BRINGING THE OUTDOORS IN
&
THE INDOORS OUT
with
5 Minute Field Trips

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GENERAL IDEAS

- **Scavenger hunts:** all grades and subjects, from simple to complex. Vary this activity by using photography to 'capture' items rather than removing from their natural setting.

- **Looking closely:** use magnifying glasses to go on an open-ended hunt, just see what you can see!

- **Create a school yard eco-calendar:** temperature from last year, bloom date of dandelions, flowers, and migrating birds in spring and fall, ice forms on water, snowfall, and thunderstorms.

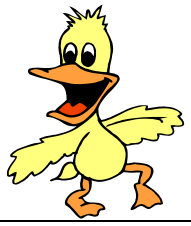
- **Create an outdoor classroom:** all you really need is a place for students to be comfortable during the activity or lesson.

- **Keep a science journal:** record observations and thoughts, any questions about topics, detailed drawings of any subject, creative expressions of science topics, keeping track of personal health and wellness.

Kindergarten

Cluster	Ideas
Trees 	• Practice tree vocabulary on a living tree • Bring items from a tree inside for further examination: trunk, needles/leaves, branch, root, etc. • Create patterns with found leaves based on colour, size, etc. • Adopt two trees: coniferous and deciduous. Observe each tree during the seasons, compare and contrast
Colour 	• Find each colour in nature. This may be difficult! • Collect objects with different shades of the same colour: grey rocks, yellow leaves, etc. • Create a 'colour line' from light to dark
Paper 	• Explore a tree to find out which part makes paper. Discuss what would happen if leaves were added, different colour trees, etc. • Add to your design project using elements found in nature. Decorate paper cups or party hats with leaves and stones

Grade 1

Cluster	Ideas
Characteristics & Needs of Living Things 	• Find and discuss one-way and two-way relationships • Create a vocabulary list. Take a walk to demonstrate each word • Explore all the different vegetation forms on a nature walk • In a natural setting, point out what people need to survive. Compare this to what animals need to survive • Take a walk, discuss how to respect the environment with specific examples of what to do and what not to do
The Senses 	• Close your eyes to discover a natural being: a tree, flower, etc. Describe how it feels, smells, etc. • Activate all senses outside, one at a time • Collect objects from nature. Classify them according to texture
Characteristics of Objects & Materials 	• Collect leaves, pebbles, other natural objects for classifying • Explore an outside object using sensory observations: tree, metal bike rack, wooden post • Walk around the school or community. Try to find evidence of positive waste management
Daily and Seasonal Changes 	• Observe and record evidence of change in plants, leaves. Adopt a tree to observe, re-visit several times in the year • Identify items that follow predictable patterns and cycles • Look for evidence of seasonal changes: flocking birds, cool air, icicles, tracks in snow, growing buds, busy insects, etc. • In one day, go outside several times to observe how shadows change

Grade 2

Cluster	Ideas
Growth & Changes in Animals 	• Observe and record measurable changes in a volunteer animal • In a natural area, identify the foods that animals can use. Classify these foods • To reinforce the life cycle, showcase and discuss a plant's life cycle
Properties of Solids, Liquids & Gases 	• Create a word list. See how many items you can observe outside • Investigate how solids take up space on a larger scale. Use buckets of water and rocks, for example • Identify liquids found in your area naturally: water, sap, etc. • Demonstrate liquid states by observing a water source in fall/spring, winter, on a foggy morning, etc.
Position & Motion 	• Demonstrate object relativity with natural elements: slope of a hill, behind a tree, above the grass, etc. • Observe insects in the school yard. Do they spin, bounce, jump, etc.? • Continue teaching about friction with outside elements: shoes on concrete, sandpaper on grass, etc. • Observe your school yard play structure in terms of motion: planes, axles, etc.
Air & Water in Environment 	• Find concrete examples of vocabulary words near the school. This can be like a scavenger hunt for examples • Find 5 pieces of evidence of moving air outside • Visit the same place in the school yard several times in a month. Observe and identify how water is present: dew, fog, ice, snow, rain, etc.

