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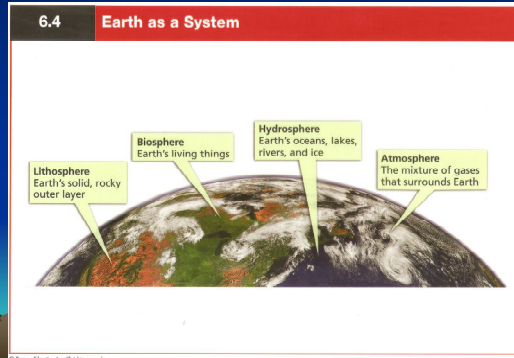
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## Slide 2


# The Earth System

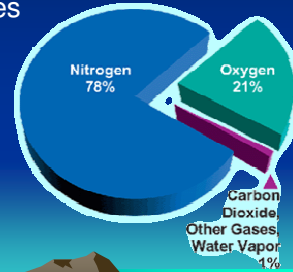
Earth System:

4 main parts 1. Atmosphere 2. Hydrosphere 3. Lithosphere 4. Biosphere

[illegible]

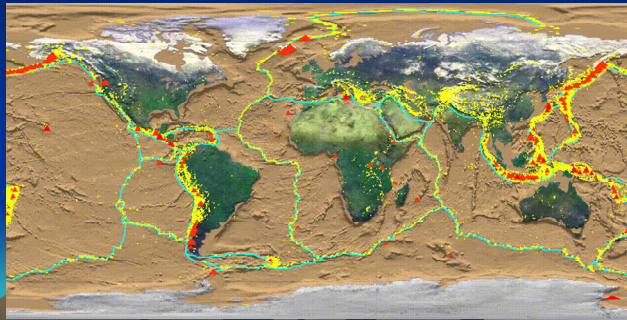
# Atmosphere

- The layer of gases that surround and form an envelope around the Earth.
    - Consists of several gases
      - Nitrogen – 78%
      - Oxygen – 21%
      - CO<sub>2</sub>, H<sub>2</sub>O, others – 1%
- 

[illegible]

## Lithosphere

- Earth's solid, rocky outer layer
  - The continents, islands and ocean floors



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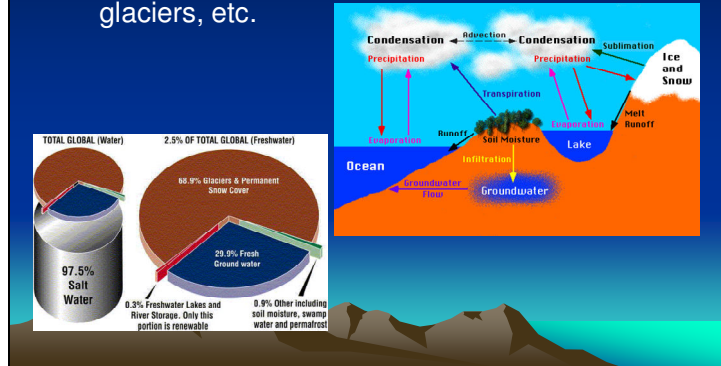
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## Hydrosphere

- All of the water present on the planet
  - Oceans, lakes, streams, ice caps, snow, glaciers, etc.

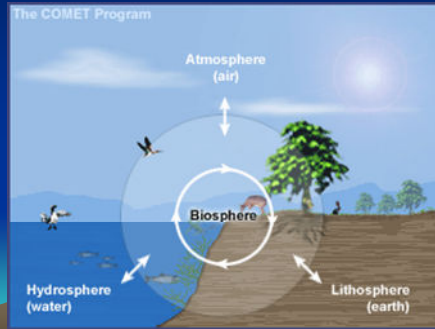


# Biosphere

- That area of the land, water and air that contains life!

