



Awesome Adaptations: **Hawai'i's Shoreline Habitats**

Grade 3 Unit 1
Lesson 2

Picture and information cards for the
coastal shorelines and wetlands

Topics to be Covered...

Rocky Shoreline
Plant & Animal Adaptations



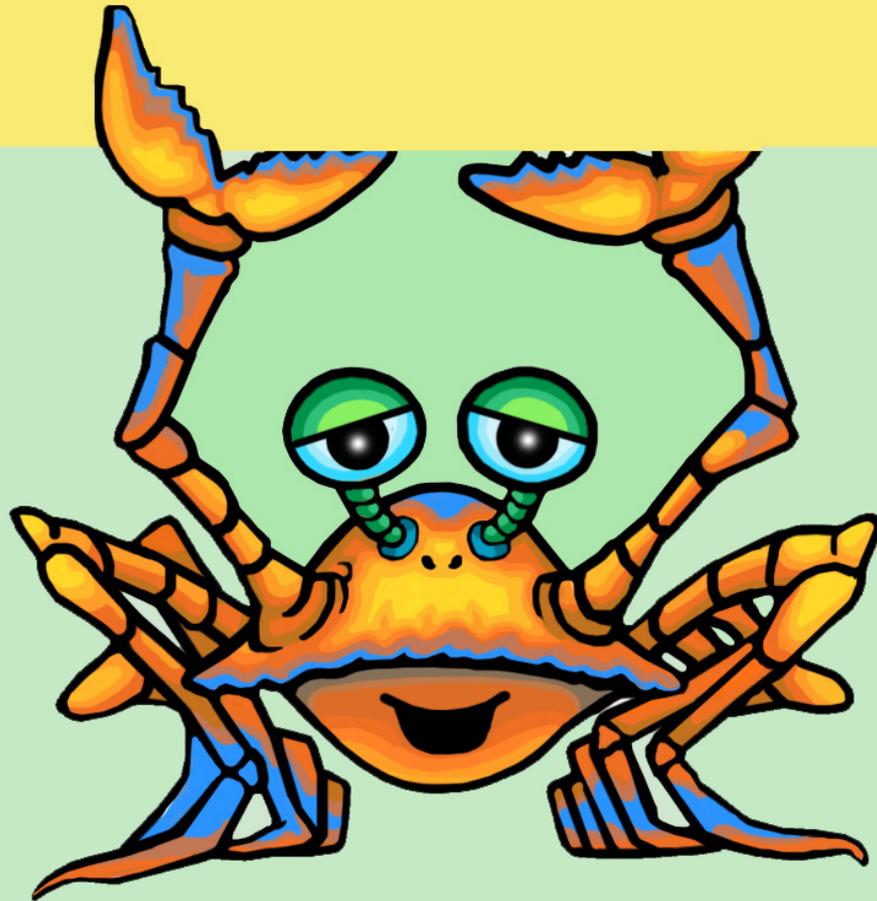
Coastal Wetland
Plant & Animal Adaptations