Grade 3

Cluster	Ideas
Growth & Changes in Plants 	• Visit the same plant/tree/flower over a period of time, observe, record, chart, photograph growth & changes • In spring, use a stethoscope to listen to sap running inside a tree • In September, put wool socks on over your shoes. Walk in a natural area, the socks will collect seeds. Sort, identify, and even grow the seeds • Find natural examples of vocabulary list
Materials & Structures 	• Gather natural materials to investigate for bridge building, fasteners and strength • Explore balance in nature – look at the symmetry of a tree, discuss why an unbalanced tree is standing, how various forces have affected items • Observe shapes used in structures around the community Compare/contrast these to shapes in nature
Forces that Attract or Repel 	• Walk in a natural area to find evidence of gravity • Use natural objects to test magnetic attraction • Use a compass around the schoolyard. Observe the effects on the compass when placed near a bar magnet
Soils in the Environment 	• Have an outdoor conversation about what we know about soil. Seeing soil in use inspires a variety of responses • Collect soil samples from around the school, community, and in nature. Investigate and compare samples • With gloves on, dig into the soil. Observe insects that use the soil. Discuss how soil can be used. Try to identify as many insects as you can

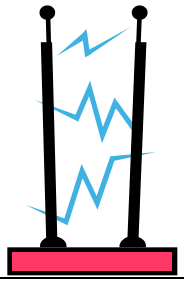
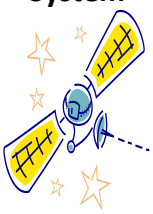
Grade 4

Cluster	Ideas
Habitats & Communities 	• Find and discuss one-way relationships and two-way relationships near the school • Look for an animal or bird home, or find an area that would be suitable. Observe nearby needed places: water, food course, hiding spots. Discuss how much area that animal actually needs • Find a comfortable natural setting to read and discuss plant and animal stories from various cultures
Light 	• Use light meters to measure the amount of natural light needed in a certain habitat. Measure from a spider web, ant hill, flower, small bush, etc. Chart and discuss • Find and list examples of energy both inside and outside the school Discuss in a sharing circle • Use natural objects to predict shadow size based on light source position
Sound 	• With closed eyes, listen to all sounds. Create and compare sound maps and chart. Repeat daily/weekly to notice differences and patterns • When windy, place one ear against a tree and plug the other ear. Listen to all the creaks • After observing sound in an area, create 'deer ears' by cupping hands behind ears. Observe new sounds • Use natural objects to enhance the design of a musical instrument
Rocks, Minerals & Erosion 	• Collect a certain number of rocks from various areas in the community. Observe, classify, and compare areas • Go for an indoor and outdoor walk around the school to determine which materials are made from rocks and minerals • Observe local human activities which have changed the landscape

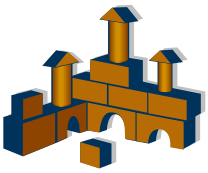
Grade 5

Unit	Ideas
Maintaining a Healthy Body 	• Observe several different plants in a natural environment. Create invented but realistic food labels for each plant • Compare body systems to a tree in the schoolyard. Which parts of the tree would be the skeleton? Nervous system? Muscles? Tendons? Skin? • Investigate local waste management processes. Visit any waste management site. Compare to the body's method of getting rid of waste
Properties of & Change in Substances 	• Explore process: evidence of one action that produces a reaction • Collect and investigate natural items, describe substances • Find examples of the changing states of matter near the schoolyard. Include physical and chemical changes
Forces & Simple Machines 	• Visit the playground to see which simple machines are used. If there is a teeter-totter, experiments with different weights, distance from fulcrum, etc. • Hunt around the schoolyard and community for wheel and axles, gear and pulleys, a wedge, etc. • Use the playground to create and demonstrate a moveable pulley system, a created lever, a wedge, etc. Create a problem and let the students solve it for you using machines
Weather 	• Record daily weather for 2 weeks. Include wind, temperature, clouds, etc. at the same time daily. Each day, have students predict weather for following day based on evidence • After designing their own weather instruments, test instruments outside daily for 1-2 weeks. Record observations • Record an outdoor weather report in the morning. Broadcast it in your school • Invite a hunter/trapper to your classroom to discuss experiences with weather

