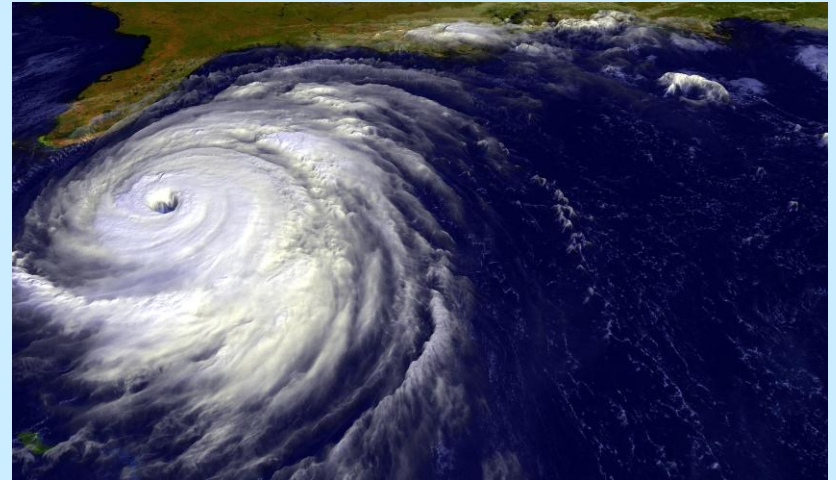




Earth Science!

Late summer and early fall is hurricane season. Hurricanes are deadly, so the ability to track them is very important, so we can warn people.



How can we plot something on a globe?



Earth Science!

Vocabulary:



Latitude = how far North or South of the middle of the Earth you are.





Earth Science!

Vocabulary:



Equator = an imaginary line separating the northern and southern hemispheres.



The Earth's
“belt.”

Sailors can see how far north or south they are by seeing how high the Sun is at noon

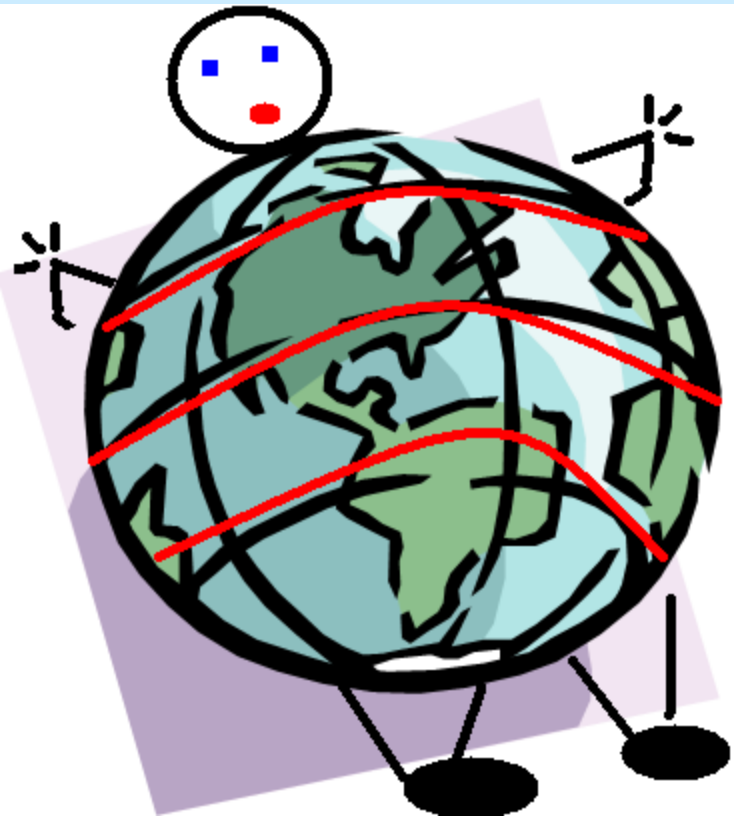


Earth Science!

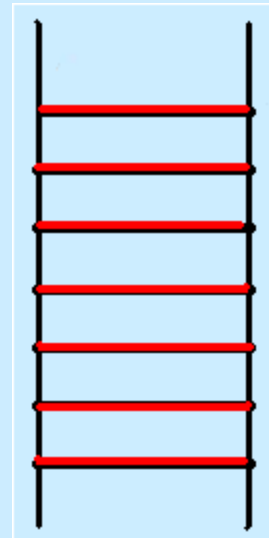


The Equator is at 0 degrees Latitude.