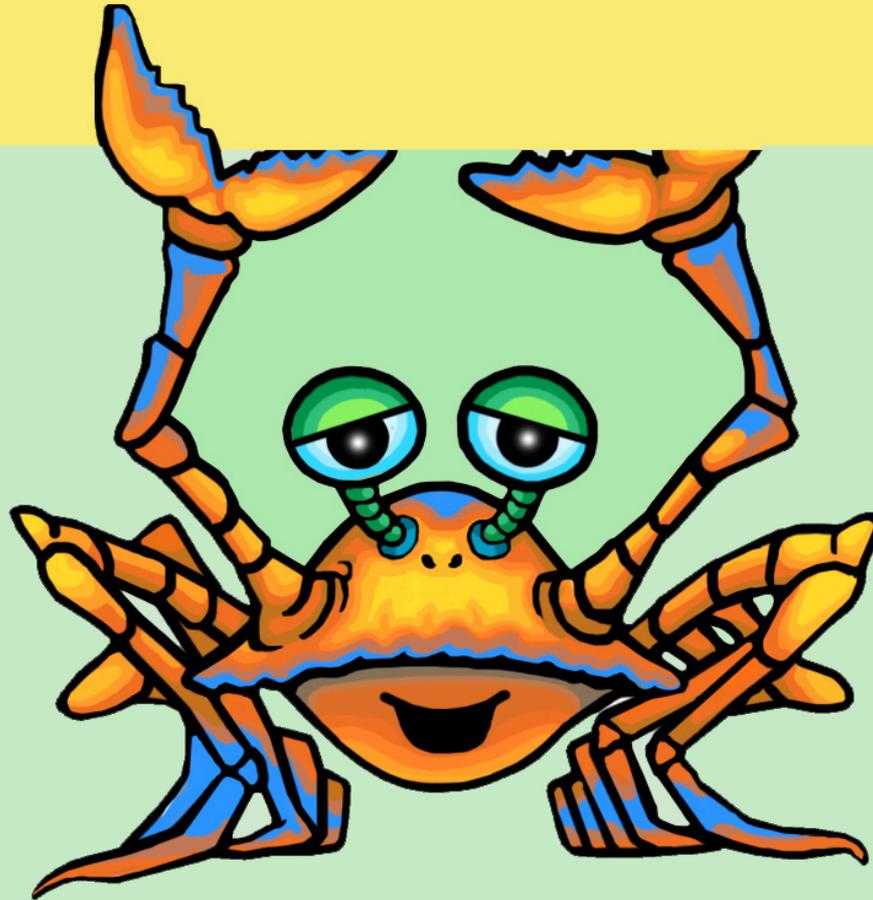
Sandy Shoreline
Plant & Animal Adaptations



First, what is an adaptation?



an **adaptation** is a feature of an organism that has evolved over a period of time



Rocky Shoreline



Periwinkle Snail

pupu kolea



Nerite Snail

pipipi



- Watertight shells to maintain moisture
- Clustering behavior reduces heat and maintains moisture
- Shells have a “trap door” (operculum) that closes to maintain moisture

Limpet

'opihi



- Low profile cap-shaped shell for wave resistance
- Strong foot for clinging to rocks
- Grooved shell for deflecting wave impact and water runoff

Rock Crab

'a'ama



- Watertight external skeleton
- Stores water in special gill chambers so it can leave the ocean
- Agile and quick to avoid waves
- Flattened body deflects waves
- Strong legs to cling to rocks

Shingle Urchin

hā'uke'uke kaupali



- Low profile body design is more resistant to waves
- Many sucker-type tube feet for clinging to rocks
- Flattened, tile-like spines to deflect force of waves

Rock-Boring Sea Urchin

'ina kea

- Teeth scrape rocks for feeding on seaweed
- Lives wedged into crevices, holes, and under rocks
- Moveable spines for protection



Goby

'o'opu

- Camouflage color makes it hard to see
- Pelvic fins are fused to form a suction disc to cling to rocks as waves wash through



Brittlestar



- Flattened body for hiding in crevices and rocks
- Able to break off and re-grow arms

Sea Lettuce

limu

- Flattened blades attach to rocks in bunches
- Soft and limp to move in surge of water



Coastal Wetland



Hawaiian Stilt

ae'o



- Long, sharp beak for probing in mud
- Very long legs for wading in water
- Long toes to help them walk in mud
- Dark feathers around face for sun reflection
- Hunt for small fish in shallow, open water

Hawaiian Coot

'alae ke'oke'o

- Boat-shaped body to help them float
- Partially webbed feet for swimming and walking
- Flat feet for spreading out weight while walking
- Dark feathers around eyes for sun reflection



Hawaiian Flag-tail

āholehole



- Silvery fish, pointed head
- Feed solo at night
- Rest in dense schools by day (see picture)

Striped Mullet

‘ama‘ama



- Silvery gray on top, silvery on sides
- Gray-brown stripes on sides

Sandy Shoreline



Beach Morning Glory

pōhuehue



- Closed flowers turn in upon themselves in a round shape for protection
- Sends out long runners to help keep rooted in sandy soil

