

# Mālama 'Āina

## (Removing Microplastics)

O- 'Ohana goal (Why do the activity?) Family Goal

'Aina (*land*) is a part of our 'ohana (*family*). When we mālama 'āina (*take care of the land*), we are taking care of our family -- connecting with and showing aloha for the spaces that provide nourishment for our 'ohana.

Kenneth Francis Brown, a significant figure in Hawai'i's political, business, and cultural community in the decades spanning the 1960s through the 1990s, discussed the mālama ethic in his 1973 speech to the State Legislature referenced from the site Hawaiian Voyaging Traditions:

*"All of man's acts in Hawai`i must be dominated by the spirit of 'Mālama'. The Pukui-Elbert Hawaiian Dictionary defines 'Mālama' thus: "To take care of, care for, preserve; to keep or observe, as a taboo; to conduct, as a service; to serve, honor, as God; care, preservation, support; fidelity, loyalty; custodian, caretaker." Mālama is thus an imperative. It is applicable to our entire lives in Hawai`i. It is applicable to all our transactions with each other, to all of our transactions with the overseas world, and to all of the transactions between society and nature. Each of these transactions must meet the test of mālama at all times, without exception."*

-Kenneth Brown



**E mālama 'aina kākou! (Let's take care of our land!)**

### Benefits:

- Time together as and 'ohana to learn about your 'āina
- Time to spend together to explore surroundings and experience differences



## H-Ha'awina (Let's do the activity) Lesson, Assignment, Task

When spending the day at the beach, has your 'ohana ever wondered where all those little pieces of plastic come from that are scattered along the beach? Those are called microplastics, and they are broken down fragments of normal everyday items that we use such as water bottles, discarded toys and household items packaged in plastic containers. Over time, large plastics break down into small pieces less than five millimeters (microplastics) and create harmful pollutants that cause serious health situations in both humans and wildlife. Fish and animals that ingest microplastics absorb harmful chemicals which create adverse health effects. If humans then eat infected animals, we also experience health issues due to absorbing plastic chemicals into our body. Microplastics are harmful pollutants for our ecosystems and have negative effects on us all.

In this activity, your 'ohana will have the opportunity to get creative and find items that can help to separate microplastics from sand at the beach. Recycle and repurpose old items you may have laying around the house such as, a flour sifter or colander. Even a broken fishing net like the one pictured may be repaired and used for this experience. If these types of items are not easily accessible in your home, we invite you to replicate the bucket sifter that was created below.

### Repurposed Container Sifter

#### 1. All items needed

- Repurposed bucket or container
- Duct Tape
- Saw/something that can be used to cut bucket
- 12inx12in piece of old screen



#### 2. Bucket Preparation

- Be careful when using sharp objects to cut your container
- Cut approximately 2 inches from the bottom of your container
- Discard bottom of your container



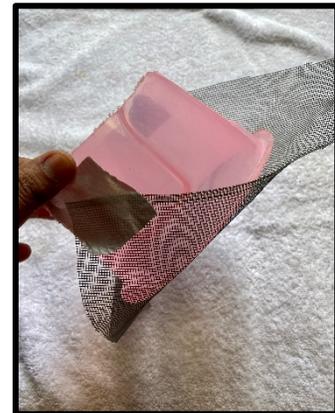
### 3. Screen Placement

- Cut enough screen that you can cover the top of your bucket
- Leave a few inches extra to allow you space to duct tape screen to container



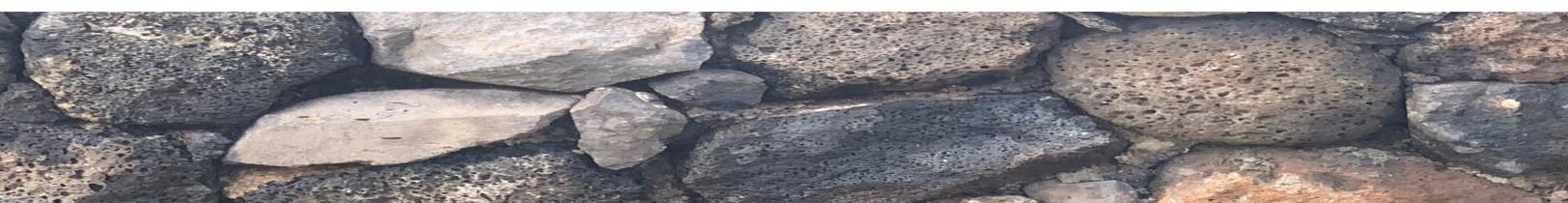
### 4. Put It All Together

- Place small pieces of duct tape to hold screen in place
- Be sure to keep screen as tight as possible while adding tape
- Secure screen with tape all the way around your container
- You're all pau! Maika'i. Now time to take it to the beach and test it out.



#### Tips:

- If you do not have an old bucket you may reduce, recycle, reuse, by thinking of other items found in the house. Other items found may be such as an old gallon ice cream container, mayonnaise jar from Costco or gallon Zippy's plastic take out container.



## A-Alaka'i (What did you learn? What can you teach?) To Lead, Guide, Direct

### Extension Activities:

Another item to make as an 'ohana to mālama 'āina is to build a machine to pull microplastics from the beach sand find directions at the website Seed World <https://seed.world/building>. Example picture of the machine from the website Seed World to pull microplastics provided by Seed World.



There are many other ways to mālama 'āina such as taking care around the house, which there is so much space to care for. The 'ohana may rake the yard, sweep around the house, or water the plants.



### Resources:

Building Seed World. Retrieved June 8, 2020. <https://seed.world/building>

Hawaii Voyaging Traditions. Retrieved June 19, 2020. [http://archive.hokulea.com/index/founder\\_and\\_teachers/kenny\\_brown.html](http://archive.hokulea.com/index/founder_and_teachers/kenny_brown.html)