How can we remember that “latitude” means going up (North) or down (South) from the equator?



LAT =
FAT?



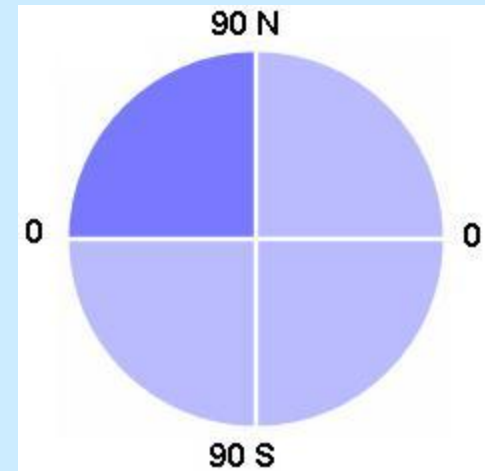
Climb to the north
pole on the
LADDER?



Earth Science!



A circle has ___ degrees, and $\frac{1}{4}$ of that is ___, so the North Pole is at 90 degrees North Latitude.



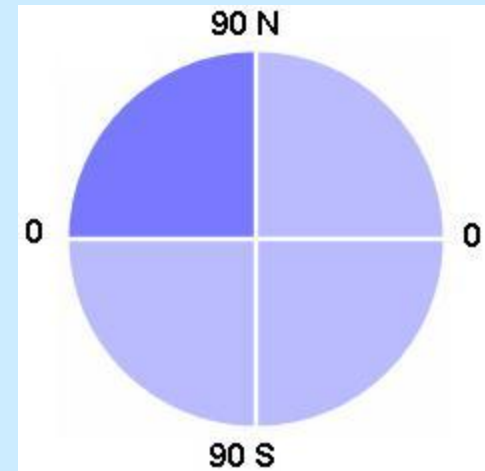


Earth Science!



That means that the South Pole is at

_____ degrees _____ Latitude.

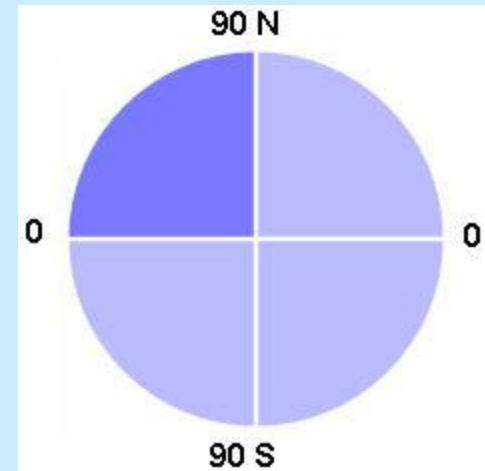




Earth Science!



And half-way between the Equator and the North Pole is _____ ...





Earth Science!



And half-way between the Equator and the North Pole is...





Earth Science!

Vocabulary:



Longitude = how far East or West you are.

East or West of
WHAT??





Earth Science!

Vocabulary:



Longitude = how far East or West you are.

There is no obvious starting point, so somebody had to pick one.



Actually, every major civilization thought that they were the center of the world. China called itself the “Middle Kingdom”. On February 17, 1600 Giordano Bruno was driven naked through the streets of Rome and then burned at the stake for suggesting that the Earth is not the center of the Universe



Earth Science!

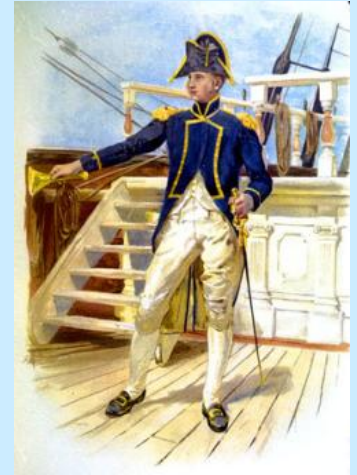
Vocabulary:



Longitude = how far East or West you are.

But most recently it was... Great Britain.

