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# **The Robert Bateman Centre**

## **Environmental Education Guidebook**

### **Tsaritsyno Edition**



*I think it is up to this generation, more than any generation that has ever existed, to support our grandchildren: To be the rock in the foundation that our grandchildren can depend on.*

Robert Bateman. 2007



# Programming Goal



*To profile the Robert Bateman Centre Environmental Education Programming in association with the Robert Bateman Exhibition in Moscow May 2010 by helping young people and their families develop a sense of wonder, curiosity, appreciation, and respect for the environment using arts-based environmental education.*





# Overview

## Education through Experience

Experiential education is said to be essential in developing a deep understanding of the environment. Opportunities to explore, draw, build, connect, transect, scrutinize, reflect, and play outside are intrinsic to the Robert Bateman Centre youth and family environmental education programming.

Curricula and activities that engage people in the environment help foster their sense of place, awe, creativity, and inspiration and therefore allow them to develop a heightened awareness and ethic towards the environment. A critical entry point to these experiences can come through arts-based approaches to environmental education. This can include scientific inquiry, such as species identification or nature observation and can support people's sensory and emotional connection with nature through experiential techniques and methods.

Experiential Education requires getting your hands dirty! So don't be shy - make a mud pie!  
*Nick Stanger*

## Youth and Family programming

The role of play for all ages is increasingly being recognized as a significant contributor to the health and wellbeing of people. Outdoor play also fosters environmental understanding and care, which often leads to a sense of environmental responsibility.

This programming uses narrative and creativity to connect youth and families with Robert Bateman as an artist and environmental philosopher. A highly interactive experience, the combination of Robert Bateman's paintings and established environmental education techniques encourage a fun learning environment through outdoor play including nature games, visual and sculptural art, reflection exercises like journaling, and games that encourage creativity.

This programming celebrates families as learners and encourages intergenerational creativity, which can foster family bonding.



# Overview Continued...



## Place-based Learning

Place-based learning embeds students within the context of the local ecological and cultural communities. It promotes the exploration and discovery of one's own "place" or schoolyard, neighborhood, town or community. The Tsaritsyno site is ideal for a rich environmental education experience with its diversity of streams, woods, and local species. The natural and human heritage of the site also lends itself to the collaboration between Robert Bateman's paintings and meaningful environmental education by allowing for activities that recognize humans as part of a larger system.

## Ecological Literacy

Ecological Literacy is "how people and societies relate to each other and to natural systems, and how they might do so sustainably" (David Orr (1992) - Ecological Literacy). Further to this, an ecologically literate person understands ecological systems, and how people and communities impact the systems in which they live.

*If you talk to the animals they will talk with you and you will know each other. If you do not talk to them you will not know them, and what you do not know you will fear. What one fears one destroys.*

Chief Dan George

## Learner Outcomes

- To help youth and families develop a sense of wonder and curiosity about local ecosystems;
- To develop a deeper understanding about Robert Bateman's art and philosophy in an applied setting;
- To explore creativity as a form of expression about the environment of Tsaritsyno; and
- To build an understanding of how to apply creativity to learning in a family group.



# Environmental Education Basics



## **Prepare**

Make sure you are comfortable with the activities that you have planned, and that you have found appropriate sites for the activities.

Talk to your group about what they should expect: they will be outside most of the time and could get muddy, cold, wet, sunburned or thirsty. Encourage your participants to bring appropriate clothes that are

warm enough, and wind and water proof, as well as sturdy shoes, sunglasses, sunscreen, and water.

## **Respect**

Encourage a respectful approach to the environment in your activities. This includes non-destructive behaviour like not picking flowers or leaves, replacing rocks from where they were found (if you remove them), and walking gently through natural areas.

It is also good to prepare your group for taking a "leap of faith" with themselves and the activities. There are no tests or examiners. Everyone will gain

something different out of the activities that you have planned for them. Be positive with your feedback and support your group's experience.

## **Weather**

If the weather is inclement, ensure you have a back-up plan for adapting your activities. Many of the activities can be conducted inside (as indicated for each of those activities). Environmental Learning can happen anywhere!



# How to Navigate this Book

This guide is designed to help guides and interpreters present environmental education activities to youth and families that visit the Robert Bateman Art Show. This guidebook is split into four themes that are each represented by a different Robert Bateman Painting: Play, Senses, Creativity, and Interconnectedness. (See page 8: A Sense of Wonder: Four Themes of Environmental Education) Each theme has a number of activities that help illustrate its significance.

## Section Structure:

Each section includes:

1. Underlying Principles for each of the four themes (Play, Senses, Creativity, and Interconnectedness)
2. The connection of these themes to the Robert Bateman paintings
3. Activities presented for each theme.

## Activity Structure:

The right side of the page is designed to be a quick guide to the activity and contains the following information:

<b>Learning Objectives</b>	The intended purposes of the activity.
<b>Time Required</b>	Overall time required to complete the activity.
<b>Materials</b>	A list of materials needed to do the activity.
<b>Setting</b>	Suggestions of where you could conduct the activity.
<b>Audience</b>	Intended age range for participants in each activity. The ages suggesting more than 100 years-old are wheelchair accessible.
<b>Before you Start</b>	Quick tips, preparations, suggestions, and hints on how to conduct this activity effectively.

The left side of the page gives the background, process, diagrams, and extensions for the activity:

<b>Process</b>	An explanation of the background resources or information, procedure, and debriefing questions.
<b>Diagrams</b>	Some activities require diagrams to explain the process.
<b>Extensions</b>	A way to enhance the activity through questions or actions.



# Sense of Wonder

## Four Themes of Environmental Education



**Play**  
Sea Otters



**Senses**  
*Castor Canadensis*



**Creativity**  
*Wildlife Images*



**Interconnectedness**  
*Vancouver Island Elegy*



# Play - Sea Otters



## Benefits of Outdoor - Unstructured Play

- ✓ Reduces stress and anxiety
- ✓ Promotes discovery and inquisitiveness
- ✓ Supports physical healthiness
- ✓ Helps with social and spatial intelligence development
- ✓ Contributes to ecological literacy

Play is integral to learning. Play allows people to try activities that they might not otherwise because it allows us to relax and have fun. The most important type of play for learning is unstructured play, which happens when imagination takes over and rules, timing, and traditional roles are ignored. Many play researchers associate unstructured play with risk taking, which supports cognitive and physical development. Essentially, it is in play that we develop our creative capacities.

let go of formal, didactic teaching methods and support his/her group in exploring their own imaginations.

To be a great guide of play, you will need to enter into the play as well. Have fun!!!

This section explores play through three activities that require the guide to

Play is  
the only way the highest  
intelligence of humankind can  
unfold.

Joseph Chilton  
Pierce

# Link to Robert Bateman's Art

## How Sea Otters Represent **Play**

- Sea otters are known to play extensively - both in social settings and alone:
- They often rest in groups called "rafts". Rafting sea otters sometimes hold paws to stay together.
- Many humans consider otters' play to be a sign of social intelligence.
- Sea otters are one of few tool-using mammals, using rocks to break open their food, indicating that they also have high creative intelligence.

## Did You Know...

- Many populations of sea otters are endangered from habitat loss and over-hunting that occurred during the fur trade era.
- The Russian population of sea otters, occurring mostly along the Kamchatka peninsula, Kuril, and Commander Islands, is considered to be one of the largest sea otter populations in the world.
- The skin of sea otters never gets wet!
- Sea otters are considered to be a keystone species - a species that plays a major role in the ecological integrity of an ecosystem.

