



EARTH & THE ENVIRONMENT KINDERGARTEN UNIT

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BIG QUESTION: How does the environment impact living things?

Read Alouds for the Beginning of the Unit

- The Giving Tree by Shel Silverstein
- Come On, Rain by Karen Hess
- A Grand Old Tree by Mary Newell DePalma
- Felix and the Dandelion by Judith Steinbacher and Antonia Nork
- From Seed to Dandelion, by Ellen Weiss
- Dandelion Adventures, by Patricia Kite
- Hair Heads by Jan Cole
- Diary of a Worm by Linda Glaser

Bridging Read Alouds

- The Tree by Dana Lyons

Moving to the focus of:

How do we impact the environment?

Read Alouds

- Miss Fox's Class Goes Green by Eileen Spinelli
- Big Bear Hug by Nicholas Oldland
- 10 Things I Can Do To Help My World by Melanie Walsh
- The Great Paper Caper by Oliver Jeffers
- Winston of Churchill by Jean Davies Okimoto
- Something from Nothing by Phoebe Gilman

Overall Learning Goal

We are learning about how our environment impacts us and how we can also impact our environment.

Curriculum Expectations

Demonstrate an understanding of the natural world and the need to care for and respect the environment.

Demonstrate an awareness of the natural and built environment through hands on investigations, observations, questions, and representations of their findings.

Conduct simple investigations through free exploration, focused exploration, and guided activity, using inquiry skills (questioning, planning, predicting, observing, communicating).

1.2 Demonstrate the ability to take turns in activities and discussions. (social development)

1.3 Express their thoughts (emotional development)

Shared Reading

- Song: I've Been Working on Recycling

<http://www.resourcefulschools.org/activities/songs-and-poems/sing-along-recycling-songs>

- Poem: Calling All Bugs To The Compost Pile, Betsy Franco, The Great Big Book of Thematic Poetry
- Rain, Rain – with additional versus about plants and animals.

Developing Children's Understanding of Big Question Vocabulary

Throughout the unit, there are many opportunities for the key words environment, living things, and impact to be discussed, defined, and revisited. During Read-Alouds and Shared-Readings such as the Morning Message, they can be highlighted as important or key words and discussed within the context of the text. They may further be added to a list of important words or a word wall, imbedded in posted questions or vocabulary signs at centres, or recorded as part of a picture word induction. By modeling the use of words and encouraging their use during interactions throughout the day, these words become integrated into children's vocabulary. Some possible further activities for developing understanding of specific vocabulary follow after centre ideas.

Centres Supporting Our Big Question



Beaver Wonder Centre



Oil Spill Water Table Centre



Plant Inquiry Centres

Wonder/Science Centre

- Block of sawed wood, beaver stump, various living plants, etc.
- Books supporting living things in centre.
- Magnifying glasses
- Journals to record findings & questions
- Pencils & sticky notes

* For more information on the inspiration for this centre see A Place for Wonder, by Georgia Heard and Jennifer McDonough, page 28-33.

- 1.1 Ask questions about and describe some natural occurrences, using their own observations and representations.
- 1.3 Explore patterns in the natural and built environment.
- 2.1 State problems and pose questions before and during investigations.
- 2.2 Make predictions and observations before and during investigations.
- 2.4 Communicate results and findings from individual and group investigations.
- 3.3. Identify ways in which they can care for, and show respect for the environment.
- 1.5 Use language in various contexts to connect new experiences with what they already know.
- 1.6 Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7 Use specialized vocabulary for a variety of purposes.
- 1.8 Ask questions for a variety of purposes and in a variety of contexts.
- 1.9 Describe personal experiences, using vocabulary and details appropriate to the situation.
- 4.1 Demonstrate an interest for writing and choose to write in a variety of contexts.
- 4.3 Write simple messages.
- 4.4 Begin to use classroom resources to support their writing.
- 4.5 Experiment with a variety of simple writing forms for different purposes in a variety of contexts.

Water Table Centre – Oil Spill

- Water and vegetable oil (mix with food colouring) with sea life toys.
- Discuss the concept pollution and how it impacts the living things in the environment.

- 1.1 Ask questions about and describe some natural occurrences, using their own observations and representations.
- 2.1 State problems and pose questions before and during investigations.
- 2.2 Make predictions and observations before and during investigations.
- 2.3 Select and **use** materials to carry out their own explorations.
- 2.4 Communicate results and findings from individual and group investigations.
- 3.2 Describe what would happen if something in the local environment changed.
- 3.3. Identify ways in which they can care for, and show respect for the environment.
- 3.4 Participate in environmentally friendly activities in the classroom and the school yard.
- 1.5 Use language in various contexts to connect new experiences with what they already know.
- 1.6 Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7 Use specialized vocabulary for a variety of purposes.
- 1.8 Ask questions for a variety of purposes and in a variety of contexts.
- 1.9 Describe personal experiences, using vocabulary and details appropriate to the situation.

