MARINE & COAST AUDIT

Name_____ **Grade:** _____

INTRODUCTION

Have you ever visited the beach?

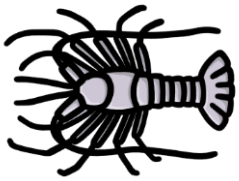
Cool Coastlines

South Africa has an awesome coastline (the land that meets the sea).

Our coastline is also home to some big commercial ports from Cape Town on our west coast all the way round to Durban on our east coast. These ports are integral to our economy playing a role in the movement of goods in and out of our country.

The South African coastline has particularly rich, productive waters that contribute to our fishing industry.

- **Can you guess some of our important commercial fish and marine species, look at the pictures for a clue?**



Millions also flock to our beaches in summer for a bit of sun, surf, and swimming.

Our tourism industry is booming at the coastline with whale watching, angling and even shark cage diving.

Coastlines are also important breeding areas for marine birds as well as essential breeding and nursery areas for fish.

The ocean also has an important cultural and religious significance. Some people even believe that seawater has healing properties.

But there is more to coastlines than meets the eye. Let's dive a little deeper and have a look at one of the most complex and important ecosystems on the planet.

It is time to "WAVE" at the ocean (I am pretty sure it will wave back).

W	A	V	E
Water	Animals	Vegetation	Environmental Issues

Water

Coastlines are formed over many years by waves. Waves crashing on the shore do two things.

- Waves erode land.
- Waves build up beaches.

In South Africa we have both rocky shores (coastlines with hard rock substrate) and sandy shores (shores with, you guessed it, sand!).

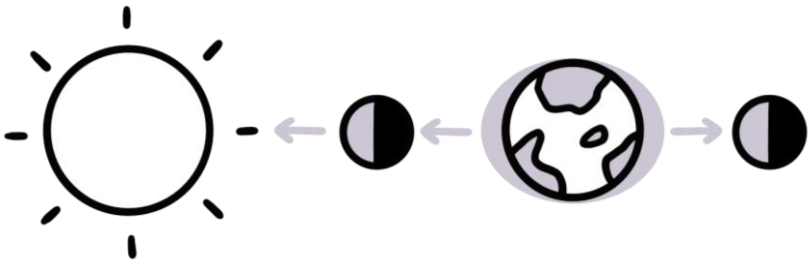
Coastlines are dynamic - this means that they are constantly changing. Tides can change beaches every day. Coastlines are amazing ecosystems with many unique animals and plants.

Do you know how tides work?

Tides are the rise and fall of the ocean's water level which is caused by the gravitational pull of the moon and the sun.

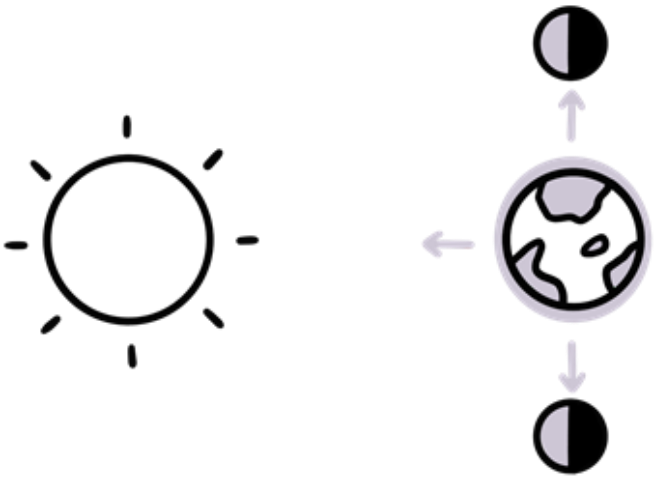
Spring high and low tide

When it is either full or a new moon. The sun and moon's gravitational pull causes the highest and lowest tides.



Neap high and low tide

When the moon is in its first or third quarter, the sun and moon's gravitational pull causes less of a difference between the high and low tide.