## Play Activities

1. **Unstructured Play** (20 mins) - an activity that helps adults find their inner child, allows young people to teach their parents, and encourages bonding through exploration.
2. **Triangulation** (10 mins) - an activity that encourages the sense of connection with a large group.
3. **Human-Species Sculptures** (10 mins) - a humorous activity that involves humans creating animal shapes.
4. **Design a Tiny Park** (30 mins) - your family gets to design a miniature park using found objects.



*Sea Otters, 24" x 48", acrylic on board, 2009*

## Robert Bateman talks about his art

Alaska was sold by Russia to America in 1867 for 7.2 million dollars \$US (2¢ an acre). The major reason for a Russian presence in the North American continent was the fur trade. By far the most precious of the fur-bearing animals was the sea otter. Their underfur has 150,000 hairs per square centimeter. Over 1 million of these animals were killed for their fur beginning in the 18th century.

They were also quite easy to catch since they are gregarious and float around in "rafts" of up to several hundred. By the mid 19th century their numbers were dwindling and the market for furs had changed. Alaska, being a great distance from the centre of power of Russia in the far west, became a lower priority to its rulers.

The sea otters were close to extinction for most of the 20th century but a number of colonies were introduced along the Pacific coast of America and now they are spreading across their former range.

On a recent fishing trip to south-east Alaska we saw many "rafts" of these creatures. Their blond, furry heads and inquisitive expressions give them an endearing and appealing quality.



# Unstructured Play

## Process

1. Discuss the role of play with the group.
  - a. Ask both the adults and the kids what play looks like for them
  - b. Ask families to talk about play - "how is it different from when they were growing up?"
2. Introduce the idea of unstructured play (page 6). Ask the group to go play outside for 20 minutes. Encourage the adults to become their seven-year-old selves if they seem reluctant.
  - a. Give general guidelines to the group (i.e. stay within a certain boundary - not beyond the stream, not inside, etc.)
  - b. Ask your group to leave any digital devices in your safe keeping (iPods, cell phones etc.)
  - c. Encourage imagination and discovery using challenges such as finding interestingly shaped leaves or doing activities that they have never done - like climbing a tree!)
3. Call your group back for a debrief. Ask your group to discuss what they did over the 20 minutes
  - a. Did the adults play differently from the kids?
  - b. Did people find interesting objects or see things that they might not have otherwise seen?
  - c. Did people's moods change over the 20 minutes?
  - d. Are there insights or discoveries that they would like to share?

## Extension

A great extension to this activity is to compare and contrast structured and unstructured play. To do this you need to have a ball or another object for sport.

1. Play an organized sport (like soccer) with all that are willing (5 minutes). Ask for voluntary participation - likely you will only get a few people. Have a very short debrief about how it felt for everyone (including those that didn't get to play). Write the words that people use to describe their experience on a piece of paper.
2. Have 20 minutes of unstructured play and do the same debriefing exercise with everyone. Now share the differences between the structured and unstructured play.

## Learning Objectives

- To highlight the benefits and role of unstructured play on observation, risk-taking, and learning
- To develop a sense of unstructured play as opposed to structured play (sports, games, etc.)
- To have fun!

## Time Required

20 to 30 minutes

## Materials

- Basket or bag to hold peoples' digital devices
- Watch to time the play
- Paper to do the extension
- Pens, pencils

## Setting

This should be done outside in a large area with diverse habitats (open grassy, streams, trees etc.)

## Audience

0 year-olds to 109 year-olds!

## Before you Start

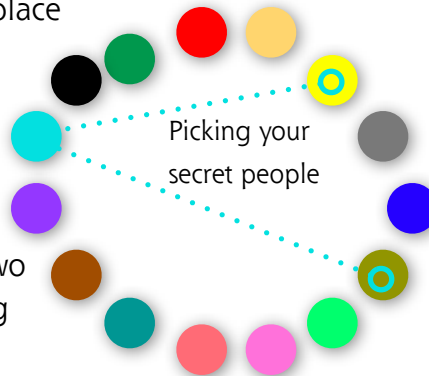
Do a survey of the area you are considering for your unstructured play and look for hazards that you would need to point out to your group (open water, trees that might lose a limb, animals, etc.)

Consider your group's age differences and suggest quiet areas for physically-limited people.

# Triangulation

## Process

1. Ask everyone in your group to make a large circle by standing shoulder to shoulder.
  - a. Talk to people about the importance of play outdoors and how play can help us see patterns in nature.
  - b. Talk to the group about how the game you are about to play helps illustrate how ecological systems connecting with each other, and how a change in one place causes change in the others.
2. Ask everyone in the group to look at their toes.
  - a. When they look up they should *silently* and *secretly* have picked two different people who are standing in the circle.
  - b. Ask your group to put both hands on their heads when they have finished picking their two secret people, so you know when everyone is ready to proceed.
  - c. Tell people who you have picked and show them the point of the game: to be equal distance from both of these people. Demonstrate by positioning yourself at equal distances from your two people so that the group can see how the game is played.
  - d. Now explain that this game will force the group to constantly move. Ask your group to move so that they are equal distances from their secret people and to keep moving until you decide to stop the game.
3. Debrief the game with the group
  - a. What did people notice about being in the group?
  - b. Did the group reach equilibrium or stasis? Is this what happens in nature?



## Learning Objectives

- To play outside in a large group
- To illustrate interconnectedness
- To use play as a way to learn
- To have fun!

## Time Required

10 minutes

## Materials

Nothing!

## Setting

This should be done outside in a large, open area. It can be conducted inside if necessary.

## Audience

8 year-olds to 94 year-olds!

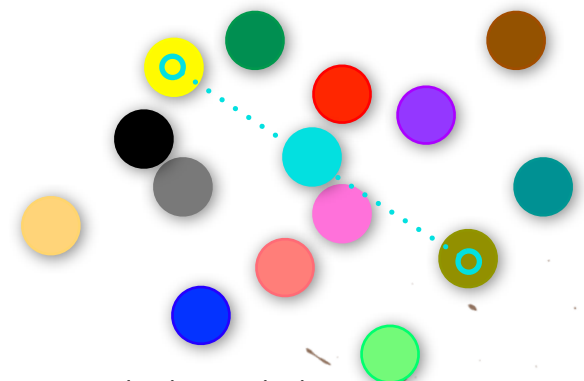
## Before you Start

Find an appropriate area that allows you to have many people being active!

## Extension

Introduce random acts of nature into the game such as the following:

1. Freeze everyone and have them pick two different people
2. Freeze everyone and have them add one more person
3. Take a few members out of the game. See what happens.



A game that has reached equilibrium - this is rare, and not entirely representative of nature, which is always changing. Note: individuals do not remain in a circle.



# Human-Species Sculptures

## Process

1. Talk to your group about the importance of biodiversity within an ecosystem. Diversity of species in ecosystems ensures that the integrity of that system is supported when it is threatened by disease or natural disasters.
2. Ask your group to call out their favourite animals
  - a. If it takes a while to start - help by saying your favourite animal.
  - b. Write down all the animals you hear on your own piece of paper.
3. Describe the game and its intention.
  - a. To play the game you will call out a random number and one of the animals on the paper (e.g. "four, monkey").
  - b. In this example, the group has to quickly arrange themselves into groups of four and then create a monkey by moving their bodies into a monkey shape.
  - c. Repeat this with different numbers and animals and give approximately 30 seconds for each turn, making the game feel busy. Each time you call out a new number and a new animal. At the end of each 30 seconds turn, yell, "freeze" or ring your noise-maker.
  - d. Walk around the sculptures after each is complete and give praise to their sculptures - asking if they have a noise that goes with it.
4. After 10-15 sculptures, finish the game and ask your group to collect around you. Debrief the activity by asking people if they had fun.

