

A FREE CLASSROOM SERIES

The Nutrient Loop

Five hands-on worksheets that teach kids how nature turns everyday scraps back into the nutrients that grow tomorrow's food.

Grades 3–6

What's inside

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Can It Compost?

Sort everyday items into compost vs. trash & recycling

2

Meet the Decomposers

Match the worms, fungi, and microbes to the job each one does

3

From Scraps to Soil

Put the five stages of decomposition in order and track the heat curve

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Build a Backyard Compost Bin

Sort browns & greens, then label a working bin

5

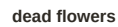
Composting Myths: True or False?

A 10-question quiz that busts common composting misconceptions

Help nature turn yesterday's scraps into tomorrow's soil

Date: _____

Composting turns food and plant scraps into rich soil that helps new plants grow. Look at the items below. **Circle** the ones that can go in the compost bin, then **write each item** in the correct column at the bottom of the page.

 **Compost it!**

Rubbish or recycle

DID YOU KNOW? Almost half of what we throw away could be composted instead. When food scraps go to landfill they're wasted — but in a compost bin, worms and tiny microbes turn them back into nutrients that grow next year's food!

Meet the Decomposers

The tiny team that turns scraps into soil

Name: _____

Date: _____

Nothing breaks down scraps by itself — a whole team of living helpers does the work. Read what each decomposer does on the right, then write its **number** in the blank box next to the job it matches.

1



Earthworm

2



Fungi (mold)

3



Bacteria

4



Pillbug

5



Beetle

6



Nematode

Backyard check: which of these decomposers have you spotted before — in a garden, under a rock, or in a park? Where?

DRAW YOUR FAVOURITE DECOMPOSER HERE

What's my job?

☐

A I'm too small to see, but there are billions of me. I get to work fast, breaking down soft food scraps in the very first days.

☐

B I tunnel through scraps and eat them, then leave behind rich droppings called castings that plants love.

☐

C I hunt other small decomposers and help keep everything in the system balanced.

☐

D I grow thread-like strands that can break down tough things, like woody stems and dead leaves, that other helpers can't chew.

☐

E I munch on soft, rotting plant material and help turn big pieces into smaller, easier-to-break-down ones.

☐

F I'm a worm so tiny you'd need a microscope to see me, and I feast on the bacteria and fungi living in the scraps.

Word bank: earthworm · fungi (mold) · bacteria · pillbug · beetle · nematode

Bonus: which decomposer do you think is the most important to the whole team? Why?

DID YOU KNOW? A single tablespoon of finished compost can hold more living organisms than there are people on Earth — most of them bacteria and fungi too small to see without a microscope.

From Scraps to Soil

Follow the five stages nature uses to turn waste into nutrients

Name: _____

Date: _____

Each card below shows one stage in the process, in mixed-up order. Read the clue for each numbered step, find the card that matches, and write its **letter** in the box. Then write the stage's name using the word bank.

A		B		C		D		E	
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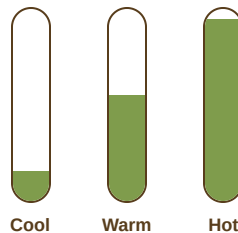
What happens, in order

- Food scraps and dry browns just got added together — it looks like a jumbled mix of yesterday's leftovers and dead leaves. ☐ _____
- Billions of bacteria wake up and get to work fast. So much energy is released that the inside can get as hot as a cup of tea. ☐ _____
- The temperature starts to drop. Turning the mix brings in fresh air so decomposers can keep breathing and working. ☐ _____
- Things slow down. Worms, beetles, and other bigger decomposers move in to finish breaking down what's left. ☐ _____
- It's dark, crumbly, and smells like a forest floor after rain — rich in nutrients and ready to feed new plants. ☐ _____

Word bank: Fresh Start · Heating Up · Cooling & Turning · Curing · Finished Compost

The heat curve

Compost doesn't just sit there — it warms up, cools down, and settles as decomposers do their work. Using the key below, shade in each thermometer to show whether that stage runs cool, warm, or hot.



				
Stage 1	Stage 2	Stage 3	Stage 4	Stage 5

DID YOU KNOW? A working compost system can heat up hotter than a warm bath — all from the energy released by billions of microbes eating at once. That heat is even strong enough to kill weed seeds.

Build a Backyard Compost Bin

Good compost needs the right mix — not just any scraps will do

Name: _____ Date: _____

A healthy bin needs two kinds of material: **browns** (dry, carbon-rich stuff) and **greens** (fresh, nitrogen-rich stuff). Sort the items below, then use what you learned to label the bin.



dry leaves



banana peel



twigs



coffee grounds



cardboard



grass clippings



shredded paper



apple core



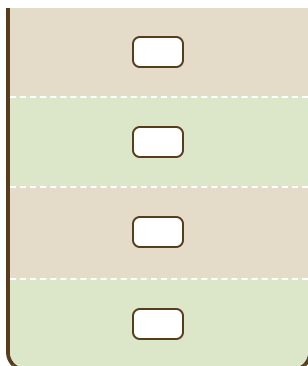
straw



carrot scraps

Browns DRY · CARBON-RICH

Greens FRESH · NITROGEN-RICH



Write B (browns) or G (greens) in each layer

Now build it!



Layer it. Start with a browns layer at the bottom for drainage, then alternate browns and greens as you add material.



Add water. The mix should feel about as damp as a wrung-out sponge — not soggy, not bone-dry.



Leave room for air. Decomposers need to breathe too — turning the mix every so often keeps air moving through.

DID YOU KNOW? A good rule of thumb is about 2–3 parts browns for every 1 part greens. Too many greens and a bin can turn slimy and smelly; too many browns and it barely breaks down at all.

Composting Myths: True or False?

Test what you know — then flip the page to check your score

Name: _____ Date: _____

Read each statement below and **circle TRUE or FALSE**. Some of these are things people believe about composting that just aren't true!

1	A well-run compost bin always smells bad.	TRUE	FALSE
2	Banana peels and apple cores can both be composted.	TRUE	FALSE
3	Meat and dairy belong in a classroom or backyard compost bin.	TRUE	FALSE
4	Worms and other tiny creatures help break scraps down.	TRUE	FALSE
5	Finished compost looks and smells like plastic.	TRUE	FALSE
6	Plastic and styrofoam will break down in a compost bin if you just wait.	TRUE	FALSE
7	Finished compost can be ready in weeks or months, not hundreds of years.	TRUE	FALSE
8	Grass clippings and dead leaves can both go in a compost bin.	TRUE	FALSE
9	A compost bin needs both "browns" and "greens" to work well.	TRUE	FALSE
10	Composting only helps the environment — it doesn't help people grow food.	TRUE	FALSE

How'd you do?

9–10
Compost Expert

6–8
Nutrient Apprentice

0–5
Just Getting Started

Bonus: pick one FALSE statement above and explain, in your own words, why it isn't true.

DID YOU KNOW? A backyard bin can turn scraps into finished compost in as little as two to three months with the right mix of browns, greens, water, and air.

ANSWER KEY (NO PEEKING!)

6-F 7-T 8-T 9-T 10-F

1-F 2-T 3-F 4-T 5-F