

# Coastal Protections:

## Build Your Own Coastline

### Student Worksheet

---

#### Instructions:

1. Bank sand up in one half of the container. Make sure you can still see the bottom of the container in the half without the sand. Sand should come about halfway up the side
2. Fill the containers with water so it hits just under the sand. In this demonstration, the sand represents the coastline, and the water represents the ocean.
3. Make waves in your container by rocking it back and forth gently, so the water starts to move to the coast. These are similar to ocean waves. Observe and record observations of if and how the sand is moving.
4. Add barriers to the container (corals or clay). These play the role of the coral reef.
5. Make waves in your container and record your observations.
6. Experiment with how the shape and location of the barrier (is it close or far from the shoreline? Is it tall or short? Big or little?).
7. Record your observations and pay attention to which structures are the most effective at stopping wave energy.

# Build Your Own Coastline

## Student Worksheet

1. Get materials from your teacher and follow the instructions below.
2. Fill out the chart below with what you see in each coastline model.

---

| <b>Predict</b> what you think will happen |                                   |                                |       |
|---|-----------------------------------|--------------------------------|-------|
|   | Do the waves reach the shoreline? | How do waves affect the beach? | Notes |
| Container with no coral reef              |                                   |                                |       |
| Container with big coral reef             |                                   |                                |       |
| Container with small coral reef           |                                   |                                |       |

\*Photos provided by the Coral Resilience Lab; for more information on photos, and photo credits, please consult this [link](#)

| <b>Observe and Record</b> what happened |                                   |                                |       |
|---|-----------------------------------|--------------------------------|-------|
|   | Do the waves reach the shoreline? | How do waves affect the beach? | Notes |
| Container with no coral reef            |                                   |                                |       |
| Container with small coral reef         |                                   |                                |       |
| Container with large coral reef         |                                   |                                |       |

Additional observations:

\*Photos provided by the Coral Resilience Lab; for more information on photos, and photo credits, please consult this [link](#)

Dive in deeper...

1. What happened when waves hit your beach and there was no coral there?
2. Why are reefs important for protecting coastlines?
3. What happens to people and houses located on the coast if reefs aren't there?
4. What would happen to **coastlines** if the coral reefs were to get smaller?

\*Photos provided by the Coral Resilience Lab; for more information on photos, and photo credits, please consult this [link](#)

