



# The Missing Ingredient



**Humus** is natural material that was alive, died, and has now decomposed to create nutrient-rich soil which helps plants grow. Dead leaves, bark, animals, and even animal poop help to form humus. Decomposers such as fungi, bacterium, and especially worms help break down the material to form the new soil. Some scientists think humus helps the soil become more fertile, while others think it helps prevent diseases. Either way, it makes the soil more healthy!

**Circle the materials you think could help form humus.**



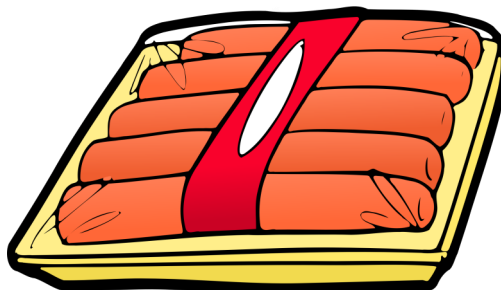
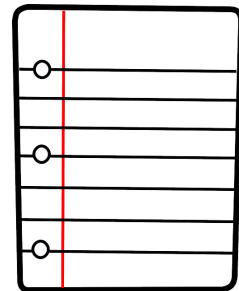
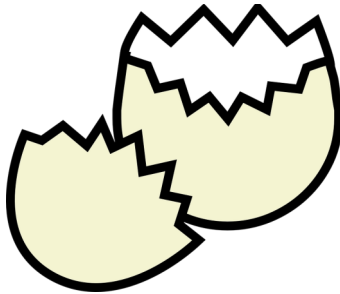
# Vermiculture

**Vermiculture** is when worms break down organic material such as grass clippings, dead leaves, or vegetable or fruit scraps to create “worm castings” or worm poop. This worm manure is rich in nutrients that plants and animals need.

**Compost** is the product when people create humus either by using worms or a composting system/bin.

**Just like you,** worms like some foods and don't like others. The easy way to remember what they like are the colors brown and green. Browns are non-food items like coffee grounds, paper, soft cardboard, or dry yard clippings. Greens are food items like vegetables, fruits and fruit peels, or plain pasta. Things worms do not like include onions, potatoes, citrus fruit like lemons or oranges, dairy, or fatty foods like meat.

If you started composting, what items below would you put in the bin?



# Let's Review!

1. Looking back to Lesson 1, which soil type was the best at holding on to water and nutrients? Why is this important? How is this harmful?

2. In Lesson 2 we did some soil experiments. What was the best soil mixture for Northern Virginia, why?

3. In Lesson 3 we learned about the missing ingredient of humus or compost. Why are these ingredients so important?

4. Finally, what was the most interesting idea you learned?