Grade 6

Unit	Ideas
Diversity of Living Things 	• Find and discuss one-way and two-way relationships • Give students a time limit to collect as many different leaves as possible, then categorize in as many ways as they can (size, colour, points, stem length, etc.) • Observe specific animals and insects. Discuss adaptations needed for survival • Find a place in nature to observe the five kingdoms of living things
Flight 	• Observe flight in nature, large and small. Observe insects, small birds, large birds. Discuss concepts in nature used in flight technology • Find examples of flight in plants and trees: leaves falling, seeds blowing, etc. Discuss how these characteristics have been copied by humans • Test and re-test a variety of kites on different days, comparing wind and temperature with flight success
Electricity 	• Address lightening safety around the community and in nature. Identify specific safe unsafe places to be • Collect natural materials to test as insulators or conductors • After creating an electromagnet, take it outside to see if you can pick up any rocks in the schoolyard. Also, take a walk around the school to see which types of metal create a magnetic field (door handles, hinges, bike racks)
Exploring the Solar System 	• Gather in a place where you can see satellite devices (cell tower, dish on the school). Discuss how these work on site. Introduce students to GPS • View a satellite map (Google maps) of your area. Observe what is seen clearly and what is missing from the map. Follow a trail from the map • In a natural setting, have students describe what would happen if the sun disappeared. Use specific terminology from previous study

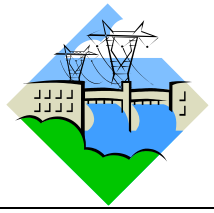
Grade 7

Cluster	Ideas
Interactions within Ecosystems 	• Find And Discuss One-Way And Two-Way Relationships • Find Evidence Of Complex Change: Sprouting Seed, Cocoon, Etc. • Find Evidence Of Simpler Change: Decaying Plant Or Animal • Reinforce Needed Vocabulary With Specific Examples In A Natural Setting
Particle Theory of Matter 	• Observe Allocations Made For Heating/Cooling In The Community: Tar In Sidewalk, Hydro Lines, Docks, Etc. • Collect Water Samples From Around The Community (Lake Areas, Pond, Tap, and Rain). Test Boiling Points, Discuss Results • Each Student Collects Snow in a Container. At Timed Intervals, Record Temperature. Create A Graph, Compare With Entire Class
Forces & Structures 	• Visit A Structure In Your Community (Bridge, Dock). Identify How It Is Able To Withstand Natural Forces. Observe Any Effects Of Force Onto The Structure • Identify Static, Live, Dead And Dynamic Loads Around The School. Use A Bicycle To Demonstrate Some Concepts • Challenge Students to Design a Structure (Tallest Or Strongest) Using Only Natural Objects They Have Collected
Earth's Crust 	• Collect Rocks and Minerals in the Community. Describe Using Observations On Lustre, Cleavage, Etc. • Near A Water Source, Find Evidence Of Erosion • Visit A Local Garden. Identify Soil Properties To Make That Garden Successful

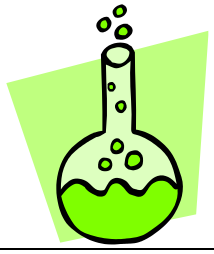
Grade 8

Cluster	Ideas
Cells & Systems 	• Use the Characteristics of Living Things chart to document several organisms in a natural area • Collect several plant samples around the school. Use a microscope to compare and contrast samples • In a natural setting, have students create an analogy of the planet Earth's systems. What would be the lungs, skeleton system, etc.?
Optics 	• Collect and use natural elements to create colour dyes: dandelion stem, berries • Explore reflection in the schoolyard and in a natural setting. Identify which sources produce a light reflection, and why • Use a camera to go on an optical treasure hunt: photographing various colours, natural examples of optic concepts
Fluids 	• Challenge students to find an outdoor example of a newly learned term • Use a variety of collected natural objects with different weights and volumes to explore mass & displacement • Use natural objects to build penny boats
Water Systems 	• Find specific examples of the water cycle outdoors • Visit a shoreline on a calm day. Observe the effects of erosion on the bank. Discuss ideas on how to prevent erosion • Visit your community's water filter system

