



Geometry of Marine Invertebrates

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We are going to be studying the geometry of several marine invertebrates to examine how their geometric properties might be adaptive. For this first assignment, you will need to find three pieces of information for each animal shown below:

- a) The 3-dimensional shape (as near as you can get to a typical 3D shape as possible, that is)
- b) The formula for finding the surface area of this shape
- c) The formula for finding the volume of this shape

First, let's start with understanding what these geometry terms mean. Do a little research with the posters and the suggested websites **below**. Put in your words what each of these two terms means:

Surface Area:

Volume:

Be sure to check the resources provided for this assignment. They may be exactly what you need.

Animal 1: *Sea Anemone*

Name that Shape:

Surface Area formula:

Volume formula:

Animal 2: *Basket Star*

Name that Shape:

Volume formula:

Animal 3: *Sea Urchin*

Name that Shape:

Surface Area formula:

Volume formula:

Animal 4: *Chiton*

Name that Shape:

Volume formula:

Animal 5: *Limpet*

Name that Shape:

Surface Area formula:

Volume formula:

Ideas/Predictions: Answer the two questions below with complete sentences.

1. *What reasons or ideas can you come up with for why it would be useful for a scientist to study the geometry of an animal?*

Here's a small, but obscure hint for the question above. Don't worry if you don't understand the connection yet - we'll get to this soon.

2. *Data for the past century show that our climate is warming. What are some things that might happen in the ocean as water temperatures increase?*