

Name: \_\_\_\_\_

## Monterey Bay Aquarium Virtual Field Trip Worksheet

Explore the following ocean habitats using the [Monterey Bay Aquarium's habitat page](#) and answer the associated questions.

### Habitat 1: Beaches and Dunes

Have you been to the beach? If so, you have explored the beaches/dunes habitat. The beach/dune habitat is home to some shore birds, a few plants, and many invertebrates, though most of the invertebrates are small and hide themselves in the sand.

1. Why do you typically find few plant species in beach/dune habitats?
  
2. Why are dunes vital to marine habitats?
  
3. List three ways that you can protect beach/dune habitats.
  
4. Notable organisms of beaches and dunes
  - a. American Dune Grass
    - i. Fill in the levels of classification (learned in class) below
      1. Domain:
      2. Kingdom:
      3. Clade:
      4. Group:
  
    - ii. Name **two** adaptations possessed by dune grass that allows it to inhabit the harsh sand dune environment **AND** the benefit each adaptation provides.

b. Sand Crab

i. Fill in the levels of classification (learned in class) below

1. Domain:
2. Kingdom:
3. Phylum:
4. Class:

ii. How do sand crabs feed? Draw and label a picture to go along with your description (see the picture at the top of the sand crab information page to assist in making your drawing)

iii. What do sand crabs eat?

[Habitat 2: The Rocky Shore](#)

1. Describe the four intertidal zones below and list one organism that you might find in each zone. Use the scrolling slideshow on the rocky shore web page to help you.

a. The Spray Zone

i. Description:

ii. One organism that inhabits the spray zone

b. The High-Tide Zone

i. Description:

ii. One organism that inhabits the high-tide zone

- c. The Mid-Tide Zone
    - i. Description:
  
    - ii. One organism that inhabits the mid-tide zone
  
  - d. The Low-Tide Zone
    - i. Description:
  
    - ii. One organism that inhabits the low-tide zone
2. Describe an adaptation that each of the four organisms below use to avoid being swept away by crashing waves.
- a. Chitons
  
  - b. Sea Stars
  
  - c. Mussels
  
  - d. Seaweed
3. Sea Anemone
- a. Draw a sea anemone?
  
  
  
  
  
  
  
  
  
  
  - b. How do they catch their food?

### Habitat 3: Kelp Forest

1. Describe the difference between a male and a female California sheephead.
  
2. The California State Marine Fish is commonly found in the kelp forest ecosystems off the coast of southern California. It is a golden-orange fish. What is its common name?
  
3. Kelp forest communities produce a lot of detritus. What is detritus and why is it important in ocean communities?
  
4. Name a kelp forest resident from each of the following organismal groups.
  - a. Mollusk –
  
  - b. Protist –
  
  - c. Cartilaginous Fish –
  
  - d. Bony Fish –
  
  - e. Mammal –
  
  - f. Arthropod –
  
  - g. Echinoderm –
  
4. Watch the two “Sea otter 101” videos near the bottom of the sea otter information page. List two facts you learned about sea otter feeding and fur.

#### Habitat 4: Coral Reefs

1. What type of organism builds coral reefs?
2. What material/chemicals is a coral reef composed of?
3. What gives coral their bright colors?
4. Who grows faster, coral or giant kelp? Provide the growth rate for each organism.
5. Why is knowledge of the growth rate of an organism important for conservation efforts?
6. How specifically does global warming effect the health and survival of coral? Please be very specific.

#### Habitat 5: Open Waters

1. Which of the whales shown is the largest animal on the planet? How long is it?
2. Watch the video entitled "Humpback Feast" on the humpback whale information page. What are two different organisms that the whales are trying to catch, as they lunge upward with their mouths open?

3. The notches and white patches on the tails of humpback whales are used to identify individual whales to help track their movement. What is the name of the tail of the humpback whale?
4. What is the Phylum and Class to which whales belong?
5. Which class of vertebrates do sea turtles belong to?

#### [Habitat 6: Reefs and Pilings](#)

1. Read about the giant pacific octopus. What form of protection do they have from predators?
2. What Phylum do the octopus belong to?
3. Why do moray eels open and close their mouths in such a fierce way?

## APPENDIX

### IDENTIFYING TRAITS OF SOME COMMON PHYLA AND CLASSES

CNIDARIA - jellyfish, coral, sea anemones

Radial symmetry, soft body, stinging tentacles

MOLLUSKA - snails, clams, oysters, octopuses, squid

Soft body, most with external shell, ventral foot for locomotion

ANNELIDA – segmented worms

Soft bodied worms with segments, often (but not always) have pair of legs on each segment

ARTHROPODA - crabs, shrimp, lobsters, insects, spiders

Segmented body, jointed exoskeleton, many legs

ECHINODERMATA - sea stars, sea urchins, sand dollars, brittle stars

Radial symmetry (parts in five's), hard exoskeleton with spines, tube feet for attachment and locomotion

CHORDATA - mostly vertebrates (classes listed below)

Gill slits, notochord, dorsal hollow nerve tube, postanal tail (these traits present at some point in life cycle)

CHONDRICHTHYES - sharks, sting rays

Fishes with a cartilage skeleton

OSTEOICHTHYES - modern fish, i.e. trout, goldfish, bass, grouper, tuna, barracuda, etc.

Fishes with a bony skeleton

REPTILIA - snakes, lizards, turtles, tortoises

Vertebrates with dry scaly skin, usually four legs, eggs that won't dry out on land, most land-dwelling

AVES - birds

Vertebrates with four limbs (two are wings) feathers, eggs won't dry out on land

MAMMALIA - whales, porpoises, sea otters, cats, dogs, beavers

Vertebrates with four limbs, hair or fur, mammary glands to nurse young, live birth

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