## Extensions

1. Suggest that the initial list is only local species (bears, deer, birds, etc.)
2. Have each group interpret their own sculpture. Encourage them to make up "facts" about their creature.

## Learning Objectives

- To celebrate species biodiversity by creating human-sculptures
- To energize a group
- To have fun!

## Time Required

15 minutes

## Materials

- A piece of paper and pen for recording favourite animals
- A noise maker (bell, kazoo, etc.)

## Audience

5 year-olds to 80 year-olds

## Setting

This should be done in a flat, open area outside. It can also be conducted inside if necessary.

## Biodiversity

- Biodiversity is the diversity and number of genes, species, and ecosystems within a region.
- 2010 is the International Year of Biodiversity!

# Design a Tiny Park

## Process

1. Talk to the group about the role of parks and what they are for:
  - a. Protecting plants and animals - biodiversity
  - b. Protecting ecosystems and ecological processes
  - c. Protecting special features
2. Ask your group to split into smaller groups of two or three. Tell the group that they will be creating a park that will be visited by people the size of their finger.
  - a. Each pair of groups receives a piece of string, which will act as their park boundary.
  - b. Ask each group to find twigs that they can put in the ground, which will act as "interpretive signs" for special places in their park. Groups should be prepared to describe why they chose particular areas to protect.
  - c. Once the groups have completed their park, they can show another group through it, pointing out the highlights and reasons for protecting certain areas. Then the groups can reverse roles.
3. Debrief your activity - have students write a short descriptive paragraph about their park in the style of a travel brochure, commenting on the wonders and special features. Remember to dismantle all the "parks" when you leave!



## Extension

Ask your groups to draw the park they have created in a travel brochure. They can illustrate areas of interest using coloured pens and pencils.

## Learning Objectives

- To learn about the role of parks in our environment
- To explore micro-ecosystems
- To foster intergenerational play

## Time Required

30 minutes

## Materials

- A large ball of string
- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Coloured pens
- Coloured pencils
- Crayons
- Glue-stick

## Audience

6 year-olds to 94 year-olds

## Before you Start

Talk to your group about finding a site for their tiny park that does not disturb the local environment (see page 27).

## Setting

This should be done outside in a large open area. It can be conducted inside if necessary.

*This activity originally appeared in WildBC's Get Outdoors Guidebook in 2010.*



# Senses - Castor Canadensis



We access information around us through five (or more) senses. Information is transmitted through our nervous system to our brain, where it is then compared to previous experiences (ouch, that really is hot!).

Humans are notorious for focusing on two of our modalities the most, the eyes (television) and ears (iPods). We often forget that we have our

other senses, and that they must also be nurtured and developed.

There are also theories that our five senses are just part of a much larger array of senses, making our information gathering system very complex and intricate.

Environmental education plays a vital role in supporting humans in developing all of their senses, and recognizing new patterns, changes, and environmental events happening around them.

## Theory of 17 (or more) senses

New discoveries about biochemical, synaptic, and chemo-electrical receptors within our bodies suggest that we have more than the traditional five senses. A generally accepted form of this occurs with pheromones - where we "smell emotions". Other research has looked into human perception and the sense of gravity, the sense of electromagnetic frequencies, and the sense of time (light and darkness). One of the most significant theories for environmental education is the sense of non-verbal communications. Essentially, this is the ability to communicate with non-verbal organisms, including animals.



# Link to Robert Bateman's Art

## How Beavers Represent Senses

- Beavers are known to have a very poor sense of sight, but great senses of smell, touch, and hearing.
- Some beavers stray onto roads, because the roads go through their backyards, and they have a hard time seeing, such as the one in Robert Bateman's *Castor Canadensis*.
- Beavers live most of their lives in the water, building dams and houses using trees that they cut down with their own teeth!
- When beavers sense danger they use their large, paddle-shaped tails to slap the water, which warns other beavers that there is danger in the area.



*Castor Canadensis*, 36" x 36", acrylic on canvas, 2002

## Robert Bateman talks about his art

Beavers are a good symbol for Canada as they have good family values and are industrious, talented engineers.

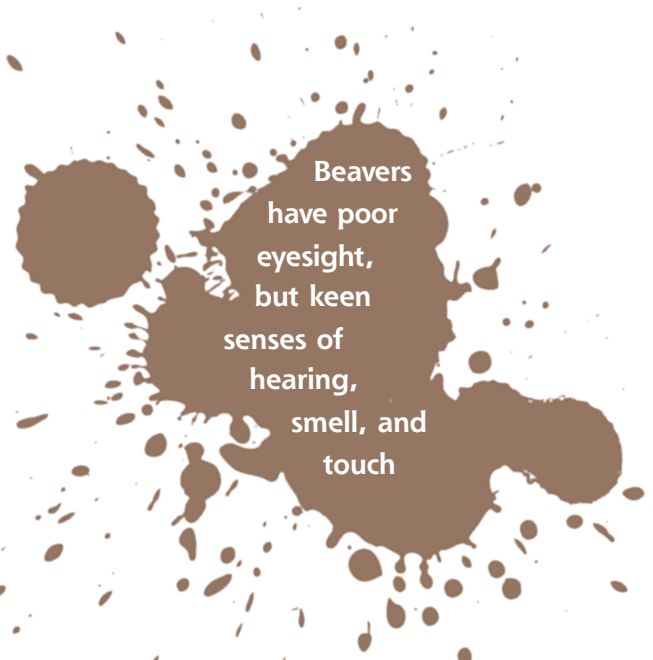
(Robert says this fellow is likely going to get flattened by a long-haul truck - a comment on the state of wildlife in general.)

## Did You Know...

- The beaver is a rodent.
- Its predecessors were very large - The Giant Beaver was about 2.5 m long and 300 kgs.
- There are two beaver species in the world: North American beaver (*Castor canadensis*) and European beaver (*Castor fiber*).

## Senses Activities

1. **Five Senses (or more)** (20 mins) - listen, taste, feel, see, smell and..... the world around us using a reflective journalling.
2. **Tree-ness** (15 mins) - Trying out what it feels like to be another organism. This is a quiet, reflective activity.
3. **Nature Orchestra** (20 mins) - Explore what you heard, saw, tasted, smelled, or felt through a rhythmic orchestra using your hands, nature instruments and other noises.
4. **Ready, Set, Tug!** (20 mins) - In groups of two or three become human cameras. Then sketch/draw what you remember in your "photo".





