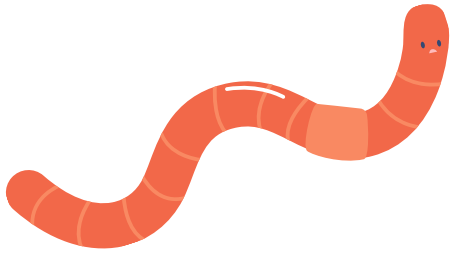
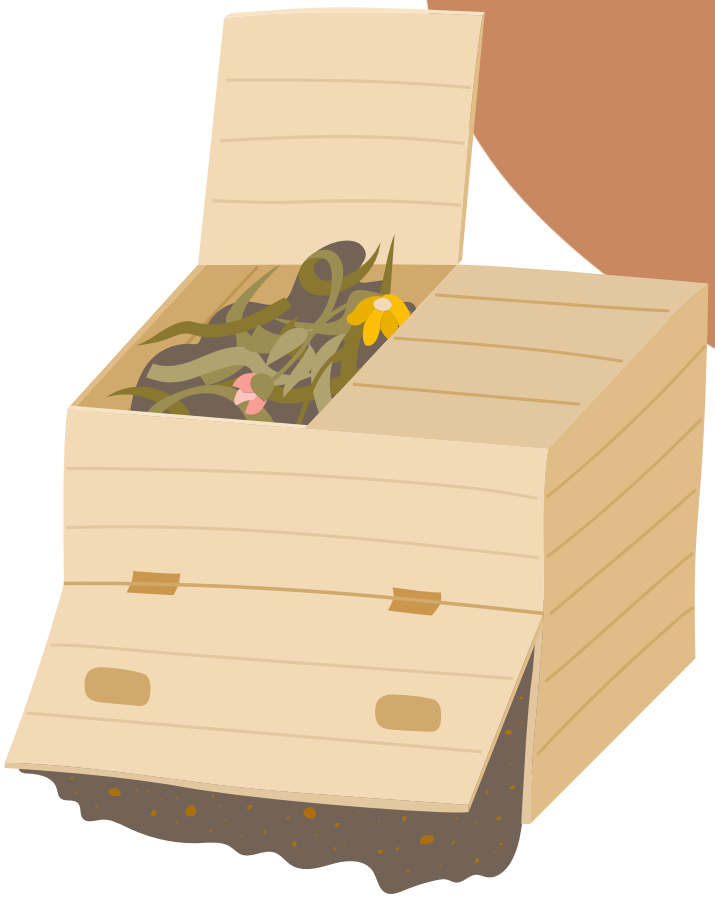
Decomposition

Activity Pack

Ecology
Sustainability
Math





Learning about decomposition can be a great way to introduce kids to ecological processes, sustainable practices, and more! These decomposition-themed activities are designed to jumpstart conversations and inspire curiosity and wonder for our natural world!

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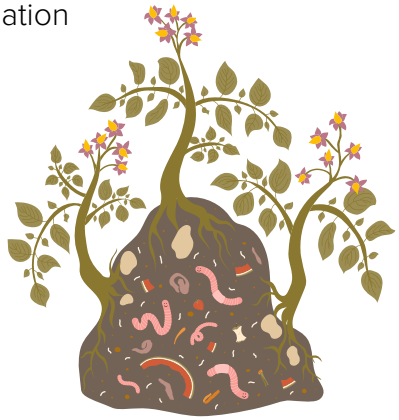


Watson Gloves first started as a two-person shop selling gloves to Vancouver's dock workers when they opened their doors in 1918. Today, they've grown across North America distributing quality gloves for work, home and play. Their glove innovations play a large part to their success, such as their push for more sustainable products into the market with gloves made from post consumer recycled plastic bottles. Since 2020 they have diverted over 3million plastic bottles destined for landfills. Product categories range from home improvement, gardening, construction, welding, automotive, recreational, and more with over 2,000 different styles offered. Learn more at www.watsongloves.com and follow Watson Gloves on Instagram, Facebook and Twitter.

For 40 years, KidsGardening has led the youth gardening movement by creating opportunities for kids to play, learn, and grow through gardening. The national nonprofit provides grant funding, inspiration, community connections, and original educational resources to reach more than 3.8 million kids each year. Learn more at KidsGardening.org.

Ecology: the study of living organisms and their relationships with one another and their physical environments.

Who or What are Decomposers?

Decomposition is the process of breaking down organic material into smaller molecules, and Decomposers are the organisms that do it! Decomposers use dead plants and animals as food. They're vital to ecosystems because they release locked up nutrients to be used again by plants. Decomposers can be any animal that scavenges, invertebrates like earthworms that eat decaying matter, microscopic bacteria and fungi - molds, mildews, mushrooms, lichen, rusts, and smuts.

Make a Log Hotel

Background

As the remains of a once-living tree, logs are a prime habitat and food source for decomposers. Logs can decompose faster or slower depending on how hospitable the moisture levels and temperature of its local environment are to decomposers. Decomposition occurs faster in warm and humid environments where decomposers thrive, and slower in cool/dry climates which are more challenging. By positioning a log in a convenient outdoor location, you can create an ecological observation station for kids to observe the decomposition process.

Tip: If you're located within walking distance of a natural space, establishing a log hotel might not be necessary. Take a nature walk to locate a fallen log already in the perfect spot and return to observe its changes throughout the year.

