



# Chapter One: Measurement

- **3.1 Position, Coordinates, and Maps**
- **3.2 Topographic Maps**
- **3.3 Bathymetric Maps**



## Section 3.2 Learning Goals

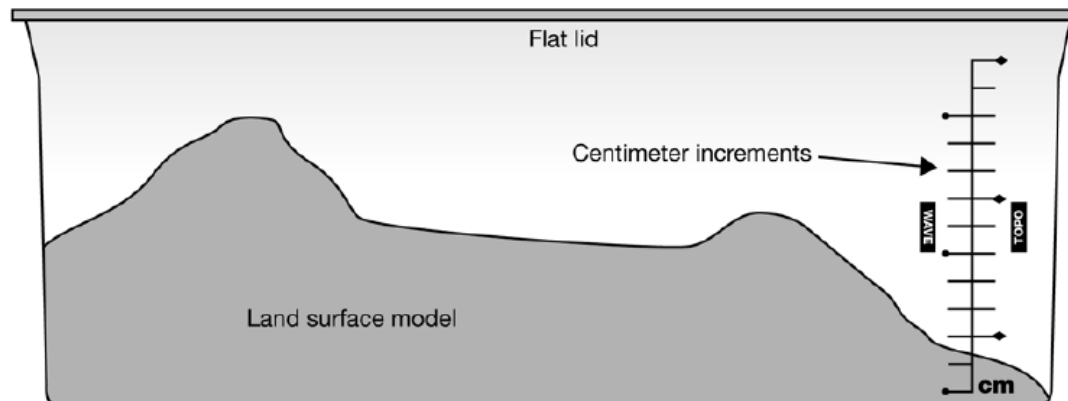
- **Construct a topographic map and describe its features.**
- **Use relevant vocabulary, like relief and elevation, to describe map features.**
- **Describe the role of technology in topographic mapping advances over time.**

