Session 3

OBSERVATIONS OF MARINE PLANKTON AND FRESHWATER MACRO-INVERTEBRATES

(Highschool biolab)

Theme: Marine Plankton and Freshwater Invertebrates
Objectives:
- ✧ To demonstrate correct use of the microscope
- ✧ To demonstrate how to make a wet mount on a slide
- ✧ To find, observe and draw different marine plankton, and freshwater invertebrates
- ✧ To develop an appreciation for the role of phytoplankton in the system

Duration: 90 min

Set-up: plankton sample, pond sample – microscopes and lab equipment set up

ACTIVITY	TIME	EQUIPMENT
Students walk with teacher to high school biolab where meet Conservancy team **Welcome students to the biolab and introduce team of volunteers -** Distribute field journals. Review of pages to use for session 3. Brief review of connection of sessions. Session 3 looking at invertebrate life (plankton in marine, macro invertebrates in freshwater). **Setting the context – start with a crisis** For example – use status and condition of killer whale populations in region – consider their toxicity, what is the role that marine plankton plays? **Intro in lab:** a) Review/introduce correct use of microscope (2 types). b) Review/introduce how to make wet slide. c) Introduction to plankton – (microscopic for most part [jellyfish are visible with eye], float in currents – drifters [although zooplankton can move vertically self propelled] – includes phytoplankton [=primary producers], and zooplankton	**5 min** **15 min**	**Plankton sample** **Microscopes, pipettes, slides, slide covers, Petri dishes, turkey basters** **Plankton field guide** **Freshwater invertebrate field guides (lab copies)** **Pond sample of freshwater macro invertebrates**

ACTIVITY	TIME	EQUIPMENT
[=consumers] – some zooplankton are larva forms [crab, mussels, clams, fish, crab, etc.] and some are adult form [jellyfish] – phytoplankton absorb much of atmospheric CO_2 [use 3 billion tons annually] therefore have a role to play in global climate change, also produce significant amount of O^2 for ocean life and terrestrial life. Phytoplankton dominant significance to ocean food web. Millions of years of dead phytoplankton have created fossil fuels.)		
Activity: Students make wet slides from plankton sample. Find, observe and draw phytoplankton and zooplankton. Students are encouraged to find and draw at least one example of: diatoms, dinoflagellates, and a zooplankter. Principle to consider: *the greater the surface area of an organism relative to its volume, the greater its friction as it moves through the water and so the slower it sinks.* Students can also observe larger freshwater invertebrates, using dissecting microscopes and Petri dishes to look more closely. **Clean lab and return equipment**	**40 min** **10 min**	**Petri dishes**
Reflection: Review of findings. Consideration of principle – how do phytoplankton maximize their surface area? How are phytoplankton connected to you (or killer whales)? And how do you influence them (and thus killer whales)? **Return to school.**	**10 min** **5 min**	