

# K-12 IYS Activity



## Summary

Each gram of soil may contain up to 100,000,000 or more microbes. Functions and processes that benefit humans are called *ecosystem services*. The “microbial zoo” at [DLC-ME | The Microbe Zoo | Dirtland](#) helps students learn about the different functions and ecosystem services of soil microorganisms.

## Learning Objectives/ Outcomes

1. To learn that different groups of soil microorganisms perform different functions that together keep soils and water healthy and clean.
2. To learn about the functions that benefit humans, called ecosystem services.

## Materials (per student, group etc.)

- Computers
- Desk
- Chairs

# The Microbe Zoo and Dirtland

## Ages of Audience

1. Elementary
2. Middle School, High School

## Recommended group size?

Less than 20

## Where could you offer this?

1. Local school
2. Library

## What type of room do you need?

Classroom seating

## Type of Lesson

1. Hands-on (participants touch the stuff)
2. Small group exercise/discussion critical thinking

## Time Needed

1. Scientist prep time + clean up time: Minimal
2. Participant/class time: 30 minutes

## If the activity costs money, how have you funded this in the past/suggestions for others?

No cost

## Methods/Procedures

1. Choose a subsection of *Dirtland* to focus on and research that category of microbes. The list of subsections can be cut down to those that specifically provide a service, such as: Ag Acres, Compost Pile, Redox Mine Shaft, Root Cellar, and Toxic Waste Dump.
2. Find examples of that category and explain to classmates how it affects humans and the world.
3. Draw a picture showing the connection between the microbes and the service they provide.

## Discussion Questions

1. How many of the microbial activities studied benefit humans, and if so, how?
2. What would be different if those microbes didn't exist?

## References

<http://commtechlab.msu.edu/sites/dlc-me/zoo/zdmain.html>

*Celebrating the*



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