

INTERTIDAL MARINE BIOLOGY LAB SHEETS

Phylum Mollusca

List some features of molluscs.

How do chitons protect themselves?

To which class do sea snails and nudibranchs belong?

How do nudibranchs protect themselves?



To which class do chitons belong? Why?

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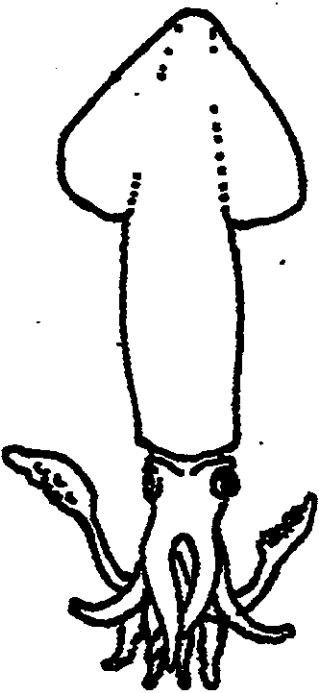
To which class do clams belong? What are the common characteristics of this class?

To which class does a squid belong?

Where are the squid's hard parts? How do squid use these hard parts?

How do they grow? (Hint: Find the growth lines on a bivalve.)

What has the foot evolved into?



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Phylum Cnidaria

Give some examples of cnidarians.

Look in the rocky shore habitats display. Use your pinky finger to touch a sea anemone's tentacle. How does it feel?

What causes this feeling? How does this benefit the sea anemone?

List some features of cnidarians.

Would you normally expect to find a healthy jellyfish in the intertidal zone at low tide? Why or why not?



How have the following cildarians adapted to their environment?
 Fill out the table below (see example).

Species and Habitat	Sun	Waves	Predators
Pink-tipped anemone <i>(Anthopleura elegantissima)</i> High intertidal	<ul style="list-style-type: none"> contracts sticks shells and sand to column to keep moist 	<ul style="list-style-type: none"> attaches column to rock contracts into streamlined blobs 	<ul style="list-style-type: none"> uses nematocytes as deterrent shells and sand also act as camouflage
Burying anemone <i>(Anthopleura artemisia)</i> Middle Intertidal Protected Sandy Shore			
Plumose anemone <i>(Metridium senile)</i> Low Intertidal and Subtidal			

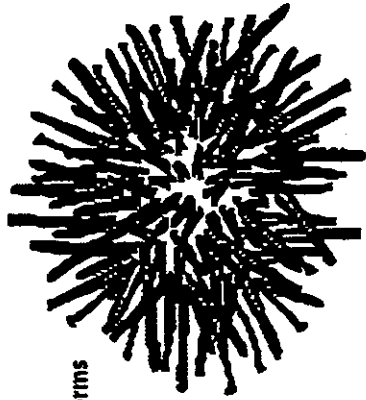
-TIDES.
• wave action
• desiccation.

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List some features of echinoderms.

Based on your observations, hypothesize what type of food the animals eat and how they might eat it.

Compare the mouth parts of any two echinoderms on display.



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Phylum Echinodermata

Using the table provided, draw or describe the features listed.

Note: Some echinoderms have modified or hidden their ancestry. Some may be missing certain features altogether.

Animal	Spines	Pincers	Tube Feet	Pentaradial Symmetry
Sea Star				
Sea Urchin				
Sea Cucumber				
Sand Dollar				

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Intertidal Ecology

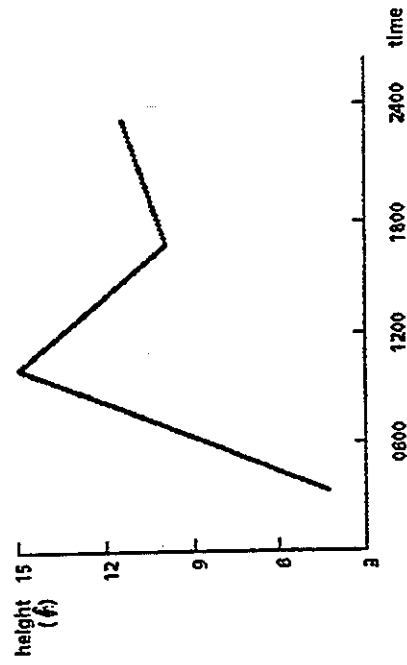
What causes the tides?