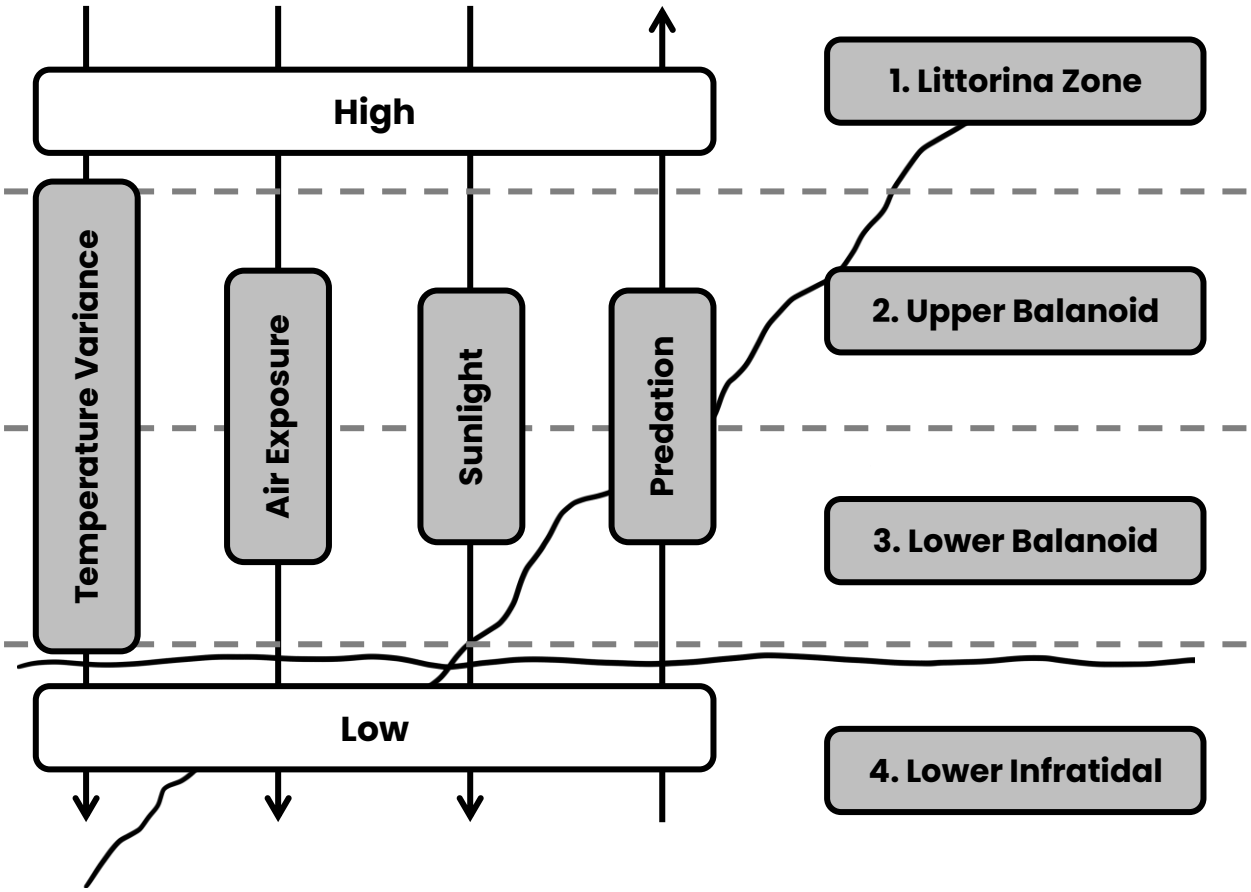


ACTIVITIES

Animals and Vegetation

Coastlines are home to some of the most amazing animals and plants, adapted to the extreme environments that they live in.

Let's have a look at the rocky shore as an example. The shore is divided into several zones. Each zone has different environmental factors that the animals and the plants need to be adapted to survive.



An example of some of the animals found within the different zones

1. Littorina Zone

Periwinkle

Red Algae

2. Upper Balanoid

Limpet

Barnacle

3. Lower Balanoid

Mussel

Urchin

Sponge

4. Lower Infratidal

Anemone

Klipvis

Octopus

Starfish

Redbait

Crab

Kelp

Abalone

Sea Lettuce

Using the diagram, please answer the following questions:

- Which zone do you think gets the hottest? _____
- Which is the driest zone? _____
- Which zone experiences the most wave action? _____
- Which zone experiences the highest levels of predation? _____
- Which zone do you think will support the highest level of biodiversity?

_____

Adaptations:

Look at the pictures below to give you a clue to the adaptation.

What can animals do to stop drying out?