# Five Senses (or more)

## Process

1. Introduce the concept of senses to your group:
  - a. Ask your group to name the five senses (hearing, taste, smell, touch, and sight).
  - b. Explain that senses are the way humans take in information (e.g. when a metal is hot it is RED, and gives off HEAT, and can sometimes smell "TINNY", and it can sometimes CLICK: so don't TASTE it!!!!)
  - c. Ask the group to identify what the two most used senses are (seeing and hearing). Why do they think they are so over-used?
  - d. Talk to the group about how we tend to "forget" to acknowledge three of our senses due to ongoing noise and visual elements (e.g. traffic and computer screens).
  - e. Ask your group to imagine that humans have more than five senses - what might some of these be? You can encourage them to think about this by telling them about the sense of gravity (tested in an experiment that confirmed that most humans have a sense of how high they were being suspended above the earth when blindfolded).
2. Hand out a few pens and pencils to each person with two pieces of paper.
  - a. Ask your group to find a quiet spot (as an individual or groups of two - especially for young ones)
  - b. Before they go to their spot, tell them they have 15 minutes to observe through each of their senses:
    - i. What do you hear?
    - ii. What do you see?
    - iii. What do you smell?
    - iv. What do you feel?
    - v. What do you taste?
  - c. Ask them to record their experience through drawing, writing, or just simply sitting and observing.

## Extension

Ask members of your group to each draw a picture of something they are sensing around them. In their image, they could include words of their sensory experiences.

## Learning Objectives

- To rediscover the role of senses as they relate to perception and observation of the world around us
- To take time to reflect, draw, and be still in nature
- To attempt to perceive with our five senses (and more)

## Time Required

20 minutes

## Materials

Paper, pens, crayons, coloured markers

## Audience

6 year-olds to 109 year-olds

## Setting

This should be done in an outside setting with diverse sounds, sights, smells, textures, and tastes! Look for places with the following elements:

- Birds
- Creeks
- Trees
- Built environments (bridges, paths)
- Fallen logs
- Long grasses



# Tree-ness

## Process

1. Talk to your group about perception:
  - a. Humans have a way of thinking and sensing the world around us. We tend to think in simple ways and tend not to consider that other organisms have ways of interacting with the ecosystems around them.
  - b. We can help humans to see in new ways by pretending to be other species.
  - c. This activity is a type of "anthropomorphism", which means giving non-human objects human characteristics, like thinking and feeling. When done with intention, this can be a powerful way to consider the needs of other species.
  - d. This activity supports your group in taking an imaginative risk by pretending to be another species.
2. This next part of the activity is done with the group not using words.
  - a. Ask each individual to become a tree and ask them to ignore social norms to take part in the activity that considers the following questions:
    - i. What do you need to grow? Become a tree with your arms and body.
    - ii. What do your roots look like? Make your body become the roots of a tree.
    - iii. What do you feel like when water goes from your roots to the tips of your branches?
  - b. Ask your trees to close their eyes and consider the time it takes to grow to the size of the trees around them.
    - i. What have you witnessed over the past 10, 50, 100 years?
    - ii. What did this area feel like when you were a seedling?
    - iii. What animals rely on your presence for their home?
3. Ask your group to come back to a circle and to debrief their experience: Did they have any new perceptions about trees?

## Extension

This activity can be done with any organism (birds, plants, worms etc.) or in-animate objects (rocks, old buildings, lamp-posts, etc.).

## Learning Objectives

- To experience the world through a new perspective
- To practice using our imagination to observe nature in deeper ways
- To take calculated risks to help people see in new ways

## Time Required

15 minutes

## Materials

Nothing!

## Audience

0 year-olds to 109 year-olds

## Setting

This activity works well in a forest, especially old-growth forest. However, you can do this activity anywhere outside and it will be great.

Consider finding a large area that is far away from other humans and interruptions.



# Nature Orchestra

## Process

1. Talk to your group about the power of reflection with regards to senses. Olfactory senses (or smell memory) are said to evoke the most intense memory recall ability. Have you ever noticed that certain smells can make you recall whole events in your past with deep clarity?
2. Welcome your orchestra. Ask them to stand in a large circle, shoulder to shoulder and ask them to remember a wilderness experience they had in the past 24 hours.
  - a. Did you see, hear, smell, taste, or touch a piece of nature in the past 24 hours that really stands out? (e.g. I heard a bird singing in a tree while I walked to work, I smelled the new buds on the trees in the square).
  - b. Ask your group to adapt their sentence to a small phrase (e.g. I heard a bird sing che-ree, che-ree).
  - c. Ask your group now to count the number of syllables in their statement by clapping (clap the tune of your phrase).
  - d. Thank your group for tuning their instruments, and give them a minute to keep tuning them (keep clapping).
3. Introduce yourself as the conductor and tell your group that they are about to play the premier performance of the Tsaritsyno Nature Orchestra - using only their hands!
  - a. Ask your Orchestra for quiet - "Quiet please!!"
  - b. Tell them how the music will be played:
    - i. You will indicate to your left for the first player to start playing, when they get into the groove of their claps, then they can nod to their left for the next person to join them.
    - ii. Do this until you reach a crescendo of your orchestra.
    - iii. Ask random people to walk through the middle, without clapping, to hear the various beats going on.
    - iv. Then indicate to the person to your left to stop clapping and slowly to the person to their left, until all are silent.
4. Debrief the activity - what did people hear, what happened to the sound as they walked through the middle of the circle?

## Learning Objectives

- To practice observation and reflection in a celebratory way
- To be part of a musical creation

## Time Required

20 minutes

## Materials

The extension requires your group to find objects such as loose rocks, sticks, bark etc. without damaging the environment.

## Audience

5 year-olds to 109 year-olds

## Setting

This should be done outside in a large open area. It can be conducted inside if necessary.

## Before you Start

If you do the extension, be sure you talk with your group about appropriate removal of found objects (see pages 6 and 25)

## Extension

Ask your group to find small rocks, sticks, bark, or other objects that can become instruments by banging, sliding, scratching, or blowing on! These can become the instruments in the Nature Orchestra.



# Ready-Set-Tug!

## Process

1. Talk with your group about close observation:
  - a. Close observation means to slowly look at the object in front of you and recognize the details of the plant, animal or object:
    - i. Does it have different colours?
    - ii. Does it have sharp bits or smooth bits?
    - iii. Does it look dry or wet?
  - b. Close observation gives us a chance to learn from nature in a new way. Through observation we can witness processes, adaptations, and inter-relations.
2. Ask your group to break into pairs:
  - a. One of them will be a photographer, and one a "camera"
  - b. The photographer will ask the camera to close its shutters really tight (close their eyes) and the photographer will lead them around a natural setting.
  - c. The photographer will look for something that appeals to them that they want to take a photograph of and moves their camera's shutters (turns the person) so that they are pointing at it (it can be close up or far away).
  - d. The photographer then maneuvers the tripod (the persons body) to be in the exact position that they want to take the photo in. They then say to the camera "Ready, Set..." and press the shutter button by gently tugging on the person's earlobe. Tug the upper ear if the person has earrings!
  - e. The camera's "shutters" open, without moving their position, and stay open for 20 seconds to memorize what they are looking at.
  - f. The photographer continues, taking about three photos and then switches roles to become the camera.

## Extension

Have your group return to a quiet area to sketch the pictures that they took by memory and then have them return to the places to compare them to their sketches.

Create paper frames with ripped pieces of paper to frame their picture and sketch what they see in their frames (see Nature Journalling Part 1 - page 20).

## Learning Objectives

- To use your eyes in a way that supports close observation
- To explore photographic methods and framing
- To trust each other

## Time Required

20 minutes

## Materials

The extension needs pieces of paper that have rectangles ripped or cut out of them:



## Audience

6 year-olds to 94 year-olds

## Setting

This should be done outside in a large open area with a diversity of trees, plants, creeks, etc.

