MIND TREKKERS
Small Animal Anatomy Lesson Plan

Amount of time Demo takes: 4-6 min
Materials:
   a. Sycon Sponge
   b. Hydra
   c. Freshwater mussel
   d. Snail
   e. Earthworm
   f. Crayfish
   g. Gonionemus
   h. Snail
   i. Lubber Grasshopper
   j. Honey bee worker
   k. June Beetle
   l. Butterfly
   m. Spider
   n. Sea Star
   o. Perch
   p. Frog
2. Box of extra safety-tip push pins (reusable)
3. 2 dissection kits (reusable)
4. Diaper pad to be used as liners (3-4 per event)
5. Aluminum trays (3-4 per event)
6. Tongs (reusable)
7. Gloves for participants and Mind Trekker volunteer
8. ½ long table for space
9. Garbage bag for waste
10. Carolina Dissection Instructions and Diagrams 3 ring binder (reusable)
11. Clorox wipes to clean equipment and table

Set up instructions:
1. Set out aluminum trays and line with disposable diaper pad.
2. Set out dissection kits and gloves.
3. Prepare at least one animal ahead of time to have something ready for participants to see.
4. Set up an animal that participants can help/watch dissect.

SAFETY!
1. Caution -- sharp tools. Cutting and dissecting should always be handled by Mind Trekkers only. Students are welcome, however, to use other tools to gently explore the specimens.

Lesson’s big idea
● Essential systems for living creatures include: respiratory system, circulatory system, and a digestive system. Each animal kingdom has accomplished some version of respiration, circulation and digestion to support life.
● Comparing the anatomy of animals included in kit, participants will see similarities and differences in animal anatomy and physiology.

Background information
1. Note: this demonstration can be researched as thoroughly or generally as the volunteer wants. There are myriad possible discussions and discoveries to be made with students about all the body systems, organs, muscles, and their implications. Look some things up before you present
this demonstration -- you will discover some truly amazing things!

2. **Anatomy** is the study of the shapes and structures of organisms and their parts and how they work together as a system. The **circulatory system** moves essential nutrients and gasses (frequently including blood) throughout the system. The **respiratory system** is responsible for gas exchange throughout the system. The **digestive system**, from mouth to anus, moves and disperses nutrients that are processed as they move through an organism; this system also disposes of toxins and waste.

**Instructional Procedure**

1. Each animal has detailed specific instructions that come with the kit. Please refer to the 3-ring binder that includes dissection instructions and labeled diagrams.
2. Set out the instructions and labeled diagrams for the animals you choose to work on.
3. Pin parts of the animals open as you dissect throughout the day to share with participants as they come and explore.
4. Allow participants to explore within the specimens. Give them gloves and a probe (not a scalpel!). Give clear instructions to young participants using tools and supervise attentively.
5. Keep tools clean throughout the day and when you clean up.

**Assessment, Sample questions you can ask:**

1. How is the digestive system of each animal similar? Answers will vary based on animal.
2. How does a fish breathe compared to a frog? Fish breathe through gills that filter out the dissolved oxygen in water. Their gills have fine blood vessels that move the oxygen through their bodies. Frogs can breathe through their nose and use their lungs and they can also breathe through their skin.

**Clean Up**

- Dispose of gloves, dissected animals, diaper pads and aluminum trays if they are ruined.
- Clean: aluminum trays if still ok, all tools, push pins, anything that was contaminated by animals that will be reused and the table you dissected on with clorox wipes. Wash with soap and water if necessary.
- If there are animals that remain unused in the zoology exploration kit, make sure they are sealed in a watertight container, wrapped up and packaged to prevent leaking during travel.

**References**

- Carolina Science Teachers Manual, included in kit inside the 3 ring binder.
- Frog Facts [http://www.learner.org/jnorth/search/FrogNotes1.html](http://www.learner.org/jnorth/search/FrogNotes1.html)

**National K-12 Science Standards**

- K-12 Life Science Content Standard C Living Systems