

## Tide in! Tide out!

The intertidal zone is the part of the beach which is sometimes covered with water and sometimes exposed to the air. It can be a difficult place to live for marine animals, particularly when the weather is hot and sunny. Some cannot breathe out of water, others would simply dry out and die! Play this game on the beach (or anywhere!) to test your knowledge of how animals survive in the intertidal zone.



Teachers in Seychelles enjoying a game of Tide in! Tide out!

### What to do

- Divide into groups who will pretend to be different kinds of animals. You could be barnacles, clams, crabs, fish, sea anemones, corals or other sorts of creatures.
- Explain to the rest of the group how your animal behaves at high and at low tide. You might need to do some finding out first!
- Mark out an area in the sand to be a rockpool.
- When the organiser shouts "tide in", act out your animal's behaviour (swimming, feeding, exploring etc.). Try to be as convincing as you can, but don't go too far away because...
- When he/she shouts "tide out", act out your animal's low tide behaviour. You might have to close up, retreat into your shells, or return to the rock pool. Some creatures might even be **more** active at low tide!
- Award prizes for the best acting!

## Seashore detectives



Image by Mila Zinkova

Spend some time just exploring the rocky shore. Try to use detective skills to work out as much as you can about the creatures you find.

What are we likely to find? Anemones, corals, sea urchins, sea stars, sea cucumbers, crabs, prawns, sea snails, bivalves and many more! Refer back to your sheet from the “Who’s Who?” activity and to reference books and the internet to help you identify your amazing discoveries.

### What you need

- Paper and pencil
- Magnifying glass (optional)
- Shallow plastic tray
- Field guide (optional)

### What to do

Working in pairs or small groups, choose a small pool and really study it carefully.

- Draw a sketch map of your pool
- Count the different animals and plants and add them to your sketch
- Use a magnifying glass to identify smaller animals
- It is all right to remove the animals and keep them in a tray with some water, but put them back as soon as you have looked at them properly!

Be careful handling marine animals as many of them have spines or stings. Don’t pick anything up if you are not sure what it is, and do not poke your bare hands into any holes!

If you pick up any stones to look beneath them make sure you replace them carefully.

## Art with algae

Rocky shores often have a very wide variety of different kinds of seaweeds. You will find different sorts of algae at the top of the beach from the bottom. Often the ones near the top are green, whilst the ones further down are brown or red.



### What you need

- Large sheets of absorbent paper such as blotting paper, herbarium paper or botany paper
- A large shallow dish, big enough for a flat sheet of paper
- A bucket and tweezers
- Empty washing-up liquid bottle
- Lots of old newspapers or paper towels
- Sheets of cardboard and squares of nylon cloth
- Two flat sheets of wood, slightly bigger than your paper
- Concrete building blocks

### What to do

- Go to the beach and collect some algae in your bucket. Be careful to remove any small animals and return them to the rockpools! Collect a few different types, ones that are soft and delicate are the best. Try to get them whole if you can! Avoid ones with thick stems or hard (calcareous) types.
- Back at home, half fill your shallow dish with clean sea water.
- Float a piece of algae in the dish and untangle the fronds
- Slide a piece of blotting paper underneath and carefully lift out the algae. It should stay nicely spread out on the paper. Use the tweezers and the washing up liquid bottle filled with sea water to 'wash' the algae into the pattern you want.
- Put one of the sheets of wood down somewhere where it will not be disturbed. Put a sheet of cardboard and several sheets of newspaper on top.
- Place your paper with your seaweed design on the pile.
- Cover with a square of nylon cloth (this will stop it sticking to the layer above)
- Cover with more sheets of newspaper and another sheet of cardboard
- Put the second sheet of wood and the building blocks on top
- You can put several pieces of seaweed art in the pile as long as each one is separated by several sheets of newspaper.
- You need to change the newspaper each day for 3 days to help the seaweed dry. After a week it should be dry and stuck firmly to the blotting paper.

If carefully dried your algae art will last a long time, especially if you keep it out of bright light and away from moisture. Botanists use this method to keep records of plants and algae in special buildings called **herbariums**. You could write the name of the algae and the date collected on each sheet, and build up a collection for the place where you live. Or you can just put it on the wall!

## On the rocks quiz

1. Describe the appearance of basalt rock.....
2. What type of rock is basalt?.....
3. How is basalt formed?.....
4. Describe the appearance of limestone.....
5. What type of rock is limestone?.....
6. How is limestone formed?.....
7. Name one environmental factor that affects where animals and plants are found on rocky shore  
.....
8. How do molluscs (bivalves and sea snails) stay cool when the tide goes out?.....  
.....
9. Name one kind of marine animal you might find hiding under a boulder at low tide.....  
.....
10. True or false: Rockskipper blennies can survive out of water.....