## Before you Start

Do a quick scan of the area that you want to explore to make sure that you are aware of any hazards or safety concerns. Point these out to your group before they start.

# Creativity - Wildlife Images



Creativity plays an integral role in the development of environmental knowledge and inquiry. As a guide it can be intimidating to foster creativity, as much of it feels like a risk. The key to creativity education is to encourage your group to consider that everything is part of a process - even failures. Funnily enough, failures are encouraged because they often lead to enhanced learning.

That being said, a great guide will help their group identify passions and encourage further development and exploration.

Learning the basics of visual creativity helps with a variety of life challenges. Highly creative people can often see challenges with alternative perspectives and provide solutions to everyday problems using both creative thinking and visual creativity.

## Role of Creativity (an academic view)

The expression of a person's ecological literacy reinforces and supports their development in a local environment. Art can act as an extremely powerful tool for young people to explore their creativity and integrate their knowledge among different disciplines which helps develop their worldview and belief systems. Young people that are encouraged to take risks outside of their normal comfort zone in their surroundings are able to act on their new knowledge in profound and useful ways, like restore damaged ecosystems, limit environmental degradation, and create beautiful art. This knowledge and action translates into transformative experiences, which allow the student to develop, or at the very least expand, their worldview to include the environment.



# Link to Robert Bateman's Art

## How Wildlife Images Represent Creativity

- The species in *Wildlife Images* represent the challenges of animals surviving amidst human development.
- Humans are creative creatures and often have a hard time distinguishing development from moral, ethical, and ecological destruction.
- Humans find creative ways to protect, restore, conserve, and rejuvenate habitat and animals that have gone through duress (e.g. oil spills, animal shelters).
- Many animals adapt to their environment, even in the face of challenging human-caused circumstances. Some of these adaptations can be described as highly creative (using tools, changing gaits, altering diets, etc.).



*Wildlife Images*, 40" x 45", acrylic on canvas, 1989

## Did You Know...

- There is a large collection of marine litter, mainly plastic waste, called the Great Pacific Garbage Patch that is floating in the Pacific Ocean. This plastic ends up in the stomachs of marine birds and animals, which often kills them. Alternatively, some fishes and algae use the floating matter as habitat.
- Crows create their own tools, even bending wire to create a hook to retrieve food.
- Some bald eagle nests have been estimated to be heavier than 1000 kgs.

## Robert Bateman talks about his art

**top:** bald eagle shot by "yahoo" hunter

**middle:** seal entangled in a nylon driftnet

**bottom [L to R]:** oil slick; red-necked grebe & rhinoceros auklet; plastic six-pack ring

## Creativity Activities

1. **Nature Journalling Intro** (30 mins) - Begin a nature journal, including observation and drawing skills.
2. **Forests and Buildings** (15 mins) - Using basic tools, observe the differences between nature and the built environment.
3. **Nature Sculpture** (30 mins) - Using found natural materials, create artistic sculptures.
4. **Nature Journalling Part 2** (20 mins) - Delve deeper into observation, representation, and reflection.



Andy Goldsworthy - Leaf Sculpture



# Nature Journalling Part I

## Process

1. Talk to your group about beginning an Nature Journal:
  - a. Does anyone have a journal at home? What types of things do they write (or draw) in it?
  - b. The Nature Journal is different than a personal journal. It is more than recording thoughts and observations alone. It is a tool that lets us discover patterns, processes, and ideas that stem from natural activities or experiences.
  - c. Nature Journalling is about mixed-media including drawing, writing, diagramming, painting, gluing, rubbing, and so on.
  - d. Some people are afraid of drawing. Set their mind at ease by encouraging them in their drawings by being positive.
2. Ask your group to find a quiet spot to sit and set up their paper, a hard drawing surface, and pens and pencils.
  - a. When they have reached their spot they will be asked to find a small piece of nature that is interesting to them (leaf, twig, rock etc.) and draw it with this in mind:
  - b. Think of the subject you found as a treasure that you have never seen before, and look all around it until you see the angle you want to draw.
  - c. Focus on what you are doing and draw slowly.
  - d. "Don't draw the whole truth but draw nothing but the truth". This means that you don't have to draw everything, but draw only what you see.
  - e. Record what you are drawing (even if you don't know the name - call it something!), put a date on the paper, and your name.
3. Debrief your activity by asking your group to voluntarily share what they have drawn with the rest of the group. Be sure to praise everyone's work and thank them for sharing.

## Extension

Record other pieces within the drawing including your observations such as:

- Where else do you see the object you are drawing?
- What is its size?
- What does your object smell, taste, sound, feel like? Indicate where these things are on your object.

## Learning Objectives

- To learn how to use a Nature Journal for drawing and observing
- To have fun being creative in a safe and supportive environment

## Time Required

30 minutes

## Materials

- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Black or blue pens
- Pencils

## Audience

6 year-olds to 109 year-olds

## Setting

This should be done outside in a large natural area that has a diversity of trees, creeks, and built structures.

## Before you Start

Ask that people try to accurately represent what they are drawing instead of imagining what they are seeing. One way to help people do this is to encourage them to draw upside down! Cover the bottom of a small object with a piece of paper and ask people to only draw what they see. Slowly move the paper down and draw more.

# Forest and Buildings

## Process

1. Introduce the concept of drawing and creativity as a way to observe the world around us. Drawing can be used as a tool for observation and documentation (recording what you see).
2. Ask your group to find a spot to draw where they can face one way and see part of the built environment (bridge or building) and can see nature (forest, stream, bushes) when facing the other way.
  - a. Spend 4 minutes quickly sketching the built environment (encouraging accuracy but not the details).
  - b. Spend the next 4 minutes quickly sketching the natural environment (encouraging accuracy but not too many details - see Nature Journaling Part I, page 23).
3. Ask your group to count the number of vertical and horizontal lines in each of their drawings. Get your group to share their drawings and their numbers associated with each of their drawings: The buildings will have many more vertical and horizontal lines.
4. Debrief the activity - why are there more straight lines in the buildings and bridges? Why doesn't nature have as many?
  - a. Was there anybody in your group that had more straight lines in nature? Why was that?
  - b. Be curious, but not judgmental with their drawings and talk about this activity as a great way to collect data, and see details beyond what immediately comes to mind.

## Extensions

- Spend 10 minutes on each drawing instead of 4 minutes. This will help develop their observation skills.
- Ask them to consider the shadows. Are there any shadows and how are you portraying them in your sketches? What are the shapes of the shadows in each drawing compared to each other?

## Learning Objectives

- To notice the difference between the natural environment and the built environment
- To practice observation and drawing skills

## Time Required

15 minutes

## Materials

- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Pencils

## Audience

6 year-olds to 109 year-olds

## Setting

This should be done outside in an area that has built structures such as bridges and buildings and near a natural area with forest and trees.

## Before you Start

This activity is best done after Nature Journaling Part I.



