



## Science Explorers Course Outline

### Spring 2012 session details

#### Grades 1-3

Topic: ~~Don't~~ Bug Me (7 weeks); April-May 2012

Max enrollment: 20 students/class

#### Course outline:

##### Week 1: **Spineless species**

*An introduction to invertebrates and the biological classification of animals. Bug hunt (catch and release); ethics of animal studies.*

**Examples of projects and experiments:** Making Bug kits; Identifying bugs; Bugs v/s Insects; Worm bait

**Skills learned and practiced:** sorting, classifying, identifying, analyzing, catching and releasing, observing and recording

##### Week 2: **The Lady is a beetle**

*Garden helpers. Ladybugs in space. Study the anatomy of ladybugs.*

**Examples of projects and experiments:** Making sweepnets; temperature experiment; building ladybug homes to take-home; Lost Ladybug Project to try at home

**Skills learned and practiced:** sorting, classifying, identifying, analyzing, observing and recording

##### Week 3: **The ticket to crickets**

*An introduction to species in the Orthoptera order of insects. Study the anatomy of crickets.*

**Examples of projects and experiments:** Cricket behavioral experiment; small group dissection; microscope examination (students who are not comfortable performing the experiment may participate by observing the dissection and viewing slides or specimens under the microscope)

**Skills learned and practiced:** sorting, classifying, identifying, analyzing, dissecting, using microscopes, observing and recording

##### Week 4: **Sow bug, a land-lubbing crustacean**

*What's a sow bug? Examining sow bugs, drawing what you see and identifying and understanding their anatomy. How can a bug be related to a crab?*

**Examples of projects and experiments:** Conduct a habitat experiment; Design your

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own experiment using any 2 factors and investigate (e.g. light and surface)

**Skills learned and practiced:** sorting, classifying, identifying, analyzing, observing, investigating and recording. Microscope examination

Week 5: **Metamorphosis**

*Transformations from egg, to larva, to insect. Study caterpillars, butterflies, praying mantis, silkworms. Ants and Lacewings. Understand metamorphosis in other animals and compare.*

**Examples of projects and experiments:** Butterfly life cycle; Praying mantis lesson experiment. Write your own metamorphosis story or draw pictures about one of the invertebrates.

**Skills learned and practiced:** sorting, classifying, identifying, analyzing, catching and releasing, observing and recording.

Lesson 6: **A Worm's world**

*Ways of the worm. Study worm anatomy. Worm bait, Worm composting. Snail bait.*

**Examples of projects and experiments:** Earthworm dissection. Behavioral experiments.

**Skills learned and practiced:** classifying, identifying, analyzing, observing and recording. Microscope exam.

Week 7: **A Snail's tale**

*An introduction to mollusks. Snails v/s slugs. Snail collection and observation.*

**Examples of projects and experiments:** Snail observation. Study and set up of the snail homing experiment, which is part of an international citizen science project. How and what snails eat? Test snails' reactions to particular textures, tastes and smells.

**Skills learned and practiced:** classifying, identifying, analyzing, measuring and calculating speed, observing and recording.

**\*\*Depending on how much time we have at the end of the session or on the level of interest in the topic, we may teach about bugs at the bottom of the food chain (e.g. the bug-eat-bug world, plant-eat-bug world etc). Students will be encouraged to think what would happen to the food chain if there weren't bugs....**