

Invert Investigator Script

- 1) Field Station Setup
 - a) Acquire volunteers
 - i) At least three volunteers are needed during larger field days (i.e., spreading students out at tables and doing sampling in a pool, riffle, and a glide)
 - b) Prepare volunteers
 - (1) Email or handout the Invert Investigator curriculum (Teacher, Student, Resource Specialist Sections, worksheet)
 - (2) Outline tasks prior to student arrival including daily setup and breakdown
- 2) Field Lesson - Objectives
 - a) Introduction of resource staff and volunteers
 - i) Name/Agency
 - ii) Resource specialty and relationship to your job
 - iii) Review activity (discuss when and why you might collect)
 - b) Collect macroinvertebrates - Get into water right away
 - i) Break into three groups (separate students by habitat types, i.e., pool, riffle, glide)
 - ii) Assign student groups to station volunteer
 - iii) Explain water /wader safety
 - iv) Explain how to use equipment
 - v) Guide students (lead them with questions during the collection rather than telling them)
 - vi) Bring collections back to tables
 - c) Macroinvertebrate Analysis
 - i) Groups move to tables
 - (1) Sort collections of macroinvertebrates
 - (2) Use aquatic insect keys, microscopes, and student worksheet
 - (a) Identify, quantify, classify macroinvertebrate families and species
 - (b) Record 3-5 species on worksheet
 - (c) Describe life history forms and interesting fact about feeding, mating, and metamorphosis (complete and incomplete)
 - (d) Discuss Functional Feeding Groups (scrapers, grazers, shredders, etc.,) and the River Continuum (change, and Water Quality Tolerances)
 - (e) Discuss interesting info about the macroinvertebrate groups, their life history – how they mate, feed, etc.
 - d) Final Field summary (last 15 min) – Take Aways
 - i) Discuss answers to questions listed on the Resource Specialist sheet, Including:
 - (1) Differences in species & numbers between each group/habitat type and by water quality tolerance levels?
 - (2) Ranking the water quality using macroinvertebrate surveys
 - (3) Life history stages of development (complete or incomplete metamorphosis)
 - (4) Role of geomorphology in aquatic habitat and species of macroinvertebrate

- ii) Watershed wonders– Macroinvertebrate linkages to riparian/water quantity-quality/fish preybase
 - (1) Contribution to the ecosystem (preybase, food pyramid, water quality indicator)