# Nature Sculpture

## Process

1. Talk to your group about composition, physical sculpture, and using natural materials to create 3-dimensional objects:
  - a. Creating environmental sculpture requires patience, vision, and acceptance of failure. Often pieces can be very delicate, and can be changed by nature (floating away on the breeze, being washed away by rain, or falling over).
  - b. Nature Sculpture is as much about the process as it is about the end product. Find materials that will be fun to work with and that you feel comfortable with.
2. Ask your group to split into groups of 2-4 people (or alone):
  - a. They should find a spot that is near to the material that they will use to create a sculpture
  - b. Ask them to consider the surroundings (is it in a beautiful spot that could be enhanced by a temporary sculpture?)
  - c. What type of sculpture will you do? Provide a few examples (see pages 26-28):
    - i. a flat sculpture that uses coloured leaves, twigs, etc.?
    - ii. a tall sculpture that you balance branches?
    - iii. a hanging sculpture that can be hung from a branch?
    - iv. a moving sculpture?
3. Give your group some time to start building and creating the sculpture
  - a. Be sure to stress that they should not damage, kill, or dig up anything to build their sculpture.
  - b. Mention that this building might just be the beginning of their process. They might not get to finish the sculpture today but maybe they can come back and work on it later, or start again somewhere else.
4. After 20 minutes to 45 minutes, ask your group to record their sculpture quickly (eg. photo, quick sketch or video clip). Then, if necessary due to Tsaritsyno regulations, ask them to disassemble the sculpture.
5. Debrief with your group about the process. How did it feel to create a sculpture from found materials? What would they do differently next time?

## Learning Objectives

- To touch and create art with found pieces of nature
- To create sculptures in small groups
- To explore physical, three-dimensional, artistic creativity

## Time Required

30 to 60 minutes

## Materials

Nothing other than what your group finds outside

## Audience

10 year-olds to 94 year-olds

## Setting

This should be done outside in an area with many small, loose pieces, such as rocks, branches, twigs, leaves, grass clippings, bark that has fallen off a tree etc.

## Before you Start

Identify hazards, such as stinging plants, bee nests, or dangerous areas on the grounds and provide a boundary.

## Respecting Nature!

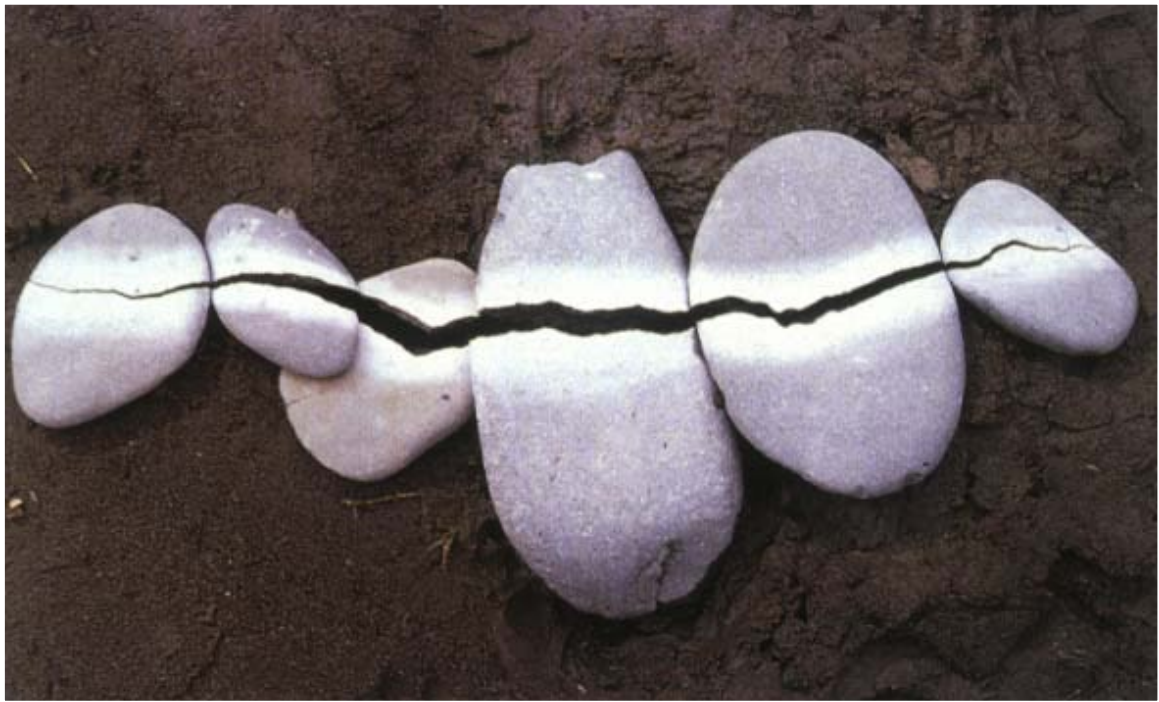
Ask that people do not remove or kill any living organisms such as live plants or live animals. Also do not remove buried rocks or bark from trees.

Respect for the environment and its living organisms is essential in this activity (more on page 6).



