CO-CREATE SOIL FACTORY: HOW TO

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What is a soil factory?

A classroom sized project to produce high-quality compost to be used in microforests and gardens, and in other forestry and vegetation activities.

*Sample soil factory demonstrating the size and materials involved in the project.

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Why does the Soil Factory matter for the climate and the environment?

a. It reduces organic waste that goes into landfills, which reduces methane emissions, which means we can utilize existing resources to improve our land and reduce the rate of climate change.
b. It produces nutrient-rich compost for soil health, which can improve how plants, trees, and crops grow.
c. It decreases our reliance on chemical fertilizers, which also contribute to greenhouse gas emissions, so we can reduce emissions, save money, improve our health and ensure the soil is not being damaged.

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How is the Soil Factory connected to the broader climate action teacher champion toolkit?

- This is a key building block to learn about the ability to reuse organic waste, improve soil health with the use of compost, and to produce compost which is a necessary component for a healthy micro-forest.

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Materials Needed for the Soil Factory:

a. One 20L plastic bucket
b. Enough paper, hay, newspaper, and carboard to fill 75% of the bucket
c. One hand full or 1kg of composting worms
d. 1kg or 25% of the bucket covered in organic waste (this needs to be added once a day). Organic waste could include banana peels, eggs shells, pruned trees or leaves. Organic waste should not include meat or dairy items.
e. 1kg of high-quality compost
f. A watering can and trowel

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How do I set up the Soil Factory?

1. Drill 15 equally spaced small holes into the sides of your bucket to allow for worm respiration, worm migration, and transfer of organic matter. Do not drill the holes too close to the bottom, as this will cause liquid to escape.
2. Attach a small tube to the bottom of the bucket to allow for the percolating compost tea to drain. Place a small receiving container/bucket beneath the tap. Keep the tap open so the compost tea can continuously flow out. Compost tea is a liquid full of micronutrients that you can save and use on your plants or gardens.
    - For the compost tea, mix one cup of the tea with 4L of water. Let it steep overnight and then shake, mix, aerate. Once that is complete you can water or spray plants in the garden or microforest.
3. Now to layer the materials of the soil factory! Starting with dry shredded paper and/or carboard. Cover the bottom of the bucket, up to about 25% of the height of the bucket with cardboard and/or shredded paper.
4. Next, add a layer of compost (1kg) about a hand full.
5. Add 1 handful of worms after the compost layer
6. Add a layer of organic waste, about 25% of the height of the bucket, do not over feed to leave room for the second layer of dry paper
7. Lastly, at the top, add a layer of dry paper, hay, on top of the organic matter to provide protecting from insects
8. Place your soil factory in a shaded area outside.
9. Every day ask your students to bring any scrap food, wastepaper, or fruit peels. Temporarily remove the dry paper or hay top layer –add your organic waste, and add your dry paper or hay back
10. When the middle layer is a dark crumbly consistency, you can transfer it to use as a as a topsoil or the roots of plants in the garden or microforest.

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How do I set up the Soil Factory?

- A growing and active worm population
- Dark, crumbly soil that we call “vermicompost” (a natural process whereby earthworms convert waste material into compost)
- Absence of bad smell - this indicates the vermicompost is ready to use
- Moist bedding, visible plant growth