



WHERE DOES ALL THE 'ŌPALA GO?

'ŌPALA TECHNOLOGY CARDS



TECHNOLOGY CARD #1 - SOURCE REDUCTION

Source reduction or waste prevention is the best way to *mālama* our 'āina. Source reduction is not a form of technology. It's just a better system of managing waste. Source reduction simply means producing less waste. If we can create less waste, we can help decrease the amount of 'ōpala that ends up in our landfills and waste-to-energy plants. Waste prevention also helps conserve our natural resources. If we buy fewer products and materials, we use fewer resources.

Some ways we can be more active in source reduction and waste prevention and to help *mālama* our 'āina are to:

1. Buy products with less packaging.
2. Buy items that can be reused.
3. "Pre-cycle" by buying items that have been recycled.
4. Buy food items in bulk.
5. Buy locally made items to save on shipping, which uses oil.
6. Recycle old clothes by donating them to charitable organizations.
7. Reuse items and buy fewer products.



TECHNOLOGY CARD #2 - RECYCLING

When we recycle, the materials that were used to manufacture a product are reused to make new products. Recycling materials such as plastic containers, metal cans, glass bottles and paper products involves collecting and sending these materials to a manufacturing plant where they are made into new products.

Recycling prevents materials from ending up in our landfills or waste-to-energy plants.

On O'ahu, redemption centers have been set up to address our recycling needs. These centers are open for people to drop off recyclable items such as plastic, glass and aluminum. Some companies are recycling old rubber tires and using them for playground surfaces and as a soil additive to improve drainage on athletic fields. Recycled plastics are being used to build picnic tables, park benches, decks and bridges.

The City & County of Honolulu is also inviting schools to earn extra money by setting up recycling bins on their school campus. The city is offering 96-gallon carts for schools to use in their recycling efforts. This is a great opportunity for schools to earn extra money and at the same time *mālama* our 'āina.



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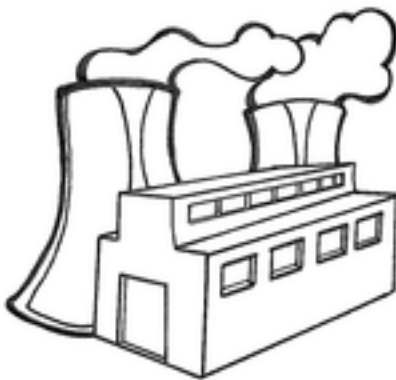


TECHNOLOGY CARD #3 - COMPOSTING

Composting is another way to recycle. Yard waste such as leaves, grass and other small trimmings are placed in a bin or left in an open pile to decompose. A natural process breaks down the organic material, which can later be used as plant fertilizer.

On O'ahu, there are two companies that produce composted green waste. The compost is used in many ways. Punahou School baseball and football fields and the Waipi'o Soccer Park use green waste around their facilities. Mulch has been used to fertilize plants at Hawaiian Waters Adventure Park, Kalāheo High School, and Marine Base Corps Hawaii.

We can help *mālama* our 'āina by creating a compost bin at our home or in our school.



TECHNOLOGY CARD #4 - WASTE-TO-ENERGY PLANT

A waste-to-energy plant turns waste into energy. Materials that cannot be reused, recycled or composted end up in a waste-to-energy plant.

In Hawai'i, the City & County of Honolulu manages a plant called H-POWER. The plant processes over 2,000 tons of garbage a day. The 'ōpala is burned in a furnace at 1,800 degrees Fahrenheit, which produces steam. The steam operates a machine called a turbine generator. The movement of the turbines produces electricity. The amount of electricity the H-POWER plant produces provides power to 60,000 O'ahu homes.

There are some risks involved in operating a waste-to-energy plant. Some experts say that the pollutants released into the atmosphere can be harmful to our health and our environment. Studies are still being done to find out what kind of impact the waste-to-energy plants have on society.

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Landfills are the most common way to dispose of waste. Garbage is dumped into a large cavity in the earth at a designated landfill site. A plastic liner is placed in the hole to prevent toxic materials from getting into the groundwater. The waste is spread out into thin layers, packed down firmly and covered every day with a fresh layer of soil or plastic foam. This is done to prevent the 'ōpala from blowing away and to prevent smelly odors!

On O'ahu, 1.6 million tons of garbage is generated every year; 500,000 tons of it goes into our landfills. Old carpets, furniture, mattresses, sewage sludge and dead animals are just a few of the items that end up in it. The City & County of Honolulu is taking steps to reduce the amount of materials that end up in our landfill by increasing recycling efforts.