CLASSROOM VISIT 1 · FIRST & SECOND GRADE · 40 MINUTES

Soil Is Alive!

A read-aloud and a live microscope look at the tiny life that helps plants grow.



THE BIG IDEAS

Soil is alive. **Roots need friends.** **Good things take time.**

The book

Dr. Dirt and the Stubborn Seed, by Dr. Dirt. A class plants a "magic" seed that won't grow. Dr. Dirt's microscope shows the soil has no life in it. Once the soil gets food and fungal friends, and the children wait patiently, the seed grows.

Students will

- Say that soil is home to living things too small to see
- Watch real microbes and roots on the screen and describe what they notice
- Connect the story's message to what they see under the microscope
- Draw one thing they saw and decide if it is alive

New words

- **Microscope:** a tool that makes tiny things look big
- **Microbe:** a living thing too small to see with our eyes
- **Fungal threads:** tiny strings that carry food to roots
- **Root:** the part of a plant that drinks and holds on
- **Lepo:** Hawaiian for soil or dirt

Connects to

- **NGSS 2-LS4-1:** observe living things in different habitats
- **NGSS 2-LS2-1:** what plants need to grow
- **Common Core RL.1.2 / RL.2.2:** understand a story's central message
- **SL.1.1 / SL.2.1:** collaborative conversations

THE 40 MINUTES

Lesson at a glance

Time	Length	Part	What happens
0:00	3 min	**Hello from Dr. Dirt**	Dr. Dirt introduces himself and what he does. He opens with one question for the class to think about: **"Is dirt alive?"**
0:03	5 min	**Wonder & predict**	Show a seed, a cup of dry sand and a cup of dark garden soil. **"Which cup would a seed rather live in? Why?"** Introduce two words: **microscope** (a tool that makes tiny things look big) and **microbe** (a living thing too small to see).
0:08	8 min	**Read the book**	*Dr. Dirt and the Stubborn Seed*, read straight through.
0:16	17 min	**Look closer: the microscope on the screen**	Three live slides on the classroom screen, matched to the story: **1.** plain sand, "the lonely seed's soil"; **2.** living garden soil or compost, where microbes swim and fungal threads stretch; **3.** a real root with tiny root hairs and fungal threads. Students describe what they see and ask questions as they go.
0:33	5 min	**Draw what you saw**	On the student page, each child draws one thing they saw on the screen and circles: *alive* or *not alive*.
0:38	2 min	**Wrap up**	Dr. Dirt brings it back to the opening question, "Is dirt alive?", and sums up the three big ideas: **soil is alive, roots need friends, and good things take time.**

How the story connects to the microscope

The seed sits alone and won't sprout	**Slide 1:** plain sand, with nothing living in it
Dr. Dirt adds food and fungal friends to the soil	**Slide 2:** living soil, full of microbes and fungal threads
The children wait, and the seed finally grows	**Slide 3:** a real root, working with its fungal partners

PLANNING THE VISIT

Setup, safety & after the visit

Dr. Dirt brings

- The book
- Microscope and camera with a cable for the screen
- Prepared samples: plain sand, living garden soil or compost, a root
- A seed and two cups of soil to show
- Copies of the student page

From the classroom, if possible

- A screen or projector with an HDMI input
- A table near the screen and an outlet
- Students seated on the carpet or at desks facing the screen
- Crayons or pencils
- About 5 minutes to set up before the lesson

Safety: only Dr. Dirt handles the glass slides and samples. Samples come from garden soil and compost, never from manure. Children look at the screen, not into the microscope, so no one touches anything.

Ways the teacher can help

- Seat children so everyone can see the screen
- Keep the screen clear of glare (lights partly down helps)
- Help hand out the student page and crayons

To keep it going after the visit

- Plant two seeds: one in plain sand, one in garden soil. Compare them each week.
- Take a class walk and find places where soil looks alive (dark, crumbly, with worms or roots).
- Send the student page home so families can talk about it.

Coming back? Each return visit brings a new Dr. Dirt book and a new microscope lesson that builds on this one. Contact Dr. Dirt at drdirt@plantsandpeople.earth.

DR. DIRT CLASSROOM VISIT

Soil Is Alive!

Draw one thing you saw on the microscope screen.

My microscope drawing

Is it alive? Circle one.

Alive **Not alive**

My name: _____

For families: Today Dr. Dirt read *Dr. Dirt and the Stubborn Seed* and showed us real microbes and roots under a microscope. Ask your child: *"What lives in the soil? What do roots need?"*

Keep growing with Dr. Dirt

Soil & Plant Testing

Bring a sample to Maku'u Farmers Market on Sundays, or book the Mobile Field Lab at your home or farm.

drdirt.earth/services

Pocket Lab

Dr. Dirt's at-home garden test kit and app. Coming soon.

Scan to learn more

Grow With Dr. Dirt

A free garden game with real weather. There is no link. Secret entrances are hidden everywhere.

Can you find a way in?