

Lesson Plan: Diversity and Classification

Grade Level 6 – 8

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Subject Areas Language, Math, Science,
Personal Planning

***Prev. Lesson** “The Key to Classification”

***Next Lesson:** “Creature Features Passport”,
“Characteristics and Needs”,
“Adaptations”

Theme

Diversity & Classification

Goal(s)

- 1) To use careful observations to understand the diversity of living organisms.
- 2) To produce an accurate scientific drawing based on students' own observations
- 3) To produce a classification key for the animals they have observed

Big Ideas from the B.C. Curriculum

- Engaging in creative expression and experiment expands people's sense of identity and communication
- Decimals, fractions, and percent

Content from the B.C. Curriculum

- Survival needs, natural selection, characteristics of life
- Introduction to ratios. multiplication and division of decimals

Competencies

- Make observations in familiar or unfamiliar context
- Experience and interpret the local environment
- Contribute to care for self, others, and community
- Communicate ideas, explanations, and processes in variety of ways
- Express and reflect on personal, shared, or others' experience of place

Initial Questions

Why and how do we classify our world?

Activity

In small rotating groups, students will observe 6 living organisms. Each group will record as many characteristics as they observe (using a guide sheet brainstormed in an earlier lesson) and take a photo. Each student will make a rough sketch of the organism.

In the following classes, the students will use their observations to create a classification key and detailed, accurate diagrams of 4 of the organisms they saw, working with their rough sketches, photos, and the Seaquarium.

The Lesson

Materials Required

- 6x marine organisms (e.g. sea lemon, decorator crab, sea star, sea cucumber, sea urchin, sculpin)
 - 6x containers and/or finger bowls
 - 6x larger basins
 - 6x research kits (thermometers, magnifying lens)
 - Observation templates (1 per group; developed through brainstorming sessions with students)
 - Paper for sketches
 - Pencils
 - Camera
 - Reference books
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Introduction Review behavioural expectations: respect the living organisms being observed. If students can touch the animals, they will need to wash their hands with **no soap** and **touch only with their pinky fingers**.

Divide students into 6 groups with a designated recorder(s) prior to lesson.

Review observation skills and provide students with example(s) of observations.

Body One group of students at each station with their designated recorder(s); detailed group observations based on observation template. Individually, students will draw rough sketches of their organisms (~3 min). Stress sketches should be based on **what they can actually see** not what they think they should see. Rotate and repeat at minimum of 4 stations.

Closing As a class, recap the experience and follow up with observations at the Seaquarium, research, creating their keys, and formal drawings in the classroom.

Reflection

Students *Related goal, metacognitive, or thinking about your thinking, new ideas*

“Due to timing, this part was done orally. As it took longer for the students to complete their keys and diagrams than I anticipated, discussion was ongoing, based on their success in creating a key. I was impressed with how on task students stayed both in their work and conversation”

Teachers *Where do we go from here? Future directions and strategies to get there? Variations, lead up?*

“Follow up took 2 weeks of working on keys and scientific drawings – students were seeking to exceed expectations. They found it challenging to create their own keys but seemed to enjoy being able to control what characteristics they used. Each student completed a rough key first, and students were encouraged to experiment with their information in order to determine what the most useful observations were. Every student had 3 others read their key for understanding. Time and care were spent on the drawings, and students used resource books to determine species and genus name. Many students accessed the Seaquarium for follow-up detailed.

Reflection on the need for classification systems demonstrated that students had a much clearer idea on why it is important to classify, and they were able to make connections to other aspects of day to day life where classification systems are used.

From classification we moved into adaptations and were able to use all of the organisms that had been classified to identify different adaptations and whether they were structural or behavioural.

NB. A math lesson was subsequently taught by a math teacher on drawing to scale. As well, we will be re-visiting marine studies in the spring when we will do transect studies at Cattle Point. At this time, creative writing will be incorporated.”

Observation Records

Station # _____

Group members: _____

Name of Organism:

Use your best observation skills and record everything that you observe in detail:

Colour _____

Shape _____

Texture _____

Hard or soft _____

Movement _____

How it acts _____

How it responds _____

Size (measure) _____

How fast or slow _____

Locations (bottoms, sides, or floating?) _____

Multi or uni-cellular _____

Body parts _____

Vertebrate or invertebrate? _____

Smells _____

Does it attach? _____

If so, how does it attach? _____

Other observations _____

Scientific Drawing (rough sketch)

Station # _____

Name: _____

Name of Organism: _____

Scale: _____

Scientific Drawing (rough sketch)

Station # _____

Name: _____

Name of Organism: _____

Scale: _____