Sehome High Ocean Science

4-25-18

Timing: class starts at 12:25 and ends at 1:50 with 29 enrolled, plus a handful or so that will be able to get out of other classes. Second lunch will start at 12:30 and ends at 1pm. About 50 students have 2nd lunch but probably only a 10-12 will show up.

Key Goals: Local shellfish restoration, ocean acidification (OA), Salish Sea Challenge, hands on,

12:30-1 SECTION 1

- 10 min powerpoint (Who we are, Chuckanut Bay restoration, kelp and eelgrass restoration acting as a carbon sink, intro to OA, life cycle)
- 15 min demo stations:
    - life cycle
        - *Which life cycle stage is most vulnerable to OA and why?*
    - human smokestack
        - *What happened on the molecular level to cause the color change (include the chemical equation).*
    - live tank with microscope (Tetraselmis succia) to show food web
        - *What is one way that oysters change the environment around them?*
- 5 min regroup

1-1:50 SECTION 2

- 5 min Intro the second half (talk about ecosystem services)
- 20 min Food Web Foundations: Microscope and Stations
    - Plankton tow in well slides
        - *Include one detailed scientific drawing of a plankton that you find in the microscope*. Remember to include magnification.
    - Geoduck velligers (Panopea generosa)
        - *Where do velligers fit into the life cycle? Draw the life cycle.*
    - Diatoms
        - Freshwater and marine diatoms (prepared slide)
        - Marine diatoms photo
        - Thalassiosira pseudonana
            - *Where do diatoms fit in the food chain?*
    - Local Shellfish ID
        - Abalone and other shells
        - Clam ID necklaces
            - *Key, draw and label one shell. Include anatomical features of the shell and the genus and species name.*
    - Algae (Kelp)
        - Laminaria
            - *How does Kelp help to mitigate the effects of OA?*
- 15 min Dissection
    - Work in threes
    - Focus on mantle and shell building
    - Have gills and tentacles in dissecting scopes
    - Dissection WS
    - Things we need: hand lenses, hand sanitizer, forks, paper plates,

        - *Draw and label an oyster with all the organs.*
        - *Include a detailed drawing of gills or tentacles under the magnifyer and explain the function*.
- 5 min Clean Up
- 5 min Wrap up and Salish Sea Challenge and community connections
        - *Why is restoring native shellfish populations considered a priority in the Salish Sea?*

Videos for the teachers
Restoring Native Shellfish https://youtu.be/fEZfhftzUNw (4 min)
Ocean Acidification https://youtu.be/kxPwbhFeZSw (1.48 minutes
Acidic Waters Corrode NW Shellfish https://youtu.be/x7MpI9dZIjk (6 minutes)

Questions for teachers:
Does he have another class in there before 12:30? When can we come in to set up?

Things from storage:
- Carboy
- Plankton tow
- Live tanks
- hand lenses
- hand sanitizer
- Forks
- paper plates
- Abalone and other shells
- Buckets for clean up
- Clam ID necklaces
- Human smokestack kit (three sets for demos)
- Life cycle kit
- pH scale laminates
- Dissection kit
- Paper towels