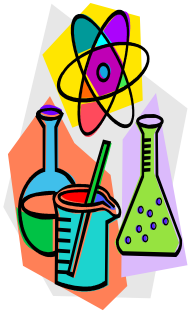
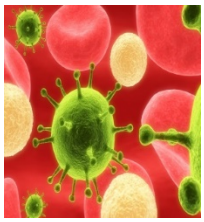
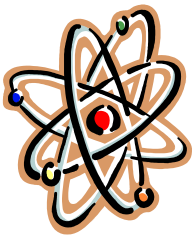
Grade 9

Cluster	Ideas
Reproduction 	• In a natural setting, observe as many plants which use visible asexual reproduction as possible • In a natural setting, have students identify which plants would be genetically modified, and for what purpose. Would they link characteristics?
Atoms & Elements 	• Take a walk around and near the school. Identify any items that use any of the first 18 elements • Find examples of physical and chemical changes in nature • Walk around the community to find examples of chemical changes in urban settings
Nature of Electricity 	• Find several objects around the school and in a natural setting. See if these will relay a charge • Visit a water source. Discuss the benefits and issues of bringing a hydroelectricity dam into or near your community
Exploring the Universe 	• For a period of 2 weeks, chart the position of the sun at different times of day. Compare the position results over the time span • After researching was of searching for extraterrestrial life, identify and justify an area suitable for habitat by any life form

Grade 10

Cluster	Ideas
Dynamics of Ecosystems 	• Find and discuss one-way relationships & two-way relationships • Use a natural setting to explain carrying capacity, limiting factors for specific animals • Identify and document the biodiversity of a set area. Use (and then remove) hunter's tape for the boundary
Chemistry in Action 	• Explore process: evidence of one action that is a direct cause for another reaction • Challenge students to find direct evidence of non-reversible pollution in and around the community
In Motion 	• Focus on movement in nature: clouds, blowing wind, flowers that open or close, things that fly, run, or jump, water that flows, etc • Measure the flow of water using two set points, an orange, and a timer
Weather Dynamics 	• For 2 weeks, have students predict weather for following day based on specific evidence. Record daily weather including wind, temperature, uv index, highs & lows, etc. • Measure radiation in various outdoor areas, both near the school and in nature • Find evidence of severe weather effects in your community

Grades 11 & 12

Area of Study	Ideas
Chemistry 	• Look for evidence of chemical reactions: rust, growing crystals, etc. • Use kinetic molecular theory to describe and explain observed natural properties and processes • Measure air pressure in various indoor and outdoor areas • Participate in a local water supply tour, testing local water, and recommended treatments • Experiment with solubility using a variety of collected water samples
Biology 	•Look for signs of destruction or death in nature: fly in spider web, rock cracked by tree root, something burned. Have students explain why these are positive or negative, and which leads to new beginnings. Re-visit site to observe changes •Identify activities and locations for outdoor activity in your community Link these to health and wellness •Identify life processes that are common to humans and observed plants •Compare the nutritional needs of local plants and animals to humans In a natural setting, identify the nutritional types •Explain how planet earth maintains homeostasis •Explore 'survival of the fittest' in a natural setting
Physics 	•Conduct a Safe Egg experiment: create safe containers, parachutes, etc. so the egg is protected upon impact from a set height •Use outdoor examples of wave use in the community •Create a theory of nature (true or false). Defend your theory, 'prove' it using the attributes of a good theory •Use outdoor objects & settings to explore kinematics, momentum, projectiles, centrifugal force & dynamics

RESOURCES

The Single Concept Field Trip
Clarke Birchard and Alan Crook
Adapted from *Pathways* 7:4, June 1994

Five Minute Field Trips
Teaching about nature in your schoolyard
Canadian Parks and Wilderness Society
Calgary Zoo
2002