# PROJECT OCEANOLOGY

## Rocky Intertidal Shore Exploration

The rocky intertidal shore is a narrow yet diverse habitat where organisms face changing tides, crashing waves and strong competition for food and space. Why is this ecosystem always changing? At high tide, this area is underwater; at low tide, it is mostly dry.

Organisms thrive in limited space by living on top of others, growing quickly to outcompete their neighbors or by forcing competitors out of their territory. While high tide brings food for residents, powerful waves can pull inhabitants away from their rocky home. Low tide leaves organisms unprotected. How do animals survive these harsh conditions?

The rocky shore is divided into four vertical zones which present various challenges for survival and contain specific organisms adapted to both air and water exposure. Your task is to draw and label the zones of the rocky intertidal, choose one zone to complete the table and collect organisms from our rocky shore!

*"It is just like a multistoried building, with each organism living on a floor that best suits them. The lower organisms have the strength and structure to hang on during more wave action and the upper organisms have the ability to withstand temperature changes and more exposure" - Auster et al., 2022.*

1. Define the following:
    a. Desiccation
    b. Detritus
    c. Adaptation
    d. Spray zone
    e. High tide zone
    f. Middle tide zone
    g. Low tide zone

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2. Draw and label a diagram of the zones in the rocky intertidal shore.

3. What are three challenges faced by organisms that live here? What are three adaptations that enable them to overcome these problems?

4. What anthropogenic threats are affecting the rocky intertidal ecosystem?

5. What are some limiting factors affecting an animal's ability to survive here?

6. Fill out the following table for ONE of the rocky intertidal zones.

| | |
|---|---|
| Zone name | |
| Zone features | |
| Algae in zone | |
| Animals in zone | |