Kindergarten

Example for Place-Based Learning

KINDERGARTEN
Big Ideas for Science

B BIOLOGY

Plants and animals have observable features.

C CHEMISTRY

Humans interact with matter every day through familiar materials.

P PHYSICS

The motion of objects depends on their properties.

E EARTH SCIENCES

Daily and seasonal changes affect all living things.

PLACE: Schoolyard or natural park

---

1 Experience Place

TONE: open-minded, unburdened, curious, playful

Play a game, *What's that? Habitat!*

Arrange students one behind the other in a line close enough so that they can place their hands on the shoulders of the person in front (or if it is easier on the hips). (The teacher can be at the front of the line, for starters). Coordinate movements as though a caterpillar. The class must move as a system (and that's the challenging fun). To practice, demonstrate and then train. Say, "food" and shake a foot out (same foot of all the class caterpillar!). Say, "water" and shake the other foot out. Say, "shelter" and shake opposite foot out. Say, "space" and release hands and express them out. (And say "love" and bring them back to the heart). Shout out, *"What's that?"*, for the answer back of "*Habitat!*" Keep going, repeating the game and seeing how well coordinated and how far the caterpillar can get while making the actions and words. Animate, ham it up, speed it up, anything goes as long as the caterpillar remains in tact and joyful.

What are some common animals?

What are some plants you know?

2 Questioning and Predicting

TONE: more focused, curious, reflective

B While still outside, ponder habitat in this place, i.e., who lives here?

C E What are some questions we might have about animals and plants and their habitat? How can we find out? Where might we look? Who might we ask?

P What objects around here move? How do they move? Why do they move differently?

HCTF Education

3 Planning and Conducting

TONE: creative, restrained, calculating, collaborative

B **1)** Time to be detectives and look high and low (at eye level (shrubs, tree trunks), at foot level on the ground, or under the ground. Make exploratory observations using the senses. Search as an entire class and in smaller groups. Remember that if birds or large animals are not obvious, there are usually animals in the forest duff or schoolyard dirt or below the grass. (If digging with trowels be mindful of restoring the place back to its original state.)

2) Mark a branch of a bush or leafy tree with string and make observations throughout the year.

C **1)** Plan and carry out a scavenger hunt for different kinds of "properties" of stuff in nature. Consider: colours, smoothness, roughness, flexibility, hardness, shininess, absorbency, etc. (make a list with the students). For the non-living consider gathering some of these, to compile and organize by their property.

2) Sequaying to the properties of familiar materials/objects - allow students to discover, manipulate and organize familiar objects (human-made) for their properties. (For different materials consider: fabric, wood, plastic, glass, metal, and sand).

E While outside, make exploratory observations of the weather using the senses. Dialogue on how the day feels, smells and sounds (i.e. wind, precipitation), and how the sky looks (i.e., clouds). Consider how you are dressed - are you dressed for the weather on this day? What about plants and animals - how do they deal with the weather?

P **1)** Catch some ground animals (earthworms, sowbugs, earwigs, spiders, etc.), place in a small plastic, lidded container (sometimes available for free at a pharmacy), for a limited time to allow making observations about how the animal moves. Observe their mode of movement, e.g., slither, fly, crawl, and hop. Observe how the shape or parts of the animal influences its kind of motion. (Return the animals to where they were found.)

2) Sequaying to the motion of objects, push/pull motion, and the effects of size, shape and materials on movement, allow students to manipulate different objects moving them different ways. Ask students how they move. Then drop a stuffed animal (ideally one that is bio-regionally correct) and ask students how it can be moved. Eventually explain that a push and a pull are both forces, etc.

When we push something, we are moving it away from us. When we pull something, we are moving it closer to us. Force makes an object move or stop moving. Search the schoolyard/park, making observations of things that are pushed or pulled. Students can manipulate familiar objects considering pushing and pulling (e.g., soda bottle bowling, making ramps for toy cars, etc).

4 Processing and analyzing data and information

TONE: observant, methodical

B **1)** Discuss observations about plant and animals in the local place. What is different about how plants and animals get water, get food? Consider the different parts of plants and animals and the roles these features play (a two column chart could serve nicely to record these differences/similarities). Using charcoal, have students draw a pictograph on a rock of a plant or animal they found in the schoolyard/park, drawing its parts.

2) Make colourful drawings of the marked shrub/tree through the seasons.

3) Storytelling-choose a local First People's story about the seasons and plants/animals.

C Make two similar charts, one for nature and one for human-made and have each chart two-columned. Chart in the left column list the object/item. In the right column have a list of properties explored. Students match the item with its properties. Compare the two charts for similar patterns. These features or properties can be used to describe "matter".

Matter is stuff. It's everything around us. Matter is anything that has weight and takes up space.

E Dialogue on how the weather affects local plants or animals? Describe First People's seasonal round of activities of hunting, fishing and gathering from the story.

P Reflect on observations made on the effects of size, shape and materials on movement, and the effects of pushes and pulls on movement.

5 Applying and Innovating

TONE: creative, open-minded, interconnected, engaging

Students appreciate that everything living has needs for habitat, including themselves and others. They need their own space, food, water, a home, and love. In respecting all life, they can respectfully treat others as they themselves would like to be treated. Make a list of behaviours that are respectful of their own needs and of others' needs. (First ask if it should be two separate lists or one, and take their lead). Make a list of behaviours for respecting all life, whether human or otherwise. Is it different from the previous list(s)? First Nations' ways of knowing fundamentally understand that all life is One. Make individual drawings or a class mural of what this means.

6 Communicating

TONE: confident, engaging, interpretive, expressive, sensory, using technology

Communicating is a skill practiced throughout the explorations, wonderings, and observations. Feedback from students for their answers and questions, ideas and wonderings is sought out often. In particular, encourage students to share their observations and ideas orally. And express and reflect on their personal experience of place, orally.