The diagram, titled "The COMET Program", illustrates the Biosphere as a central sphere. This sphere is surrounded by three other spheres: the Atmosphere (air) above, the Hydrosphere (water) to the left, and the Lithosphere (earth) to the right. Arrows indicate the flow of energy and matter between the Biosphere and these three spheres. The Biosphere itself contains various life forms, including a tree, a bird, a fish, and a small animal. The background shows a landscape with mountains, a sun, and a blue sky.

- That area of the land, water and air that contains life!





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## The Earth's Surface

- **Topography:** The shape of the land. The topography of an area includes the area's **elevation**, **relief**, and **landforms**.



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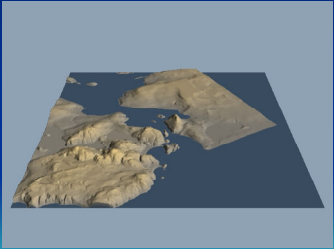
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## Elevation - Relief

- **Elevation** - height above sea level
- **Relief** - difference between the highest and the lowest points of an area



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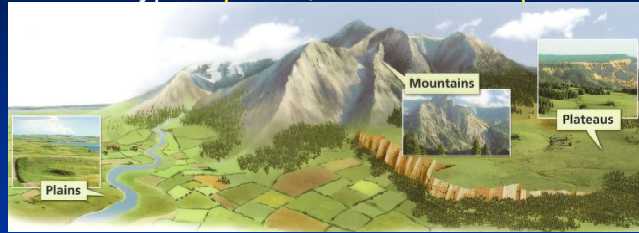
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# Landforms

- 3 main types: **plains, mountains & plateaus.**



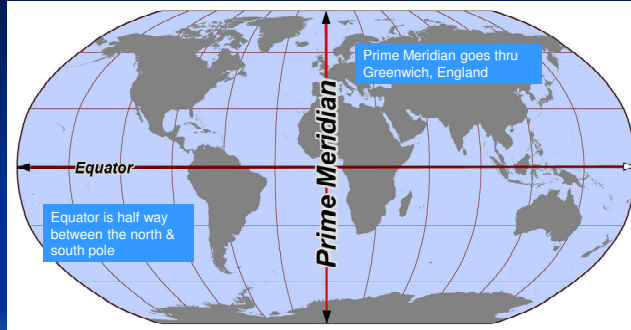
**Plains:** made up of flat or gently rolling land with low relief

**Mountains:** made up of high elevation and high relief.

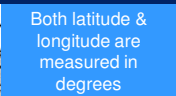
**Plateaus:** high elevation and a more or less level surface

[illegible]

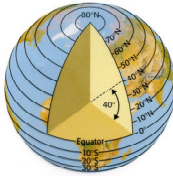
## Earth's Grid – Equator & Prime Meridian



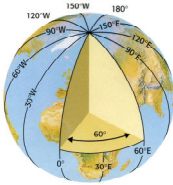
- Latitude: the distance north or south of the equator
- Longitude: the distance east or west of the prime meridian



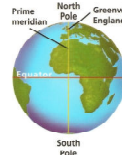
# Latitude & Longitude



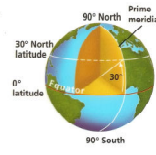
### Lines of Longitude



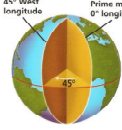
### Equator and Prime Meridian



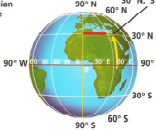
Latitude



Longitude

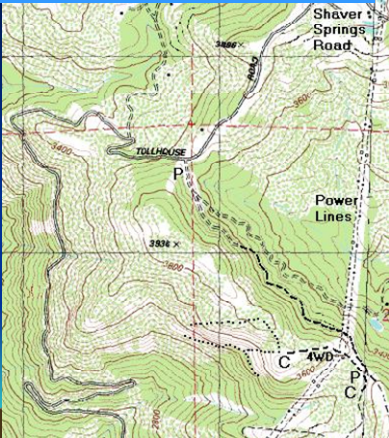


### Locating a Point



# Topographic Maps

- They provide information on the elevation, relief, and slope of the ground surface
- **You must familiarize yourself with the map's scale and symbols and interpret the map's contour lines.**
- closely spaced contour lines indicate **steep slopes**.
- closed loop with no other contour lines inside it indicates a **hilltop**.
- V-shaped contour lines pointing uphill indicate a **valley**.

