



## Lesson Plan 4: Diversity and Classification

### Connections

Lesson Title: Diversity & Classification: Around the Seashore in Six Stations  
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Subject Areas:  Language  Fine Arts  Math  Science  PE/Health  Personal Planning  French  
 Socials

\*Previous Lesson: The Key to Classification  
 \*Next Lesson: Creature Features (L.A), Passport , Characteristics and Needs(Socials), Adaptations (Science)

\* Refers to lessons or exercises used by contributing teacher, not specifically to ones present yet in this manual

### SETTING THE SCENE

Theme: Diversity & classification  
 Goal (objective): To use careful observations to understand the diversity of living organisms; to produce an accurate scientific drawing based on the students' own observations; to produce a classification key for the animals they have observed.  
 Activity: In small, rotating groups, students will observe six living marine organisms. Each group will record as many characteristics as they observe (using a guide sheet brainstormed in an earlier lesson) and take a photograph; each student will make a rough sketch of the organism. In 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 from their rough sketches, photographs, and the seaquarium.  
 Connecting to Experience: Connecting to our hands-on experiences at Esquimalt Lagoon in September, when students observed and touched marine organisms as well as daily observations of the organisms in the seaquarium. Both real life experiences will help students understand difficult concepts like classification keys, similarities and differences, and characteristics and needs.  
 Initial Question: Why and how do we classify our world?

**Materials Required:**

- 2 of each of 6 marine organisms (Sea Lemon, Decorator Crab, Sea Star, Sea Cucumber, Sea Urchin, Clingfish – organisms may vary)
  - 6 tubs &/or glass finger bowls, 6 larger basins, ice, 6 research kits (with thermometers, & magnifying lenses), extra seawater, hand towels (one of each item at each table)
  - Observation template (1 per group, developed through brainstorming session with students) paper for sketches, pencils, cameras, reference books
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**Procedure:**

- introduction: Behavioural expectations & etiquette/respect for marine organisms reviewed and students divided into 6 groups with designated recorder(s) prior to lesson. In library/lab, quick review of etiquette, characteristics, observation skills and criteria of lesson.
- body: One group of students at each station with a designated recorder; detailed group observations based on observation template; individually, students draw rough sketch of organism (3min. – stress sketches should be based on what they actually see, not what they think they should see); rotate & repeat at minimum of four stations.
- close: Large group recap the experience; follow up with observations (at the Seaquarium), research, keys and formal drawings in the classroom.

## Reflection

Student: (Discussion) related to 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.

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Teacher: Where do we want to go from here? Future Directions and Strategies to get there. Variations, lead up.

Follow up took two 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 three others read their key for understanding. Time and care were spent on the drawings, and students used resource books to determine species and genus names. Many students accessed the seaquarium for follow-up detail.

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 the 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.

## Observations

Station # \_\_\_\_\_

noms: \_\_\_\_\_

Organisme: \_\_\_\_\_

*Notez toutes les observations en détail :*

Couleur \_\_\_\_\_

Forme \_\_\_\_\_

Texture \_\_\_\_\_

Dur ou mou \_\_\_\_\_

Mouvement \_\_\_\_\_

Qu'est-ce qu'il fait? \_\_\_\_\_

Taille (grand, petit) \_\_\_\_\_

vitesse (rapide/lent) \_\_\_\_\_

Où est-il (à la surface, au fond) \_\_\_\_\_

Les parties du corps \_\_\_\_\_

vertébré/invertébré \_\_\_\_\_

Odeur \_\_\_\_\_

Est-ce qu'il s'attache? \_\_\_\_\_

Si oui, comment? \_\_\_\_\_

D'autres observations \_\_\_\_\_

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**Dessin scientifique (croquis)**

**Station #** \_\_\_\_\_

**Nom:** \_\_\_\_\_

**Organisme:** \_\_\_\_\_

**Échelle:** \_\_\_\_\_

**Dessin scientifique (croquis)**

**Station #** \_\_\_\_\_

**Nom:** \_\_\_\_\_

**Organisme:** \_\_\_\_\_

**Échelle:** \_\_\_\_\_

## Observation Record

Station # \_\_\_\_\_

Group members: \_\_\_\_\_

Name of Organism: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Use your best observation skills & 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 (bottom, sides, or floating?)** \_\_\_\_\_

**Multi or uni-cellular** \_\_\_\_\_

**Body parts** \_\_\_\_\_

**Vertebrate/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:** \_\_\_\_\_