Imaginative Play Centre – Recycling Plant

- Recycling Plant- with recyclables, bins, rubber gloves, safety goggles and trash.
 - Text Form Focus: Making lists. Model for students how to list what recyclables go in each bin to assist in sorting materials and to differentiate between recyclables and trash.
- 2.3** Select and use materials to carry out their own explorations.
- 3.3.** Identify ways in which they can care for, and show respect for the environment.
- 3.4** Participate in environmentally friendly activities in the classroom and the school yard.
- 1.5** Use language in various contexts to connect new experiences with what they already know.
- 1.6** Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7** Use specialized vocabulary for a variety of purposes.
- 1.8** Ask questions for a variety of purposes and in a variety of contexts.
- 1.9** Describe personal experiences, using vocabulary and details appropriate to the situation.
- 4.1** Demonstrate an interest for writing and choose to write in a variety of contexts.
- 4.3** Write simple messages.
- 4.4** Begin to use classroom resources to support their writing.
- 4.5** Experiment with a variety of simple writing forms for different purposes in a variety of contexts.

Math Centre – Sorting Recyclables

- Numerous bins to sort recyclables based on criteria the students develop.
 - Have students investigate how items have been sorted based on the criteria used, using rich math vocabulary modelled for them.
- 2.1** State problems and pose questions before and during investigations.
- 3.3.** Identify ways in which they can care for, and show respect for the environment.
- 3.4** Participate in environmentally friendly activities in the classroom and the school yard.
- G3.1** Explore, sort and compare traditional and non-traditional two-dimensional shapes and three-dimensional figures.
- 1.5** Use language in various contexts to connect new experiences with what they already know.
- 1.6** Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7** Use specialized vocabulary for a variety of purposes.
- 1.8** Ask questions for a variety of purposes and in a variety of contexts.
- 1.9** Describe personal experiences, using vocabulary and details appropriate to the situation.
- 4.1** Demonstrate an interest for writing and choose to write in a variety of contexts.
- 4.3** Write simple messages.
- 4.4** Begin to use classroom resources to support their writing.
- 4.5** Experiment with a variety of simple writing forms for different purposes in a variety of contexts.

Writing Centre

- Create posters or write a letter to others making them aware of why recycling is important or how they can positively impact the environment.

- 3.3.** Identify ways in which they can care for, and show respect for the environment.
- 3.4** Participate in environmentally friendly activities in the classroom and the school yard.
- 1.5** Use language in various contexts to connect new experiences with what they already know.
- 1.6** Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7** Use specialized vocabulary for a variety of purposes.
- 1.8** Ask questions for a variety of purposes and in a variety of contexts.
- 1.9** Describe personal experiences, using vocabulary and details appropriate to the situation.
- 4.1** Demonstrate an interest for writing and choose to write in a variety of contexts.
- 4.3** Write simple messages.
- 4.4** Begin to use classroom resources to support their writing.
- 4.5** Experiment with a variety of simple writing forms for different purposes in a variety of contexts.

Art Centre - Making Paper

- Make paper with recycled paper pulp on screens.
http://www.ecokids.ca/pub/fun_n_games/printable_s/activities/assets/science_nature/paper_making.pdf

- 2.3** Select and use materials to carry out their own explorations.
- 3.3.** Identify ways in which they can care for, and show respect for the environment.
- 3.4** Participate in environmentally friendly activities in the classroom and the school yard.
- V2.1** Explore a variety of tools, materials and processes of their own choice to create visual art forms in familiar and new ways.
- V3.1** Use problem-solving skills and their imagination to create visual art forms.
- 1.5** Use language in various contexts to connect new experiences with what they already know.
- 1.6** Use language to talk about their thinking, to reflect, and to solve problems.
- 1.7** Use specialized vocabulary for a variety of purposes.
- 1.8** Ask questions for a variety of purposes and in a variety of contexts.
- 1.9** Describe personal experiences, using vocabulary and details appropriate to the situation.
- 4.1** Demonstrate an interest for writing and choose to write in a variety of contexts.
- 4.3** Write simple messages.
- 4.4** Begin to use classroom resources to support their writing.
- 4.5** Experiment with a variety of simple writing forms for different purposes in a variety of contexts.