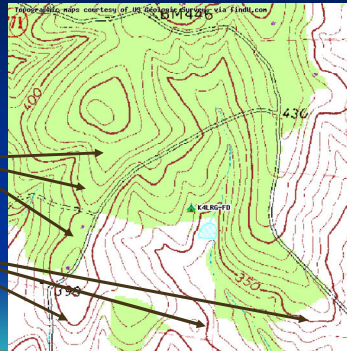


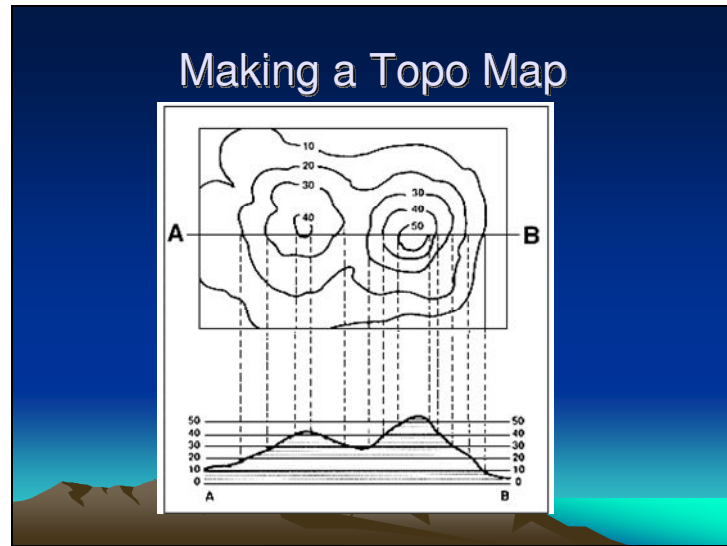
The map displays a section of land with various topographic features. Contour lines are drawn at intervals, with labels such as 3400, 3600, 3800, 4000, 4200, 4400, 4600, 4800, 5000, 5200, 5400, 5600, 5800, 6000, 6200, 6400, 6600, 6800, 7000, 7200, 7400, 7600, 7800, 8000, 8200, 8400, 8600, 8800, 9000, 9200, 9400, 9600, 9800, 10000, 10200, 10400, 10600, 10800, 11000, 11200, 11400, 11600, 11800, 12000, 12200, 12400, 12600, 12800, 13000, 13200, 13400, 13600, 13800, 14000, 14200, 14400, 14600, 14800, 15000, 15200, 15400, 15600, 15800, 16000, 16200, 16400, 16600, 16800, 17000, 17200, 17400, 17600, 17800, 18000, 18200, 18400, 18600, 18800, 19000, 19200, 19400, 19600, 19800, 20000, 20200, 20400, 20600, 20800, 21000, 21200, 21400, 21600, 21800, 22000, 22200, 22400, 22600, 22800, 23000, 23200, 23400, 23600, 23800, 24000, 24200, 24400, 24600, 24800, 25000, 25200, 25400, 25600, 25800, 26000, 26200, 26400, 26600, 26800, 27000, 27200, 27400, 27600, 27800, 28000, 28200, 28400, 28600, 28800, 29000, 29200, 29400, 29600, 29800, 30000, 30200, 30400, 30600, 30800, 31000, 31200, 31400, 31600, 31800, 32000, 32200, 32400, 32600, 32800, 33000, 33200, 33400, 33600, 33800, 34000, 34200, 34400, 34600, 34800, 35000, 35200, 35400, 35600, 35800, 36000, 36200, 36400, 36600, 36800, 37000, 37200, 37400, 37600, 37800, 38000, 38200, 38400, 38600, 38800, 39000, 39200, 39400, 39600, 39800, 40000, 40200, 40400, 40600, 40800, 41000, 41200, 41400, 41600, 41800, 42000, 42200, 42400, 42600, 42800, 43000, 43200, 43400, 43600, 43800, 44000, 44200, 44400, 44600, 44800, 45000, 45200, 45400, 45600, 45800, 46000, 46200, 46400, 46600, 46800, 47000, 47200, 47400, 47600, 47800, 48000, 48200, 48400, 48600, 48800, 49000, 49200, 49400, 49600, 49800, 50000, 50200, 50400, 50600, 50800, 51000, 51200, 51400, 51600, 51800, 52000, 52200, 52400, 52600, 52800, 53000, 53200, 53400, 53600, 53800, 54000, 54200, 54400, 54600, 54800, 55000, 55200, 55400, 55600, 55800, 56000, 56200, 56400, 56600, 56800, 57000, 57200, 57400, 57600, 57800, 58000, 58200, 58400, 58600, 58800, 59000, 59200, 59400, 59600, 59800, 60000, 60200, 60400, 60600, 60800, 61000, 61200, 61400, 61600, 61800, 62000, 