Beach Naupaka

naupaka kahakai



- Thick leaves prevent water loss
- Shallow spreading root system to keep anchored in the ground
- Pulpy coating on seeds protects them from seawater and helps them float

Bermuda Grass



- Spreading root system for clinging to sandy shore

Sea Purslane

akulikuli



Pickleweed

akuli kuli kai

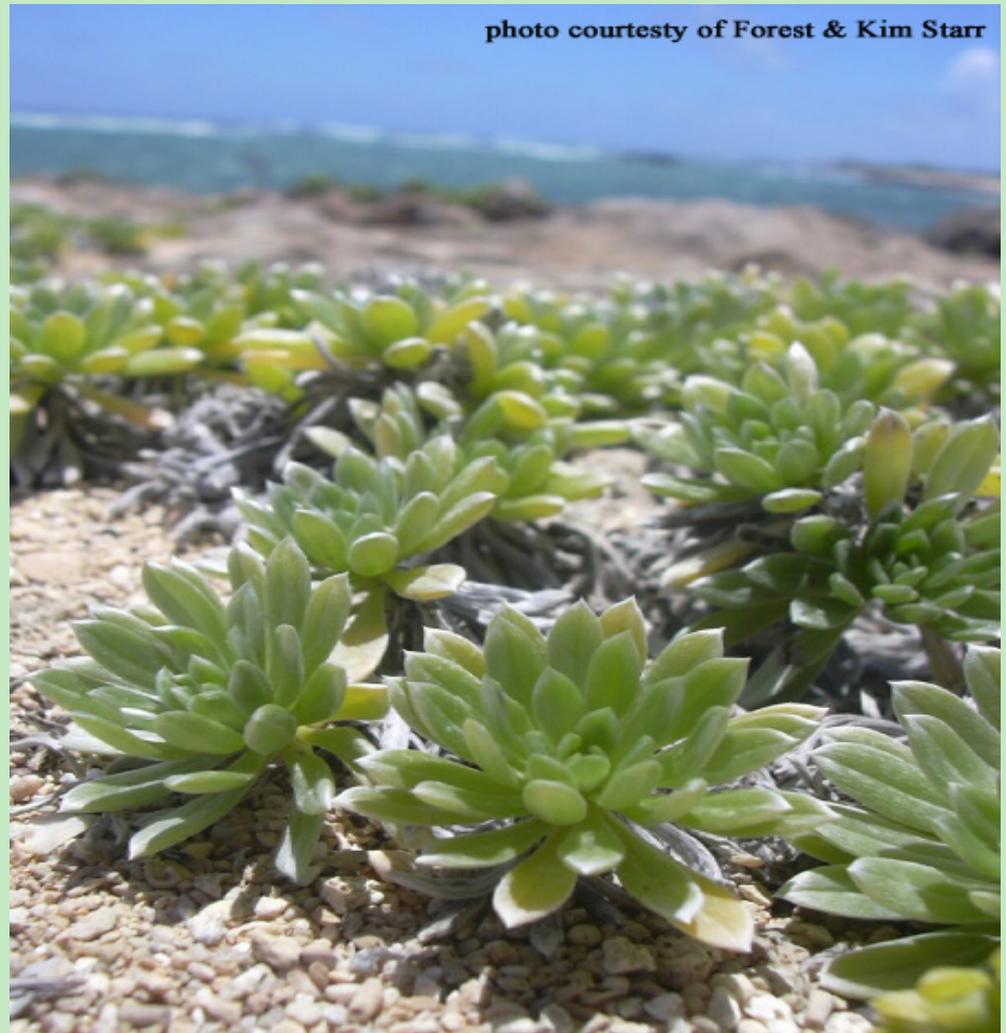


- Succulent, thick, waxy leaves for moisture retention
- Low-growing, crawling root system for sandy soil and windy climate

Beach Heliotrope

hinahina

- Very tolerant of salty conditions
- Narrow silky leaves for sand and wind protection



The End