



Understanding Ants

Ants, ants everywhere...



Ants are everywhere! There are over 12,000 known species of ants around the world. There are [92 known ant species](#) in Oregon. One of them is even called the *stigmatomma oregonense*. Ants live in colonies, where the ants have different roles like collecting food, taking care of the young, being a warrior ant or being the queen that lays eggs. Some colonies can have millions of ants in them and have nests that go deep into the ground. Even if you don't see any ants crawling around, you can find some of their nests by finding little dirt volcanoes coming out of the ground. This photo below, is of a very large leaf-cutter ant colony. These ants aren't found in Oregon, but they are one of the most fascinating farmers in the world.



Photo by Shaners Becker from Seattle, USA - ant nest excavation



Ant nests can be very complex. The picture on the left shows the shape of the inside of an ant nest in Washington state. Imagine that all those little holes and lines were trails in the nest and holes to store eggs or food.

Watch this awesome video to see [leaf-cutter ants in action!](#)



EXPERIMENT: Tuna vs. Sugar

Diets and Adaptations

So back to today's activity....What could tuna and sugar possibly have in common? For starters, you probably don't want to eat them together...Tuna and sugar represent 2 types of food sources available to animals. You can eat the tuna, which is a **protein**, or meat source. Or, you can eat the sugar, which comes from the fibers in plants. An animal's diet can fall under **herbivore** (they only eat plants), **carnivore** (they only eat meat proteins) or **omnivore** (like humans, they eat a mix of plants and animals).

If all animals were carnivores, there may not be enough meat to go around. If all animals were herbivores, the plants would be pretty stressed out. Animals living in the same area have **adapted**, or made changes in their behavior, so that they are not competing as directly for food. It would be like if everyone in your family ate the exact same things for breakfast, you would need way more of it in the house, than if 1 person ate cereal, another ate toast and another ate eggs. In today's experiment, we are going to test what the local ants around us like to eat.

You will need:

- 2 tablespoons of sugar in a small bag
- 2 spoons
- 1 can of tuna (or other protein like cut up chicken or beef)
- 4 index cards (or 1 piece of paper cut into 4 pieces)
- Observation journal
- Scotch tape (optional)
- Magnifying glass (optional)
- Pencil
- Watch or phone to keep time
- A book, craft supplies (*something to do while you're waiting for the ants*)



Instructions:

1. Find somewhere away from your house (like a park or field) to lay out your experiment. You don't want to be near your house, because you don't want to attract ants to your kitchen!
2. Once you find a place where you will be able to sit quietly, lay out 2 index cards in the grass or weeds.
3. Place 1 spoonful of sugar on 1 card, and 1 spoonful of tuna (use a different spoon) on the other.

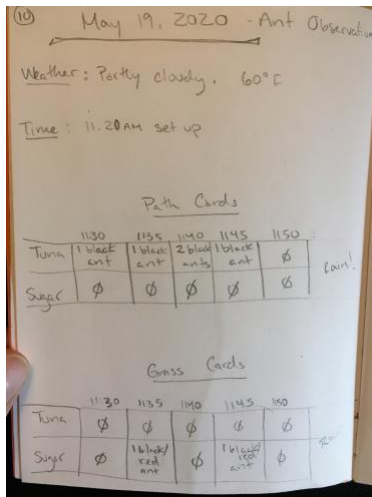


4. Next, find a different habitat, like a sidewalk, or a path, or a flower bed and lay out 2 identical cards with sugar and tuna. This way you are keeping everything the same, **EXCEPT** changing the location (grass vs. path for example). This is a common way to study if one thing (or variable) is responsible for a change in results.



5. Record the time that you started your experiment and when you need to return 10 minutes later (so if you started at 10:30am, then you should check your cards at 10:40am).

6. While you are waiting, you can create a data table in your notebook. This is a way that scientists keep track of their observations. I took note of the weather, the time I started, the date and then made a table for each card location.



Path Cards

	10:40	10:45	10:50	10:55	11:00
Tuna					
Sugar					

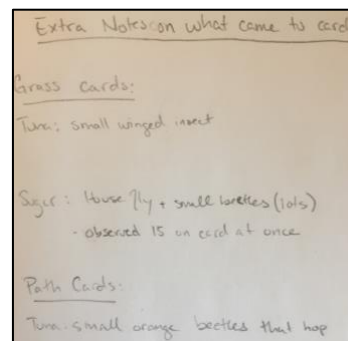
Grass Cards

	10:40	10:45	10:50	10:55	11:00
Tuna					
Sugar					

7. When the 10 minutes have passed on the first cards, go back and examine them. If you are lucky at least 1 of the cards will have ants on it!



8. Take a moment to observe these ants in your journal. If you would like, you can take 1 (just 1) and tape inside your journal. This way you can keep track of its color and size more accurately. After the first 10 minutes, my path tuna had an ant on it, and after another 5 minutes my grass sugar had an ant on it. I recorded these observations in my journal.
9. Check your other cards and repeat every 5 minutes, keeping track of which ants were attracted to tuna or sugar, and whether they were found in the grass or on the path. Did the same ants show up on tuna and sugar? Did the same ants show up on grass and on the path?
10. You may also notice that other insects are attracted to this meal. I noticed a lot of small orange hopping beetles on my grass tuna, but none showed up on the path. You can take notes on this in your journal.



DIGGING DEEPER! You've just studied ant behavior and what foods they are interested in. Scientists will run similar studies to determine the ways that wildlife are using the food that is available in an ecosystem. Food availability is an important thing that will decide how many animals can live in one place and how big their populations will get. Even for us humans, we have to produce a lot of food on our planet in order to feed everyone!

Thanks for conducting science with me for this Home Explorer activity from Umpqua Watersheds Education Program.
Join me for new activities posted every week!

- Ms. Robyn