62200, 62400, 62600, 62800, 63000, 63200, 63400, 63600, 63800, 64000, 64200, 64400, 64600, 64800, 65000, 65200, 65400, 65600, 65800, 66000, 66200, 66400, 66600, 66800, 67000, 67200, 67400, 67600, 67800, 68000, 68200, 68400, 68600, 68800, 69000, 69200, 69400, 69600, 69800, 70000, 70200, 70400, 70600, 70800, 71000, 71200, 71400, 71600, 71800, 72000, 72200, 72400, 72600, 72800, 73000, 73200, 73400, 73600, 73800, 74000, 74200, 74400, 74600, 74800, 75000, 75200, 75400, 75600, 75800, 76000, 76200, 76400, 76600, 76800, 77000, 77200, 77400, 77600, 77800, 78000, 78200, 78400, 78600, 78800, 79000, 79200, 79400, 79600, 79800, 80000, 80200, 80400, 80600, 80800, 81000, 81200, 81400, 81600, 81800, 82000, 82200, 82400, 82600, 82800, 83000, 83200, 83400, 83600, 83800, 84000, 84200, 84400, 84600, 84800, 85000, 85200, 85400, 85600, 85800, 86000, 86200, 86400, 86600, 86800, 87000, 87200, 87400, 87600, 87800, 88000, 88200, 88400, 88600, 88800, 89000, 89200, 89400, 89600, 89800, 90000, 90200, 90400, 90600, 90800, 91000, 91200, 91400, 91600, 91800, 92000, 92200, 92400, 92600, 92800, 93000, 93200, 93400, 93600, 93800, 94000, 94200, 94400, 94600, 94800, 95000, 95200, 95400, 95600, 95800, 96000, 96200, 96400, 96600, 96800, 97000, 97200, 97400, 97600, 97800, 98000, 98200, 98400, 98600, 98800, 99000, 99200, 99400, 99600, 99800, 100000. The map also shows a network of roads, including Shever Springs Road and Tolhouse Road, and a power line. A red dashed line is drawn across the map, and a red 'X' is marked at the intersection of the red dashed line and the 3800 contour line. The map is titled 'Topographic Maps' in a large, bold, black font at the top.

- They provide information on the elevation, relief, and slope of the ground surface
- **You must familiarize yourself with the map's scale and symbols and interpret the map's contour lines.**
- closely spaced contour lines indicate **steep slopes**.
- closed loop with no other contour lines inside it indicates a **hilltop**.
- V-shaped contour lines pointing uphill indicate a **valley**.

# Reading a Topo Map

- **Contour lines**
  - Thin lines
- **Contour interval**
  - Spaces between
- **Index contour**
  - Thick lines





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