Using the tide calendar and tidetable provided:

When do the high tides occur on Friday, November 7th?

When do the low tides occur on Friday, November 7th?

Friday, November 7 — Point Atkinson
Example of a Tide Calendar



Example of a Tidetable

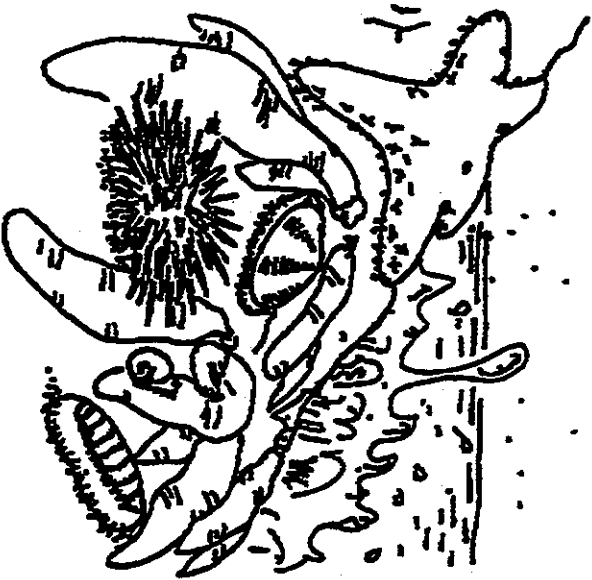
day	time	height (m)
6	0250	3.7
TH	1025	14.8
JE	1630	10.3
	2040	11.8
7	0345	4.3
FR	1120	14.9
VE	1745	9.9
	2155	11.4
8	0445	5.1
SA	1215	15.0
	1850	9.1
SA	2330	11.2

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Splash Zone

What are some stresses of living in the splash zone?

How have animals adapted to living in the splash zone?



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Intertidal Zone

How can you tell where the splash zone ends and the intertidal zone begins?



How have animals adapted to living in the intertidal zone?

What are some stresses of living in the intertidal zone compared to those of the splash zone?

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Subtidal Zone

What are some stresses of living in the subtidal zone?

How have animals adapted to living in the subtidal zone?

Compare the animals living in the intertidal zone to those living in subtidal habitats.



How do people affect the lives of animals in the intertidal and subtidal zones?

INTERTIDAL MARINE BIOLOGY LAB SHEETS

Phylum Arthropoda

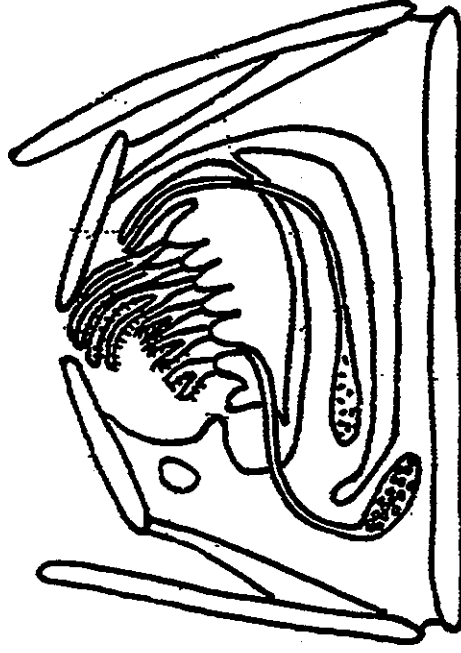
List some features of arthropods.

Identify one of the live arthropods on the table using the attached key.
Write down both the common and scientific names.

Common name:

Scientific name:

Look at the barnacle cross-section below. Label the features that indicate that it is an arthropod.



Choose two arthropods on display.
Consider how the form relates to function for each species and fill out the table on the next page.

Species	Form		Function
	Number of Body Parts (eg. pincers, walking legs)	Specialization	Life Style
Hermit Crab <i>Pagurus</i> sp.			
Shore Crab <i>Hemigrapsus oregonensis</i>			
Dungeness Crab <i>Cancer magister</i>			
Two Spot Prawn <i>Pandalus platyceros</i>			
Kelp Crab <i>Pugettia</i> sp.			

Proportion of Invertebrate Species Compared to Vertebrate Species