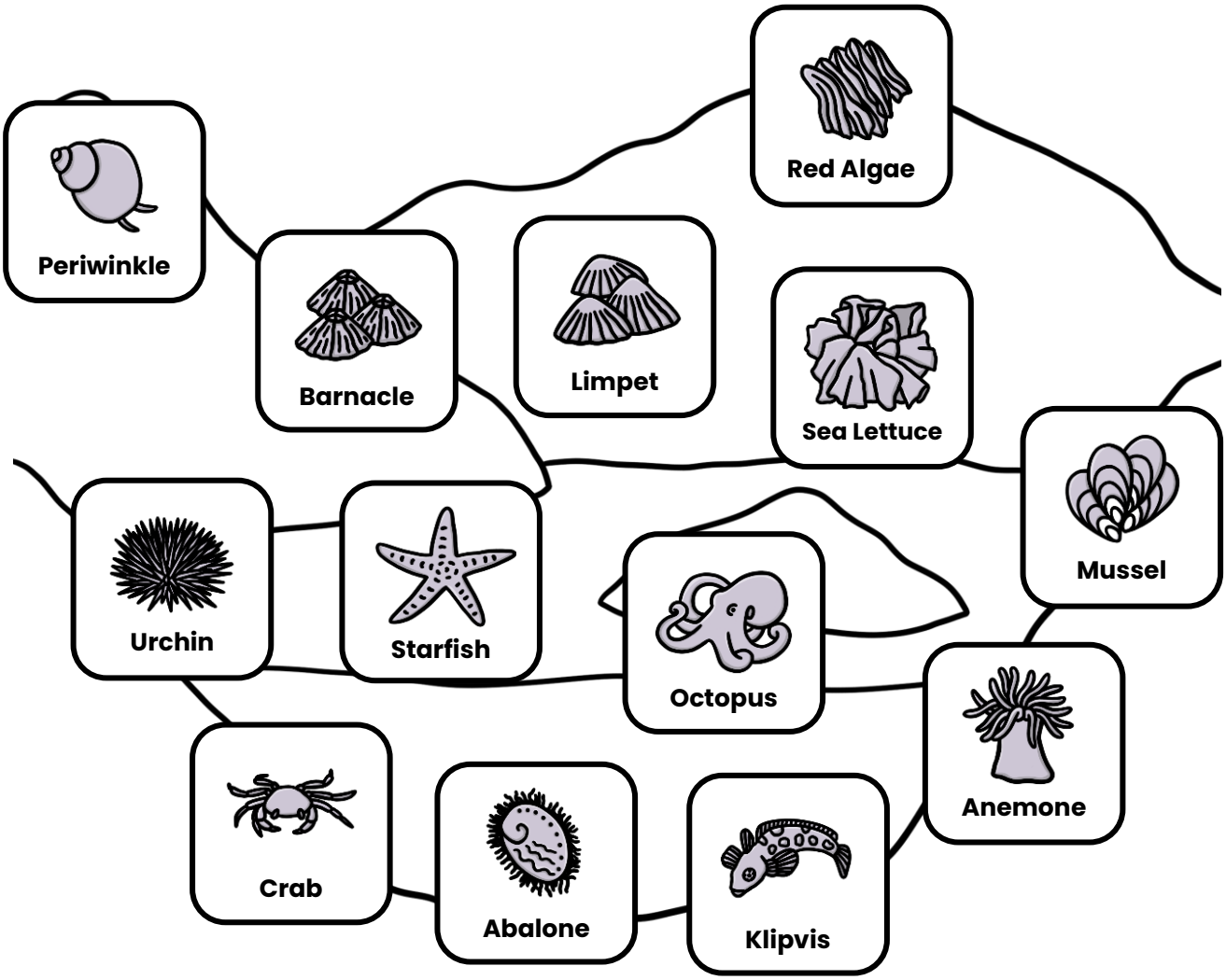
_____ _____

_____ _____

What can animals do to stop waves washing them away?

What can animals do to stop getting eaten by predators?

Look at the rock pool drawing below.



- Colour in an animal with tentacles.
- Circle two food sources for herbivores (eat plants).
- Put a tick next to a predator.
- Put a star next to three animals we eat.
- Put a smiley face next to your favourite animal.
- Put a sad face next to an animal you wouldn't like to stand on.

Environmental Issues:

The ocean is very good to us, but we are not always very good to our oceans.

- **Look at the drawings below. First state the environmental issue and then write down one thing we can do to help prevent this issue.**

Environmental Issue		How to Help

We can all change small things to help save our oceans.