## Investigation 3B

# Topographic Mapping

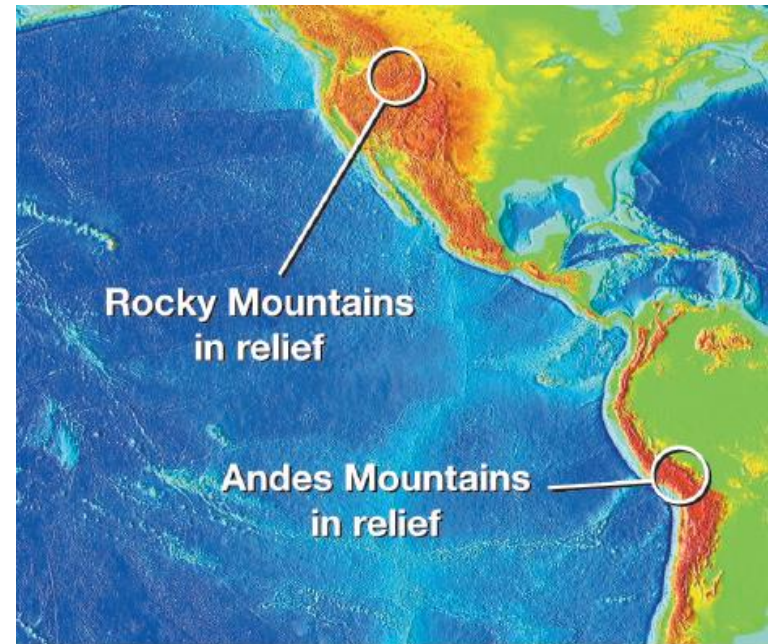
- **Key Question:**

*How do you make a topographic map from a 3-dimensional surface?*



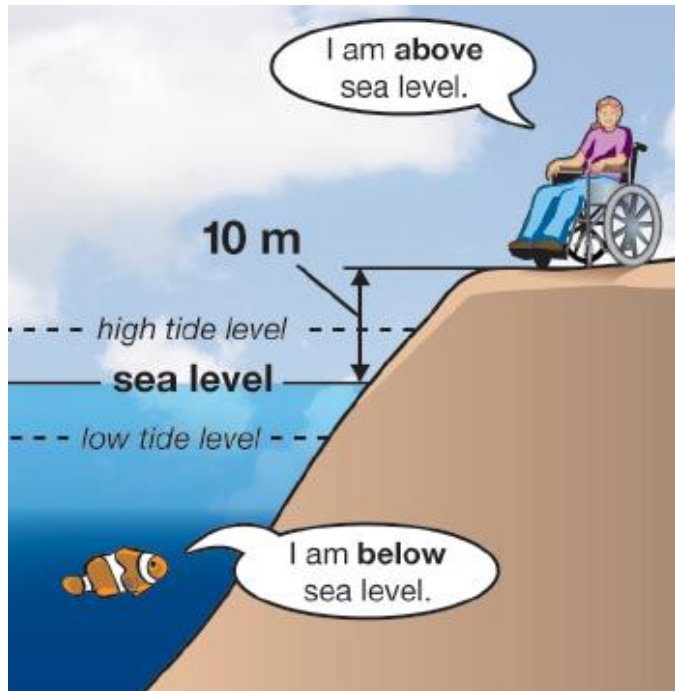
## 3.2 Mapping Earth

- **Relief** describes the distance between high and low places on a map.
- **Relief maps** show mountains and other land features using raised bumps, shading or colors.



What color shows the deep places in the ocean?

## 3.2 Mapping Earth



Can you estimate how far the fish is below sea level?

- **Elevation** means the height of an object measured from a reference level.
- Usually the reference level that is used on maps is called **sea level**.
- **Sea level** is an average level of the ocean.