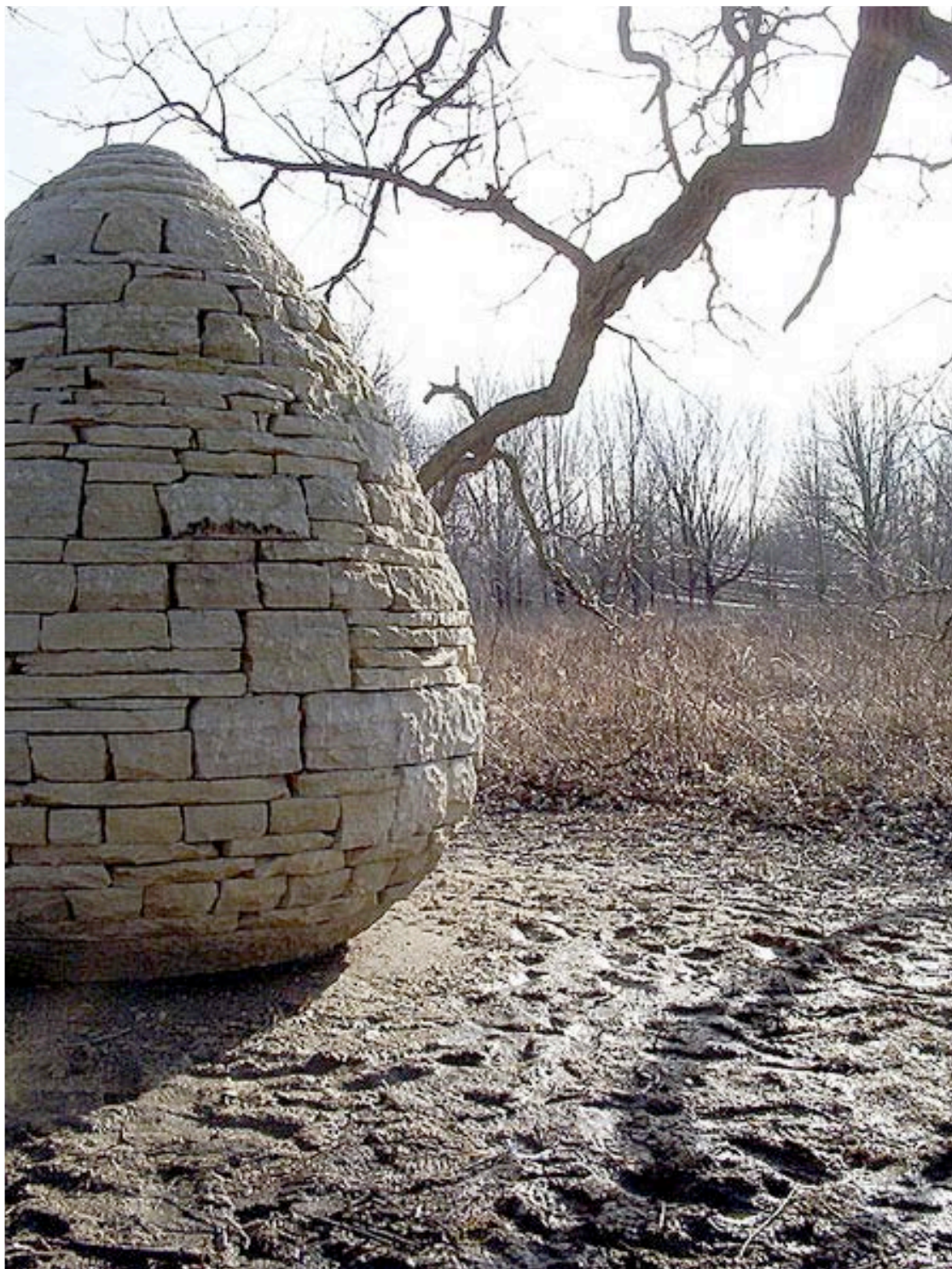


**Robert Smithson - Spiral Jetty**



**Andy Goldsworthy**





**Andy Goldsworthy**



# Nature Journalling Part II

## Process

1. Talk with your group about the power of taking a small number of found objects from a natural site.
  - a. Nature Journals have few boundaries, and thus you can paste leaves, smear mud or dirt, and press the journals against tree bark to get impressions.
  - b. Connecting your journal with the nature around you can help you experience nature more fully and have a keepsake that immediately takes you back to the moment you created the journal entry.
2. Ask your group to individually find an area for journalling where they will select a piece of nature to glue, smear, or imprint onto their paper. Be sure to stress the importance of observing respectful removal as discussed on pages 6 and 25.
3. Ask your group to reflect on the nature they have added to their book. Draw arrows with labels, paint them, or identify the species if you can.
  - a. If you paint with water colours, try to use water from a nearby stream - then there will be even more nature on your page.
  - b. Try to provide context for your bit of nature - draw beside it an image of where it came from, write the names of the animals that might live there or pass through.
4. Debrief the activity - have people share their creations voluntarily. Make sure you share your own if you have done one. How did people enjoy the activity? What else could you collect on paper?

## Extension

Ask your group to dream up an origin of the bit of nature that they have on their page and write it down:

- Why is it shaped the way it is? Is there an advantage to being that shape, as opposed to another shape?
- Why is it the colour that it is? Did it inherit its colour from another organism?
- How did this bit of nature get to Tsaritsyno?

## Learning Objectives

- To continue to develop journalling skills such as observation, drawing, pattern recognition, and creativity
- To explore media as ways to record your observations

## Time Required

20 minutes

## Materials

- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Coloured pens
- Coloured pencils
- Crayons
- Glue-stick

## Audience

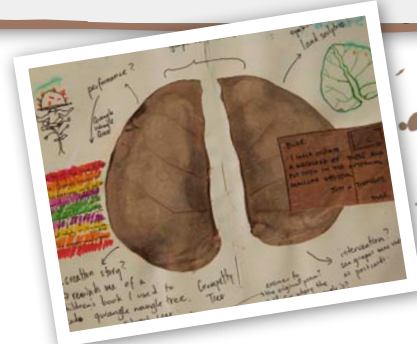
6 year-olds to 109 year-olds

## Setting

This should be done outside in a large natural area. It should be done in an area with a diversity of trees, creeks, plants, and structures.

## Before you Start

Review respectful removal practices on pages 6 and 25.

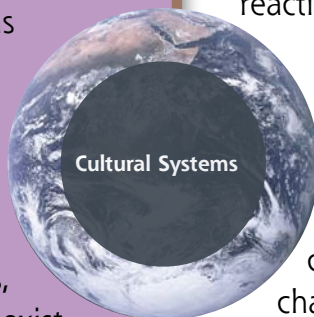


# Interconnectedness - Vancouver Island Elogy



## Ecological Systems • Cultural Systems

Depending on your belief system, Earth has existed for around 4.5 billion years, and with it came life, death, and culture. Humans (*Homo sapiens sapiens*) have been on earth for approximately 200,000 of those 4.5 billion years - but our effect has been massive. Within that time, humans have diversified and developed cultural systems that connect (both positively and negatively) with ecological systems. Yet one thing is vitally apparent, cultural systems, including economics, arts, beliefs, religions, and governance exist within the larger ecological system.



The meaning of "Interconnectedness" can be challenging to convey. Yet, intuitively we know what it means when described as "every action has a reaction".

In ecological systems, it is vitally important to consider that changes to habitat often have negative

effects on both the species that call it home, and all species that connect to them. In the end, this means that we humans are also affected.

Forests are an example of something that humans affect for lumber and paper. Those forests require a certain level of ecological integrity to maintain a viable habitat for the species that live within them. Forests provide a service for humans beyond lumber, trees, and food: they create habitat.

# Link to Robert Bateman's Art

## How Vancouver Island Elegy Represents

### Interconnectedness

- Cultural systems arise within ecological systems. In different ways, forests have provided food, shelter and inspiration for human cultures for aeons.
- First Nations cultures in Canada celebrate the connection to the land and forest - as shown in the fallen totem pole. Their cultures and ecosystems are endangered due to industrial logging pressures.
- Living sustainably from the land and ocean suggests that we should heed the wisdom of cultures and ecosystems that have been marginalized through industry.

### Did You Know...

- First Nations totem poles often represent creation stories, and welcoming messages.
- Old-growth forests are characterized by their age (over 250 years) and ecological diversity (canopy heights, biodiversity).
- Only 19% of northern Russia's old-growth forest remains un-cut.
- Many Canadian coastal First Nations rely on fish for their food and livelihood.
- We have eaten more than 90% of the big fish in the sea.

### Creativity Activities

1. **Transects** (20 mins) - families are given lines to walk and record all instances of living organisms that they see.
2. **Crazy Systems** (30 mins) - a highly animated group journalling exercise for two or more families.
3. **Ecosystems** (15 mins) - play an ecosystem game that uses stone, paper, scissors to explore the way systems change.



*Vancouver Island Elegy, 42" x 46 1/2 ", acrylic on canvas, 1989*

### Robert Bateman talks about his art

Vancouver Island Elegy is another cry of protest about the state of the environment, but it also focuses on my long-standing interest in different and time-honoured ways of life, particularly those that unfolded in harmony with nature. The top image displays an old totem pole of the kind found all along the Pacific coast. It resembles the coffin of a dying culture, a culture which, at its height, produced art to rival anything of Rembrandt's or Picasso's.

In the middle, I have shown a native elder, a representative of the old way of life. I saw him on Vancouver Island at a gathering of natives and non-natives united in their opposition to clear-cut lumbering (the wholesale cutting down of forests when only the big old trees are wanted). The elder's face spoke powerfully to me of the vanishing of the old ways. This perception was heightened when one of the speakers, the tribal chief, told us the younger generation is not interested in their traditions -- they are preoccupied watching sitcoms or rock videos on television. (I've made a reference to this by painting a TV aerial in the background.)

In the bottom left-hand corner is an abandoned First Nations' fishing boat. Traditionally, the First Nations along the West coast depended upon fish for survival, but today, commercial fishing is so sophisticated that the First Nations can't compete. Even if they could, industrial fishing methods have left their traditional fishing grounds depleted.

