

Make Your Own Tide Pool



SAN DIEGO
COASTKEEPER



think **BLUE**
SAN DIEGO



OVERVIEW

Students create a miniature tide pool habitat, then add trash to see how pollution affects tide pool animals.

SCIENCE QUESTION

How do tide pool animals survive in their habitat? How does pollution affect tide pool animals?

GRADE

Kindergarten and first grade

TIME

30 minutes

STANDARDS

K-ESS3-1: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Objectives

At the end of the lesson, students will:

- Create a model of a tide pool habitat
- Explain how trash negatively affects the habitat

Materials

- Deep dish or container
- Modeling clay or dough (recipe for homemade dough included below)
- Water
- Rocks
- Pretend animals—small toys, tin foil, or game pieces
- Pretend trash— scrap paper, sprinkles, or spices

Salt Dough Recipe

2 cups all purpose flour

2 tablespoons vegetable oil

0.5 cup salt

2 tablespoons cream of tartar

1.5 cups water

- In a large bowl, mix the flour, salt, cream of tartar, and oil.
- Boil water. Once water has boiled, add slowly into flour mixture. Stir continuously with a spoon until it combines to become a sticky dough.
- Allow the dough to cool down, then knead it vigorously for about 5 minutes.
- If needed, add a tablespoon of flour at a time until dough is no longer sticky.
- When dough has reached desired texture, form into a ball. Cover or store in an airtight container until ready to use.

Instructions

1. Prior to conducting this activity, students should watch the corresponding Kindergarten/first grade video lesson.
2. Gather all materials and, if necessary, prepare a batch of salt dough using the recipe above.
3. The deep dish will represent your tide pool. Mold the clay along the bottom of the container to represent the sand on a rocky beach.
 - Note: We like to make the “sand” come up higher on one side of the dish, almost like a ramp. This represents the natural shape of a beach.
4. Add rocks in a circular shape in the container to create your tide pool.
5. Add your pretend animals to the tide pool. Place some on the rocks, on the beach above the rocks, and inside the circle of rocks. Reinforce the idea that there are lots of animals in tide pool habitats— some that live on the rocks, some that live in the pools of water, along the sandy beach, etc.
6. Explain to students that now they have a beach, a tide pool, and animals. But they’re still missing one very important thing— water! Carefully pour water all over the inside of the container until the tide pool is halfway submerged.
 - Remind students that it’s okay if some of their animals are now underwater. Tide pools are special because the water level constantly changes throughout the day. At some points in the day, the tide pool could be completely underwater, and at other times it could be completely out of the water. When we visited Cabrillo National Monument in the video lesson, we saw that tide pool animals have their own creative ways of dealing with these changes!
 - **Optional Extension:** Show pictures of the tide pool animals that students met during the video lesson. Ask your students where they think each animal lives in the

tide pool. Would an octopus live in the driest part of the tide pool, where there is little water? Would a seagull be able to survive completely underwater? Are there any animals that can survive both (like crabs or sea anemones)?

7. The tide pool habitat is now complete. Ask students how their tide pools look— is the water clean or dirty?
8. Explain that just like people need clean air to breathe and clean water to drink, tide pool animals like to have clean water to call home. But how does water get dirty? Water can get dirty through things like pollution. Pollution is something that makes the air, water, or land dirty because it does not belong there. An example of pollution is trash.
 - Ask students if they have ever seen trash outdoors at the park or beach. How did it make them feel?
 - If they were an animal that lived outdoors, would a home full of trash be a safe place to live?
9. Say that now you'll pretend someone went on a picnic at the beach, but they forgot to throw their trash away. Add your fake trash (pieces of scrap paper, sprinkles, or spices) all over the tide pool.
10. Have students observe their tide pools now. Compared to the beginning, does the water look clean or dirty? What caused the change?
11. Ask students: Is trash good or bad for the animals that live there? What would happen if the animals ate the trash? Could it make those animals sick? If the students were tide pool animals, how would they want their habitat to look? Reinforce that tide pool animals want to have a clean home, just like how people want to live somewhere clean and safe too.
12. San Diego Coastkeeper's job is to keep the water clean all over San Diego. But that's a big job for one group of people! Review with students how they can help us keep San Diego's water clean.
 - Pick up trash when you see it— at the beach, to the park, or in your neighborhood
 - Don't litter. Instead, always throw your trash away in a trash can
 - Take your trash home with you if the trash can at the beach or park is full. This makes sure that trash doesn't spill or blow away in the wind, and also makes sure animals can't accidentally eat it!

Visit www.sdcoastkeeper.org for more information on water habitats in San Diego!