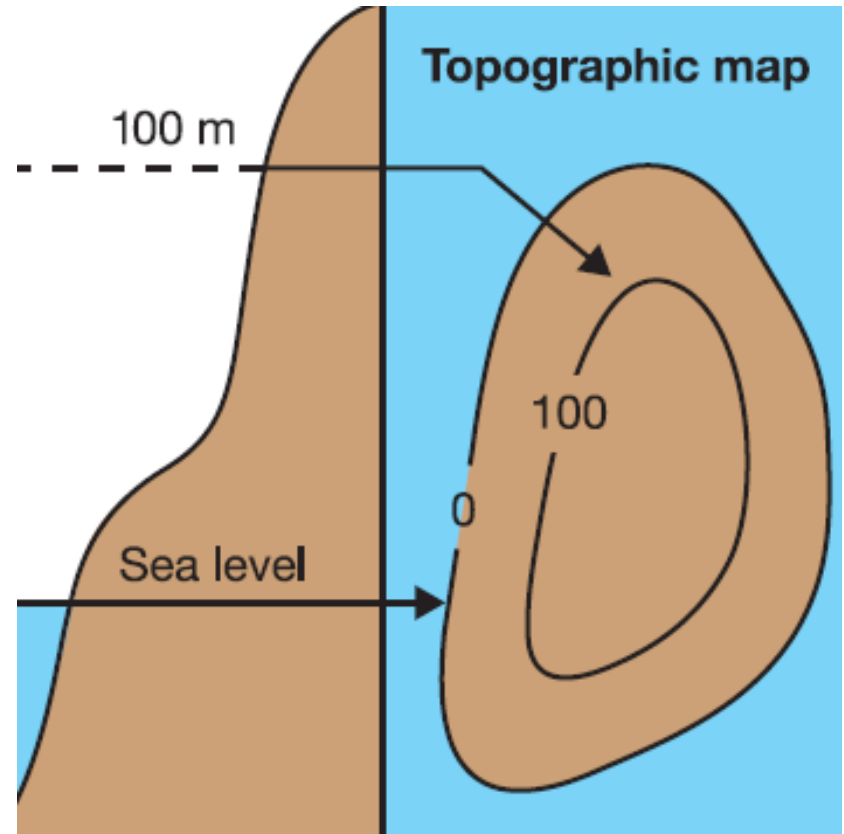
## 3.2 Topographic maps



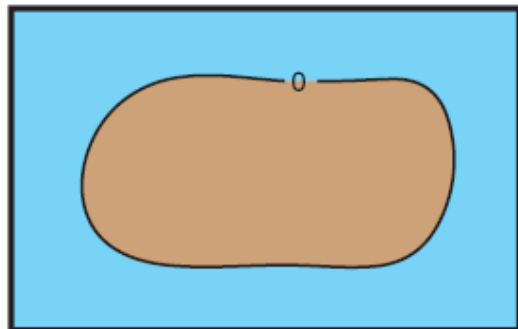
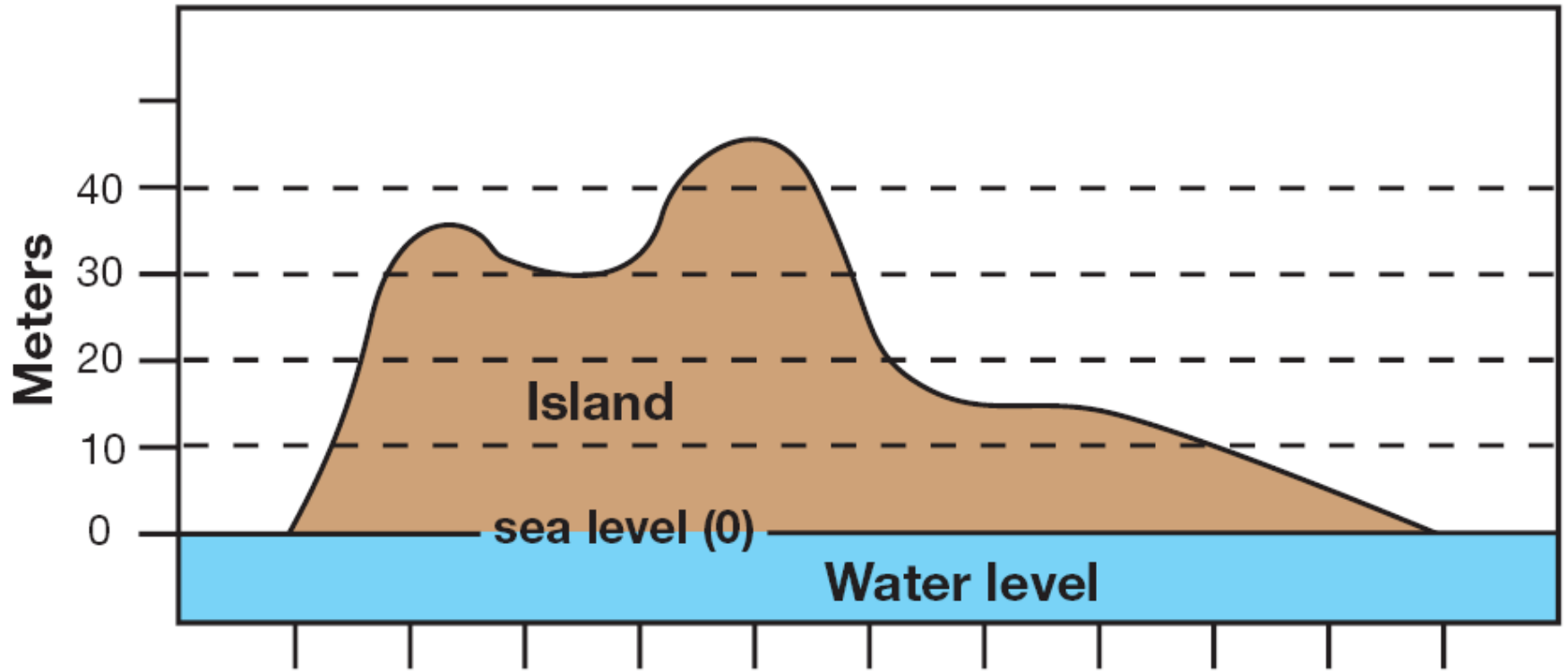
- **A *topographic map* is a map that shows elevation.**
- **Topographic maps use special lines called contour lines to show mountains and other land features.**