Since the British Navy ruled the oceans,
they chose



The British Naval Yard
at Greenwich, England
as
The Prime Meridian,
0 degrees Longitude.



Earth Science!

Vocabulary:



Prime Meridian = an imaginary line

running from North Pole to South Pole

through Greenwich, England.

0 degrees Longitude





Earth Science!

Vocabulary:



Longitude = how far East or West you are.

The Royal Observatory



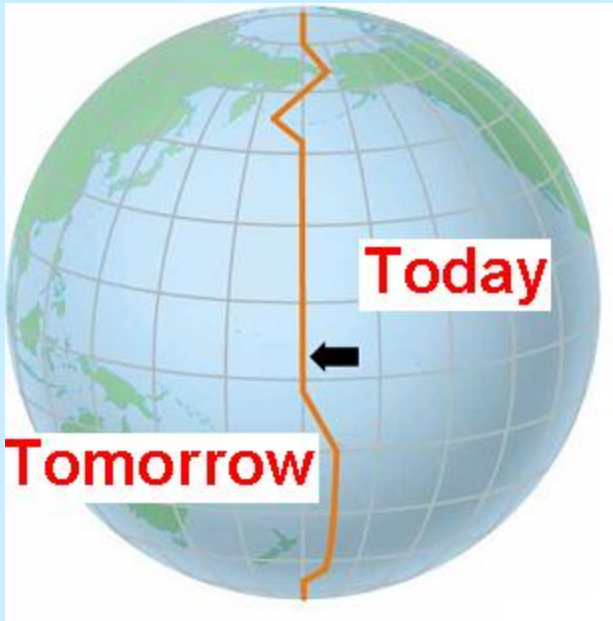
at Greenwich,
England



Earth Science!

Vocabulary:

180 degrees East or West Longitude – half way around the world from the Prime Meridian, is the **International Date Line**.



This was drawn as a crooked line so that you would not have an island where it is Monday on one side and Tuesday on the other.



Earth Science!

You know that a circle has _____ degrees.

Since the Earth is very large,
1 degree at the Equator could be over 100 km.

That is too big to find anything accurately.

So, we will divide each degree into minute parts....



Earth Science!

There will be 60 minutes in each degree.

That should be easy to remember – 60 minutes.

But watch your spelling!

You want a minute – not a minuet!!





Earth Science!

A minute is still too large for accuracy – two objects one minute apart can still be almost 2 km apart.

So, we can divide each minute into 60 _____.



Earth Science!

We are NOT talking about minutes and seconds of time!

Think of it this way:

Degrees can take you to Connecticut – anywhere in CT

Degrees then Minutes would get you from the edge of CT to West Hartford

Degrees then Minutes then Seconds would get you to the front door of PG08



Earth Science!

How to write it:

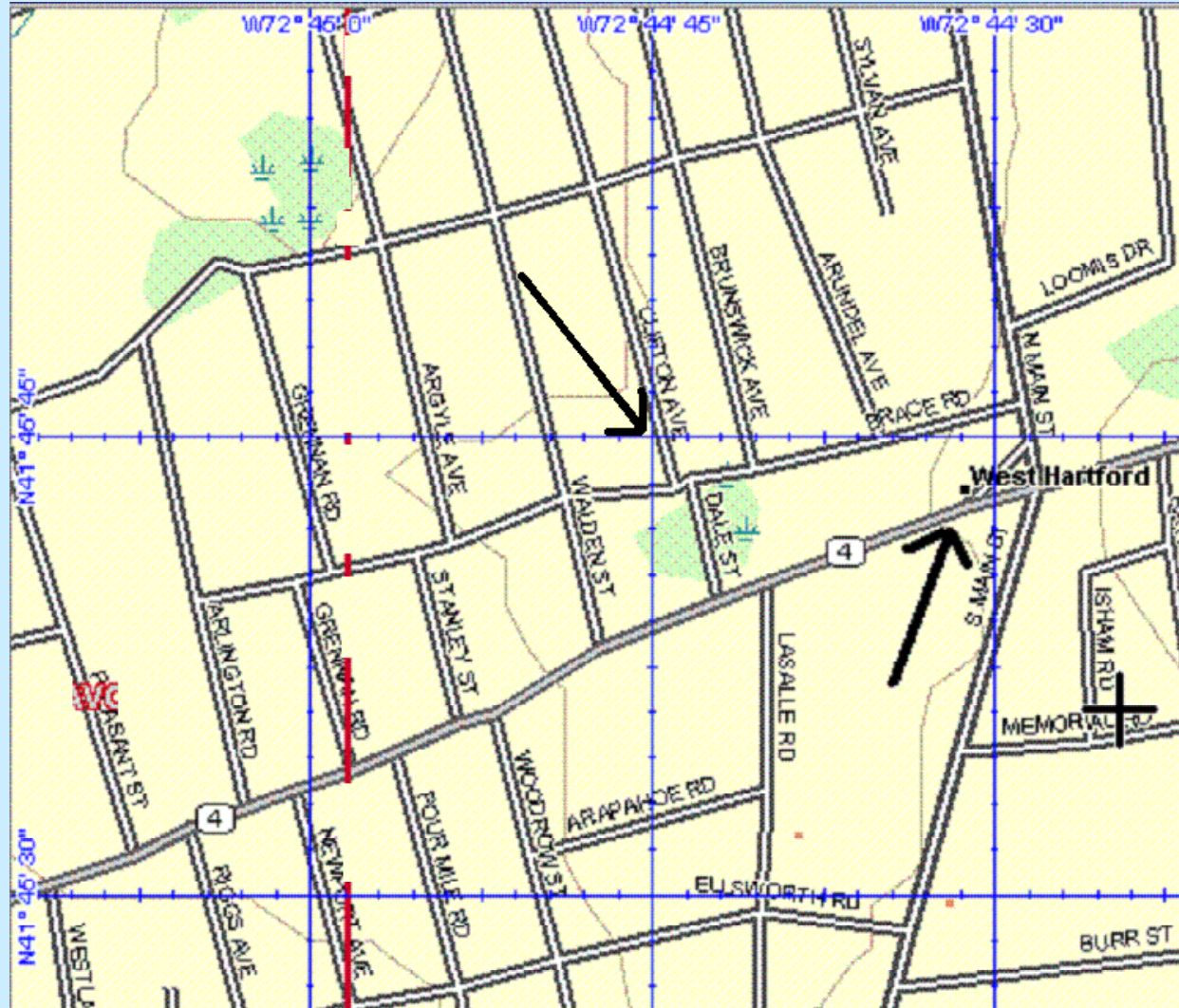
West Hartford center is

$41^{\circ} 45' 46''$ North
(of Equator)

$72^{\circ} 44' 35''$ West
(of Prime Meridian)

Hall High is:

$41^{\circ} 47' 35.71''$ North
 $72^{\circ} 45' 18.56''$ West





Earth Science!

Marking the directions on a map:

We can't always assume that the top of a map is North.

So mapmakers will usually draw an arrow pointing towards North

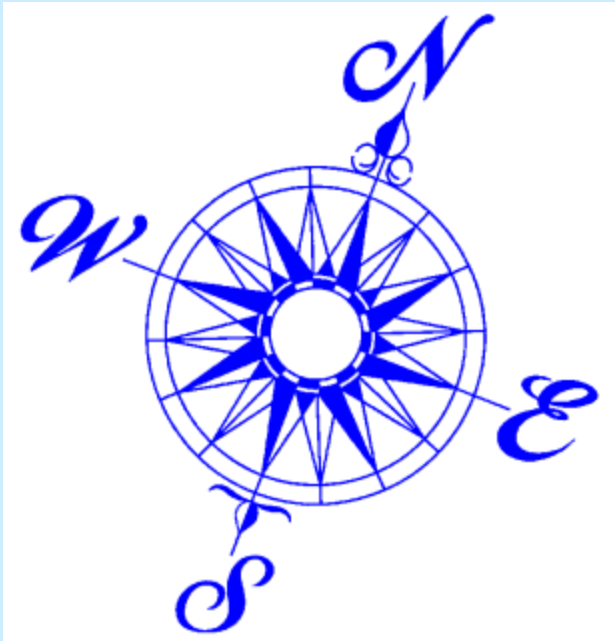




Earth Science!

Sometimes these arrows can be very artistic.

Then we have what is called a “compass rose” because it looks like a flower.



What did the mapmaker give his girlfriend for Valentine’s Day?