Something from “Nothing”

Form(s) of Play: Constructive play

Themes / Connections: Re-using materials

Read-Alouds – Something from Nothing

Learning Goal(s):

- ☺ Students will begin to understand that items can have alternate purposes, we are not a ‘throw-away’ society
- ☺ Students will be able to use creative thinking to make artworks or items with an alternative function

Curriculum Expectations:

Visual Arts – V2.1 explore a variety of tools, materials, and processes of their own choice to create visual art forms in familiar and new way

3.1 use problem-solving skills and their imagination to create visual art forms

Science and Tech: 3.3 identify ways in which they can care for and show respect for the environment

Possible Vocabulary:

- Reuse
- Recycle
- Creation
- Function/purpose
- Environment

Possible Questions:

1. How are you going to use your creation?
2. How did reusing these materials help our environment?

Materials and Layout:

- ★ Photographs of repurposed materials
- ★ Large selection of “junk”
- ★ Glue, tape, stapler, string, elastics, paints, colouring materials

Assessment Strategies and Considerations:

- Questioning
- Observations (note their questions, explorations, and explanations of their creations)

Day 1: Read aloud Something From Nothing. Show examples of art works or creations with alternative uses. The materials will be spread out at a table for students to use to make either an artwork or a new item with an alternative function (e.g. decorate a can as a pencil holder)

Subsequent days: Students are free to visit the centre during centre times to create. Educator will talk to and observe students at the centre.

Plant Inquiry Centre(s)

Form(s) of Play / Learning: Inquiry

Themes / Connections: Respect & Care for the Environment

Read-Alouds – Felix and the Dandelion, From Seed to Dandelion, Dandelion Adventures, Dandelions Stars in the Grass, Hair Heads, From Seed to Sunflower.

Books for the Classroom- Pebble Books Gardening Pack – Tools for the Garden, Growing a Garden, All Kinds of Gardens, Animals in the Garden, Pebble Books How Fruits and Vegetables Grow Pack – Carrots Grow Underground, Lettuce Grows on the Ground, Tomatoes Grow on a Vine

Plant Printable Resources:

<http://www.sparklebox.co.uk/topic/living/plants/>

Learning Goal(s):

- ☺ Describe how water, air, and sunlight impact the growth of plants
- ☺ Describe how plants in our environment can impact us as living things (trees give us shade, gardens give us food)

Possible Vocabulary: seed, root, seed leaf, seed coat, stem, leaf, soil, water, height, growth, compare, sunlight, air, water, nutrients, weight / mass

Possible Questions/Conversations:

What do you notice / observe / see?

What do you think ...?

Tell me about what you are doing?

What are you wondering about ...?

- assess questions and responses for depth of vocabulary and understanding
- assess plant observations and journal entries for details in pictures that depict close observation of plants

What do you already know about plants and how they grow?

What do plants need to grow and be healthy?

What do you think might happen if ...? (various conditions, local and global extensions)

What do you think might happen if our plant had no sunlight, air, water etc.

*Carry out experiments in the classroom and observe / record.

What do you think might happen if... all the water in the school yard dried up?

Materials:

- bags to attach to the window or a Window Greenhouse.
- Specific seeds for growing (bean, cat grass, sunflower, dandelion, tomatoe)
- seeds of various types (lima beans, kidney beans, peas, corn, sunflower, black eyed peas, seeds found outside from trees, flowers etc. for sorting)
- balance, paper bags, trays
- cups /clear containers
- soil for growing, rocks, sand etc.
- measuring cups / can to water plants with
- gardening tools, spoons etc.
- garden soil with plant parts, pulled up grass, flowers, dandelions, worms etc.
- Magnifying glass, gardening / rubber gloves
- Non-fiction texts, including posters, about plants, seeds, etc.
- Pens, pencils, observation sheets, drawing materials
- natural materials gathered from outside

