:	What surprised you the most?

Lesson 7

Name & Time (Minutes Allotted):	Porcupine Wedge (March 2, 2021)
Learning Standards: Curricular Competencies	CC6, CC12
Learning Standards: Content	This lesson allows for the use of different materials for creating art.
Instructional Objectives	TSWBAT use the hammer to get nails into the wedge safely.

Assessment:	Formative <i>for</i> learning What: Porcupine Wedge How: Student will show the teacher their completed Porcupine Wedge and describe how it felt to be using the hammer and nails to create the Porcupine Wedge. (Video response)
Teaching Strategies:	Hands on work, story
Materials:	Hammers, nails, wood wedges, clothes pegs
Lesson Activities:	
Introduction/Hook:	Read: Tooling Around by Ellen Jackson
Body:	Introduce students to the hammer and nails. Model how to hammer using the clothes peg to hold the nail. Show students the Porcupine Wedge that they will have an opportunity to make. A few students at a time make their Porcupine Wedge (don't forget to add eyes!!) while the rest of the class enjoys free play in the exploration zone.
Closure:	How did it feel using the hammer and nails to create your Porcupine Wedge?

Lesson 8

Name & Time (Minutes Allotted):	Nature paintbrushes (March 5, 2021)
Learning Standards: Curricular Competencies	CC5, CC6, CC12, CC13
Learning Standards: Content	This lesson allows for the use of different materials for creating art.
Instructional Objectives	TSWBAT create a nature paintbrush and uses it to paint.
Assessment:	Formative <i>for</i> learning What: Student response describing their paintbrush and how it painted. How: Teacher will video student responding.
Teaching Strategies:	Free exploration, hands on work, reflection
Materials:	Elastic bands, paint, paper
Lesson Activities:	
Introduction/Hook:	Invite students to brainstorm about how to use nature for painting.
Body:	Show students a few nature paintbrushes and invite them to create their own to try out and create a painting with. Students find supplies to make their paintbrush and then try it out in the paint to create a painting.
Closure:	Student shares what they made and what the results were with the teacher, the response is videoed.

Resources:

Snow Volcano: <https://www.science-sparks.com/snow-volcano/>

Extensions to Unit:

Frozen Bubbles: if it gets cold enough... -12... <http://www.housingaforest.com/frozen-bubbles/>

Reflections and Revisions

N/A