Instructions

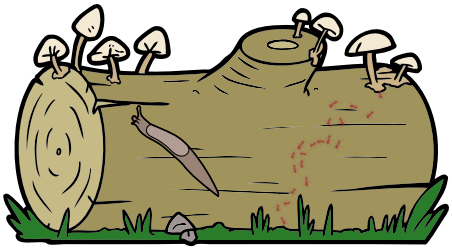
1. Decide where to locate your log hotel. Pick a shady spot outside on bare earth that's easily accessible for return visits.
2. Head to a natural space to collect a fallen log or enough branches to make a pile.
3. Deposit your log or wood pile in the desired spot. Adding a sign helps deter others from clearing the hotel, and encourages them to stop and enjoy it.
4. Collect guesses about who might check into the hotel, and how long it will take them to decompose the log.
5. Have kids journal their log hotel observations on every visit, always noting the date, time, and temperature, along with any animals, fungi, and plants noticed.

Log Hotel Observations

Name _____ Date_____ Temperature_____

What does your log hotel look like today?

What do you notice about your log hotel today?



Sustainability:

The idea that goods and services should be produced in ways that do not use irreplaceable resources, damage the environment or cause excessive waste.

Humans have used incredible ingenuity to alter the natural environment more than any creature in Earth's history. Some of these alterations have led to improved health, technological marvels and beautiful art. But some of these alterations have led to the Earth's systems being out of balance, its natural resources dwindling, and massive amounts of long-lasting waste. Allowing kids to experience the mechanics of organic decomposition and the longevity of inorganic material creates a lasting impression, and the potential for a lifetime of sustainable choices.

Organic vs. Inorganic Waste Investigation

Materials:

1. Two large glass jars
2. A few cups of soil
3. A selection of organic waste that will fit in one jar (e.g. fruit or vegetables. No meat or dairy)
4. A selection if inorganic waste that will fit in one jar (e.g. plastic bottle caps or broken pieces)

Fact:

- It can take a plastic product anywhere from 20 to 600 years to decompose fully.

Instructions:

1. Fill both jars about one-third full with soil.
2. Chop organic material into small chunks and layer on top of the soil in one jar.
3. Place plastic pieces on top of the soil in the other jar.
4. Spray both with a small amount of water to aid decomposition, and close the lids. Remove the lids once a day to aerate.
5. Form a hypothesis - Ask: What will happen to the organic and the inorganic material over the course of a week?
6. Record observations for both jars each day using the activity worksheet.
7. At the end of the week the food should be rotting and the plastic unchanged. Form a conclusion about the rates of decomposition for each type of material.

Making Connections:

- Discuss the role bacteria and fungi play in decomposing organic material.
- Introduce the concept of composting with kids and try it out together.
- Research biodegradable alternatives to commonly used plastic products.

DECOMPOSITION INVESTIGATION LOG

NAME: _____ DATE: _____

HYPOTHESIS:

What do you think will happen?

Day 1:

Day 2:

Day 3:

What do you see happening?

Day 4:

Day 5:

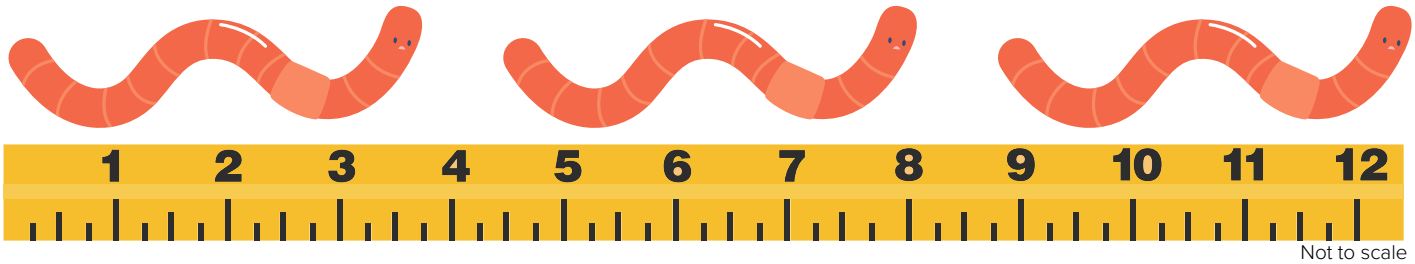
Day 6:

Day 7:

CONCLUSION:

What do you now know?

Math: Measuring Decomposers



Not to scale

Animal decomposers come in many shapes and sizes! Use this handy key to create a measuring math activity that suits your needs. Variations could include:

- Graphing out the lengths on a piece of paper
- Ordering them from smallest to largest
- Drawing the decomposers to scale
- Measuring out pieces of yarn or string to the length of each decomposer
- Picking out one group and drawing and measuring as many species as you can find within the length range.
- Using both metric and imperial units and so much more

Size Ranges of Common Animal Decomposers

- Earthworms - From 2in (5cm) to 14in (35.5cm) in length
- Red Wigglers - From 2in (5cm) to 6in (15cm) in length
- Millipedes - From 1in (2.5cm) to 11in (30cm) in length
- Termites - From 1/8in (.3cm) to 1/2in (1.25cm) in length
- Pill Bugs - From 1/4in (.6cm) to 1/2 in (1.25cm) in length
- Beetles - From 0.03in (1mm) to 3.9in (10cm)
- Ants - 0.08in (2mm) to 1.6in (4cm)
- Slugs - 0.6in (15mm) to 11.8in (30cm)
- Snails - 0.01in (.5mm) to 15.5in (39cm)

Fun(gi) Fact:

The largest decomposer in the world is Malheur National Forest's Honey Mushroom! The mycelium and caps of this organism cover nearly four square miles of forest (3,726563 sq m) and is estimated to be more than 8,650 years old.

Math: Decomposing Numbers

Name: _____ Date: _____

Solve the subtraction equation to help these worms decompose food!
Write your answer as a number after the equal (=) sign.