



If internet access is an option for you. Please check out the link below for all lessons, pictures and video updates related to 4th Grade 'Ike Hawai'i: <https://tinyurl.com/wyj536s>

4th Grade 'Ike Hawai'i Lesson 4/7/2020: Composting

Aloha mai kākou! Hope you and your 'ohana are safe and washing your hands often!

This lesson is one that I hope you could begin to do during your Mālama 'Āina Daily Challenge time. If you are outside making your 'āina (your land or place) beautiful great! This lesson is a way for you to learn how to take those pesky weeds that grow everywhere in your yard or on your street and to turn them into compost, a form of fertilizer (something you add to soil to make plants grow better) for healthy soil and plants.

Let's get started:

What is composting?

Composting is a process where organic materials (or dead plants) are collected, piled up and decomposed or broken down into smaller pieces by decomposers.

Decomposers are everywhere in our world. Decomposers are microscopic healthy bacterias, fungi or fungus like mushrooms as well as other animals like earthworms and insects that feed on dead things and break them down.

After dead plants and food scraps go through the process of decomposing they make compost, a healthy rich soil fertilizer. Compost is not soil. Soil has pieces of broken down rocks in it. Yet, compost can be used to grow food in and can be mixed into or put on top of soil to make the soil more healthy.

Compost can be added to soil as a fertilizer. Even if you only have a little soil making your own compost and adding it to your soil will help to make your soil healthy. Soil is a living community of microscopic organisms. According to the University of Illinois, in 1 scoop or teaspoon of soil there are anywhere between 100 million to 1 billion living bacteria and other microorganisms. The more healthy the soil is the more living microorganisms there are alive inside it.

Adding Compost to soil helps to feed the living organisms in the soil which make the soil better for growing plants and food crops in.

How do we create compost?

- Choose an area for your pile or bin to be- far from house
- Collect pulled weeds, branches (cut into small pieces), leaves, cut grass clippings, shredded paper or newspaper, torn up pieces of cardboard (without plastic tape)
- Collect scraps from your kitchen: eggs shells, coffee grounds, banana peels, rotten fruit or vegetables, strawberrys, orange peels, carrot, potato, anything left over from kitchen
 - NO: Meat/Bones, Dairy, or Oils (these bring the mongoose and rats!)
 - NO: Plastics

- Create layers of the materials you gather on/in the spot where your pile/bin will be
 - For example
 - One layer of things you gathered from your 'āina: weeds, leaves, branches (cut into small pieces), etc.
 - One layer of kitchen scraps (veggies and plants only -no meats!)
 - One layer of things you gathered from your 'āina
 - Keep adding layer upon layer of plants gathered and kitchen scraps
- Add some water to your pile- make it damp but not soggy
- Decomposers will begin to break down your pile

Other Tips:

- Add a scoop of soil from your yard to jump start your compost pile (if you don't it will still work, it will just take a little longer)
- To speed up decomposition: Compost piles should be at least 3 feet wide by 3 feet tall
 - You can add to your pile over time so it will get bigger
- Decomposers need moisture (a little water) and air
- Piles that are large enough and have enough water and air will begin to heat up while the decomposers are breaking down the pile
 - Piles can heat to temperatures of 150 - 180 degrees
 - Hot piles will cook all weed seeds
- "Turning" the compost pile or mixing it around adds air and greatly SPEEDS up the process
 - Turning the pile can be done weekly, bi-monthly, or monthly, it's up to you!
- Pile will break down even if you don't turn it... it will just take longer but it will break down into compost.
- Composting takes months to break down... so start now!
- Composting makes "rubbish" such as weeds and kitchen leftovers that might have gone to the landfill and turns it into food for soil and plants to grow and be more healthy.
- Composting is a form of recycling energy back into soil that we can grow food from.
- There are many different techniques, recipes and processes to compost. The instructions here are simplified and are not the only way to compost. If you have time and want to learn more, do your own research. At the bottom of this document are some links to composting websites I have provided for you to explore.

Here are some examples of compost piles or bins that can be made:





Here is a link to a 5 minute video about the basics of composting I found on the internet if you are able to get access: <https://tinyurl.com/y6wc8scy>

Student Work:

Could you start a compost pile at or near your home?

- If you are interested in making free fertilizer for your plants ask an adult at home if you can create a compost pile before you make one. Also, ask where a good place would be (away from your house) to put your pile or bin?
- What weeds, leaves, branches or grass clippings can you gather?
- What kitchen scraps can you collect each day?
- If you start one, remember it is your kuleana (or responsibility) to continue to add to your pile or bin... not your 'ohana's kuleana. It will be your kuleana!
- Do more research online if you are able. Find out what are greens and browns? What do greens and browns do in a compost pile?
- If you wanted to create a compost bin, what materials could you use to build one?
 - Before starting, ask an adult before you use anything...Remember "ASK FIRST"
 - Don't go out and buy things, try to use what you get at home!

Other 'Ike Hawai'i Resources:

I have also created a video of how my 'ohana has recently created a compost bin at home. If you are able to get internet access click on the following link:

- <https://tinyurl.com/wyj536s>
 - Look in the "Videos" folder
 - Then click on the video titled: "Use What Get Composting"

Check out these other websites for more kid friendly information and activities about composting:

- <https://kidsgardening.org/gardening-basics-composting/>
- <https://www.anoffgridlife.com/teach-kids-to-compost/>
- <https://www.gardeningknowhow.com/special/children/composting-ideas-for-kids.htm>
- <https://your.caerphilly.gov.uk/kidsgogreen/activity-zone/get-composting>
- <http://www.mykidsadventures.com/five-fun-composting-projects-for-kids/>