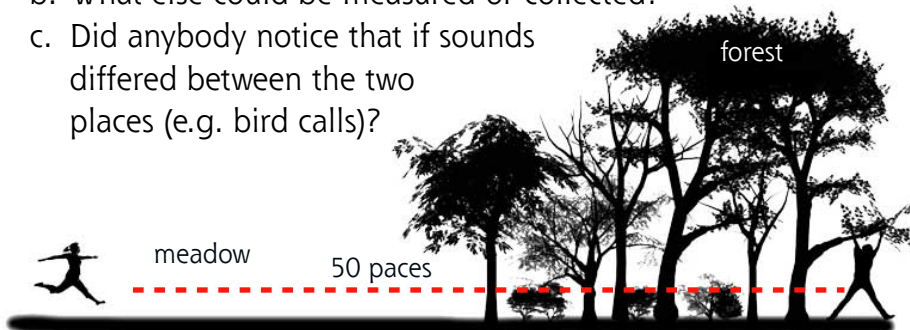
On the lower right is a logging truck representing an approach to nature very different from that of the native North Americans. The logs on this monster are uniform in species and size, part of a plantation put in after an old-growth forest has been cleared out.



# Transects

## Process

1. Talk to your group about the plants and animals that are found along edges of naturally occurring habitats. Has anyone noticed what it feels like to be deep in a forest vs. on the edge of a forest?
  - a. The general cover of plants will change from deep within a forest, to the edge (where there is more light). Also the types of plants change from deep in a forest to the edges of a forest.
  - b. Plants that grow around creeks also tend to be different from ones that grow up a bank.
2. Ask your group to split into groups of four and choose a transect (a line across a landscape) to investigate. Have the group trail a line of string from one end to the other (e.g. from the edge of a creek up its bank or from the middle of a forest to the edge of the forest). The line should be approximately 50 strides long.
3. The group should record where they are, the weather, date, and time on a piece of paper. Then in groups of two they should travel slowly from both ends of their line and draw the plants that they come across as they go:
  - a. Each tree, shrub, log, and animals should be noted along the line.
  - b. They could try to do an approximate measurement of how tall trees are, and how big shrubs are.
  - c. Let your group be as detailed as they want to be (estimating cover, looking at mosses, lichens, and dead leaves).
4. Ask your group to debrief their activity by sharing their transects.
  - a. What did they find?
  - b. What else could be measured or collected?
  - c. Did anybody notice that if sounds differed between the two places (e.g. bird calls)?



## Learning Objectives

- To observe the changes in small ecosystems across a landscape
- To recognize patterns, connections, or adaptations in the local ecology

## Time Required

20 minutes

## Materials

- Balls of twine or string that can be used to indicate the transect
- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Coloured pens
- Coloured pencils
- Crayons
- Glue-stick

## Audience

6 year-olds to 94 year-olds

## Setting

Find a landscape that is on the edge of a forest or creek and ask your group to put their strings perpendicular to the edge.

## Before you Start

Be aware of hazards and alert your group to them. Also, ask your group to try not to step on or crumple any plants. See pages 6 and 25 for more on respecting nature.

# Crazy Systems

## Process

1. Talk to your group about how creativity is contagious:
  - a. When people are laughing and having fun, they tend to be more creative.
  - b. This activity allows for the group to share in a creative process and explore how systems work without knowing everything about a system.
  - c. Systems are all around us. What are some examples of systems?
    - i. Ecological systems (nutrient cycle, rain cycle, plant reproduction system, digestive system) - remember that humans are natural!
    - ii. Economic system (stock market, tourism, small business)
    - iii. Computer systems (personal computer, calculator)
    - iv. Social systems (families, communities)
2. Ask your group to form groups of five to eight people sitting in a circle (preferably with people they do not know).
  - a. Each person should have a piece of paper and a few pens and pencils.
  - b. Tell each person that they have 45 seconds to draw the first part of a any natural system that they want (e.g. rain from a rain-cloud or family system).
  - c. After the first 45 seconds, call out "pass to the left" and the people pass their piece of paper to the person on their left.
  - d. Try to figure out what the system is and add to it. Give them another 45 seconds and call out "pass to the left." Keep repeating until they the papers have gone around the entire group.
  - e. The point of this activity is to create a 'crazy' system on each piece of paper.
3. Once the systems have been passed around, ask your group members to write the original system's name on the top of the page, and then a new name for the system at the bottom of the page (based on their interpretation). Ask the groups to share their systems with each other on a voluntary basis.

## Learning Objectives

- To have fun with interconnectedness
- To explore communal creativity
- To consider your family and friends as part of your creative endeavor

## Time Required

30 minutes

## Materials

- Stopwatch or timer
- Paper (or personal journals)
- Hard board (magazines, books, clipboards) for putting under the paper
- Coloured pens
- Coloured pencils

## Audience

6 year-olds to 109 year-olds

## Setting

This should be done in a flat open area outside. It can be conducted inside if necessary.

## Before you Start

Encourage your group members not to write down words in this activity if they can. This should be a visual, and highly spontaneous activity. It is OK to not be realistic!



# Ecosystems

## Process

1. Talk with your group about ecosystems. Ecosystems are constantly changing:
  - a. Populations of predator species often expand when prey species populations expand and then collapse when they run out of food.
  - b. Random events, such as earthquakes, fires, and disease, can affect populations and sometimes create imbalances in natural systems.
  - c. Species in an ecosystem are in constant competition for scarce resources (e.g. Humans compete with bears for habitat and food).
  - d. Humans are part of nature and are also affected by the systems around them.
  - e. This activity illustrates how humans, animals, and plants can affect each other.
2. Split your group up into four evenly-sized smaller groups (e.g. if there are 20 people - you would create four 5-person groups):
  - a. Assign each of the four groups a species (plant, deer, bear, or human).
  - b. Ask each group to act like their species for the duration of the game (e.g. bears growl and hold their claws up in the air, plants hold their arms sideways, etc.).
  - c. The goal of the game is for each species to win as many new members as possible.
  - d. Remind people how to play stone, paper, scissors. (Stone beats scissors, scissors beat paper, and paper beats stone).
  - e. Each person should find a different species to play stone, paper, scissors with. The loser becomes the same species as the winner.
3. Keep playing this game until one species has all the members, or has the highest number of individuals in their group.
4. Debrief the game
  - a. Who had the most people in their group at the end of the game?
  - b. How might this outcome be different in reality?
  - c. Why would some species be more abundant than others in nature?

## Learning Objectives

- To explore the relationship among humans, animals, and plants in ecological systems

## Time Required

15 minutes

## Materials

Nothing

## Audience

10 year-olds to 94 year-olds

## Setting

This should be done in a flat open area outside. It can be conducted inside if necessary.

## Extension

Introduce various random events that affect the population sizes. (e.g. Overgrazing causes all of the grass individuals to disappear. Hunting season opens, and all but two deer become humans (hunters).



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Robert Bateman



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UNIVERSITY



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Caterina Geuer

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It was written by Nick Stanger MA, Royal Roads University with the help of Joy Beauchamp, MA in Environmental Education and Communications, Nadine Lefort MA, Sierra Club BC Environmental Education Director, and Caterina Geuer, Acting Executive Director, Royal Roads University Foundation.

*An environment-based education movement--at all levels of education--will help students realize that school isn't supposed to be a polite form of incarceration, but a portal to the wider world.*

Richard Louv. 2008. *Last Child in the Woods: Saving our Children from Nature Deficit Disorder*