Assessment Strategies and Considerations

- listen to children's observations / record observations in a plant wonder book

Personal and Social Development

Overall Expectation 1: identify and use social skills in play and other contexts

<p>Curriculum Expectations:</p> <p>Science & Technology Overall Expectation 3: demonstrate an understanding of the natural world and the need to care for and respect the environment</p> <p>3.2 describe what would happen if something in the local environment changed</p> <p>3.3 identify ways in which they can care for and show respect for the environment</p> <p>3.4 participate in environmentally friendly activities in the classroom and the schoolyard</p> <p>Language / Communication:</p> <p>1.6 – use language to talk about their thinking, to reflect, and to solve problems.</p> <p>1.7 – use specialized vocabulary for a variety of purposes</p> <p>Overall Expectation 4: communicate in writing, using a variety of strategies that are appropriate for beginners</p> <p>4.3 – write simple messages</p> <p>4.4 – begin to use classroom resources to support their writing</p> <p><u>Verma Culture Composting Centre</u></p> <p>Form(s) of Play / Learning: Inquiry</p> <p>Themes / Connections: Reducing / composting</p> <p>Read-Alouds – Diary of a Worm, Why Should I Recycle?</p>	<p>Overall Expectation 2: demonstrate an ability to use problem-solving skills in a variety of social contexts</p> <p>Mathematics</p> <p>Overall Expectation M2: measure and compare length, mass, capacity, area, and temperature of objects /materials, and the passage of time, using non-standard and standard units, through free exploration, focused exploration, and guided activity</p> <p>Overall Expectation DM5: sort, classify, and display a variety of concrete objects, collect data, begin to read and describe displays of data, and begin to explore the concept of probability in everyday contexts</p>
<p>Learning Goal(s):</p> <ul style="list-style-type: none"> ☺ Students demonstrate an understanding of the benefits of composting ☺ Realize the impact of all living creatures in the interconnected environment 	<p>Curriculum Expectations:</p> <p><u>Science and Tech:</u> 2.2 make predictions and observations before and during investigations</p> <p><u>Language:</u> 1.6 use language to talk about their thinking, to reflect, and to solve problems</p> <p>1.7 use specialized vocabulary for a variety of purposes</p> <p>1.8 ask questions for a variety of purposes and in different contexts</p>

<p>Possible Vocabulary:</p> <ul style="list-style-type: none"> • Compost • Verma culture • Decomposer <p>Possible Questions:</p> <ol style="list-style-type: none"> 1. What do you predict will happen? 2. What do you see? 3. What is happening? <p>Materials and Layout:</p> <ul style="list-style-type: none"> ★ Verma compost box ★ Magnifying glass 	
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Developing Understanding of Specific Vocabulary

Environment

- Take children for a walk outside and asked to name all of the things they see around them.
- Take pictures of all natural and man-made parts of the environment including the sky, soil, trees, birds, rocks, climbers, pavement etc.
- Print pictures and encourage children to sort them into natural and man-made.
- Together, a definition of environment is created as the things that are all around us, both natural and made by humans.

Living Thing

- Brainstorm a list of things that they need to live (water, air, food), how they have changed of time (grown) and what they are able to do (move).
- Record these ideas on a chart or smart board and sorted into needs, growth, and movement.
- Encourage children to use their ideas to consider if various plants, animals, and objects (including class pets, pets at home, plants in the school yard, and objects in the school yard) are living like they are.
- Chart the needs and behaviours of living and non-living things giving a checkmark or X depending on if the “thing” fits each criterion. If unsure, a question mark is placed for further examination.
- Provide multiple opportunities to sort living and non-living things using the criterion on the chart as an anchor. Encourage children to justify their ideas based on the co created charts. For example, they may sort pictures of plants, animals, and objects using a pocket chart or sort objects such as plants and rocks at the Plant Inquiry Centre.

Impact

Children learn through personal experiences and observations that impact means to have an effect on something.

How our environment impacts living things:

- Walking outside on a cold or rainy day and asking “how does the air / rain impact how you feel?”
- Examining the water of a class pet such as a fish or frog and asking questions such as “how might dirty water impact our fish/frog? What might happen to our fish/frog if we did not clean its tank? What would happen if there was no water because it all dried up? ”
- Walking outside and asking “How would having no trees in the school yard impact us? How might we feel or what might happen to us?”
- Discussing / recording why plants, animals, and humans need rain and the impact that not having rain (or clean rain) would have on plants, animals, and humans.
- Engaging in experiments with plants at the plant centre where plants are not given something they need e.g. water, light, air and observing the impact on each plant.

How we can have an impact on our environment:

- Participating in cleaning up litter from a school yard.
- Sorting materials at a recycling dramatic play centre.
- Watering plants at the plant wonder centre.
- Discovering how oil spilled by humans can impact animals at the Water Table Oil Spill Centre, and learning through experience how difficult it is to clean that oil.

Rain, Rain

Additional Versus By: Crystal Inwood

Rain, rain, go away,
come again another day!
Little Johnny wants to play!

Rain, rain, come and stay,
plants are growing every day!
Roots, stems, leaves, and flowers hurray!

Rain, rain, come and stay,
here in puddles every day!
Animals can drink you that way!