**Living Things Mini-Unit**

**Experience One:** Students observe one type of animal (mealworms or earthworms) on plastic plates using hand lenses. They discuss and draw their observations of the animals’ physical charateristics and behavior. They begin to share ideas about how its different parts function and to make tentative claims about how the animal uses it external parts to eat, move, and take in information about its environment. With teacher support, students record their observations and claims in a science notebook or on a class chart.

**Experience Two:** Students collect, record, and discuss their observations and ideas about a second animal. Teachers draw out children’s in and out-of-school experiences with the two animals they have investigated in order to provide more data on which to base claims. For example, students in one classroom who had previous investigated lady bugs made a claim that mealworms were actually insects and not worms at all. Students in another classroom who had collected earthworms at home were able to share their observations of how worms moved in their natural habitat.

**Experience Three:** Students observe two of the animals side by side in order to make direct comparisons of their external parts and claims about their functions—how the animals’ parts help them survive, grow, and meet their needs in their preferred environments (Soil for earthworms and red wrigglers, and oat bran for mealworms).

**Experience Four:** Students do an investigation to answer a specific question such as *How does this animal respond to light?, Which substrate does this animal prefer?, or What food does this animal prefer?* In this experience, students make predictions based on their previous observations of the animal, conduct a focused investigation, and collect, record, and compare their data. They also share their ideas about how the behavior they observed (an animal avoiding light for example) might help the animal survive. In other cases the investigation raises further questions—*How does an earthworm find the pile of soil on a plate when given a choice of different substrates?*

**Experience Five:** Based on their previous observations and research, students create an appropriate indoor habitat for one of the animals so they can continue to investigate and observe it over time. Several teachers created compost bins with their students in order to maintain and observe red wrigglers over a period of several weeks.

**A note about safety:** Mealworms, earthworms, and red wrigglers pose minimal safety concerns for elementary students and can be easily and safely handled. Each of the organisms should be kept in a container from which they cannot escape, such as a small plastic aquarium with a lid. The animals can be placed on a plastic plate with a lip so they can be observed by individuals or small groups of students. Plastic ensures that the surface is slippery enough so that none of these organisms would be able to climb the sides. Also useful is a “bug box,” an enclosed plastic container with a built-in magnifying lens such as can be found at:

[https://www.nature-watch.com/](https://www.nature-watch.com/bug-box-with-magnifying-lid-p-1194.html?cPath=142_150&utm_term=Bug+Box+with+Magnifying+Lid&utm_source=Google+Base&utm_medium=Shopping+Portal&utm_campaign=Nature-Watch&gclid=Cj0KCQjwpsLkBRDpARIsAKoYI8zA1iMHEO1oHZJEB8VLrbyIQLZgk08M_ThC6UcLbz_7cQZXc_bzDWEaAqyeEALw_wcB) or <https://www.carolina.com/>

**Ethical considerations**: Students were taught to be respectful of these organisms. The teachers modeled how to observe and handle them, and posted safety rules in the classroom. Individual animals were observed for limited periods of time and a spray bottle was always available to moisten the earthworms and red wrigglers as needed.