## 3.2 Topographic maps

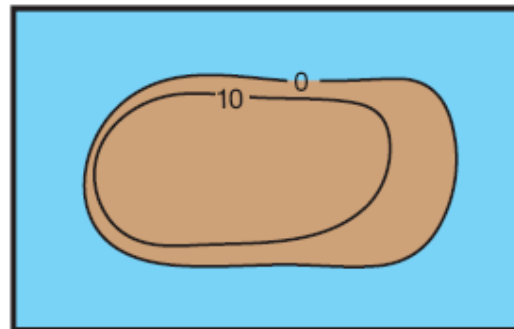
- **Topographic maps show the difference in elevation through the use of *contours*.**
- **Contour lines connect points of equal elevation.**



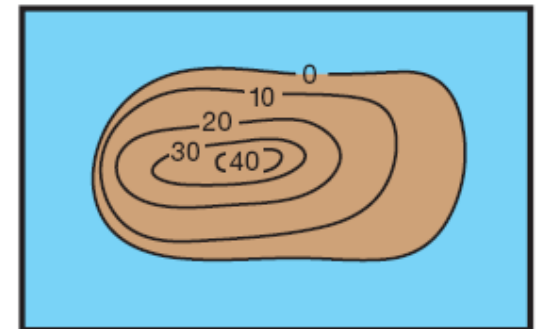
# Making a Topographic Map



0 contour line



0 and 10 contour lines







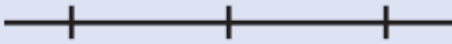



Topographic map of the island





# Topographic Map Symbols

Topographic contour		River	
Bathymetric contour		Lake	
Campground		Highway	
Railroad track		Woodland	



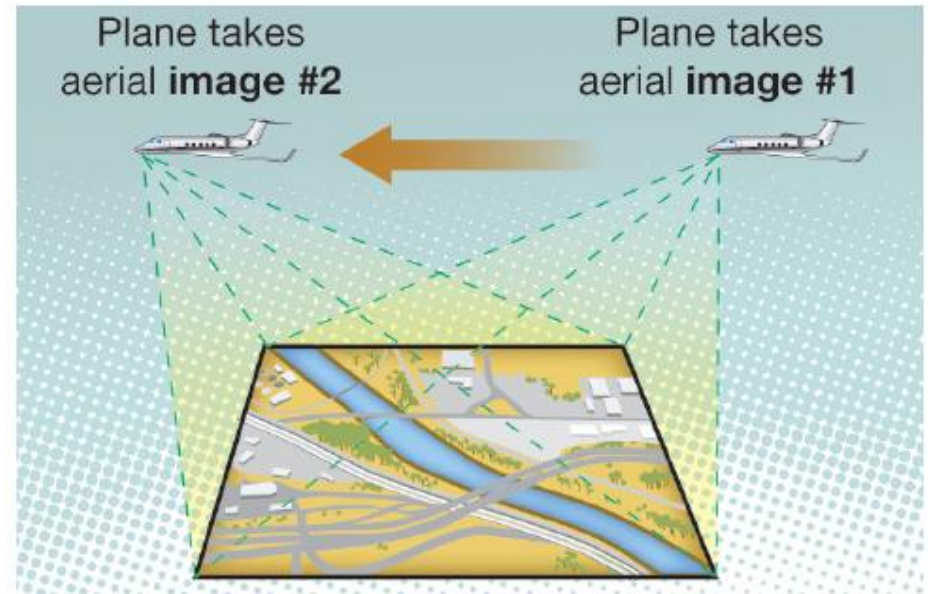
## 3.2 Technology and topographic maps



- In 1879, the United States Geological Survey (USGS) was created by an act of the U.S. Congress.

## 3.2 Making topographic maps

- **Today, aerial photographs are overlapped to create a 3-D image of an area.**



## 3.2 Making topographic maps

- **Special software, computer technology, and stereo glasses are used to make topographic maps.**

