



How to use a planisphere

What in the world is in the night sky?



What is a planisphere?



- A planisphere is a map of the night sky.
- It helps sky gazers to figure out where the constellations should be.

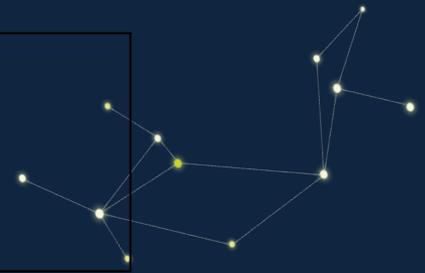
Before we begin...



- We need to know some common basic terms, and we need to know directions.

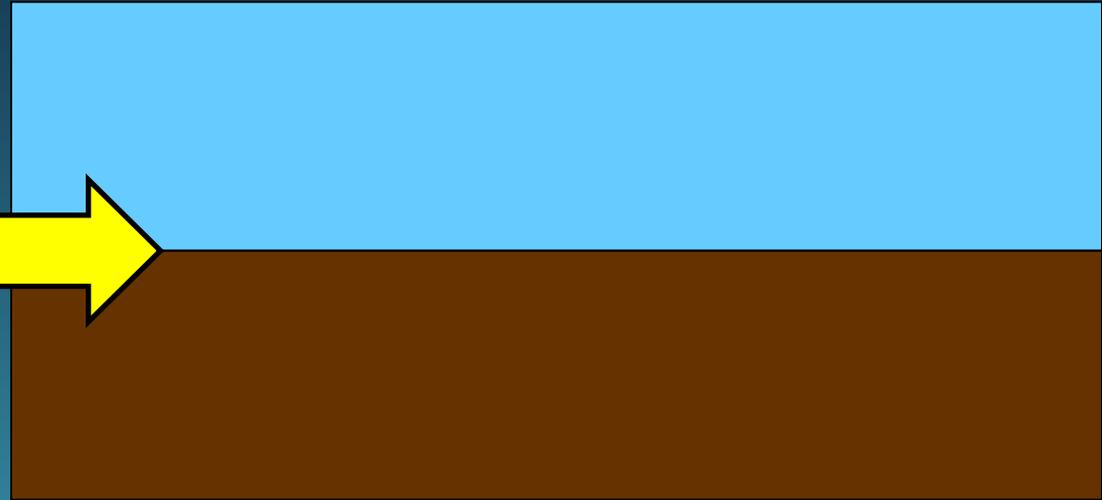


Horizon



- The horizon is the place where earth meets sky.

Horizon



Zenith



- the point of the celestial sphere that is directly over the observer and 90 degrees from all points on that person's horizon
- The top of the sky!



Azimuth



- the angular distance along the horizon between a point of reference, usually the observer's bearing, and another object



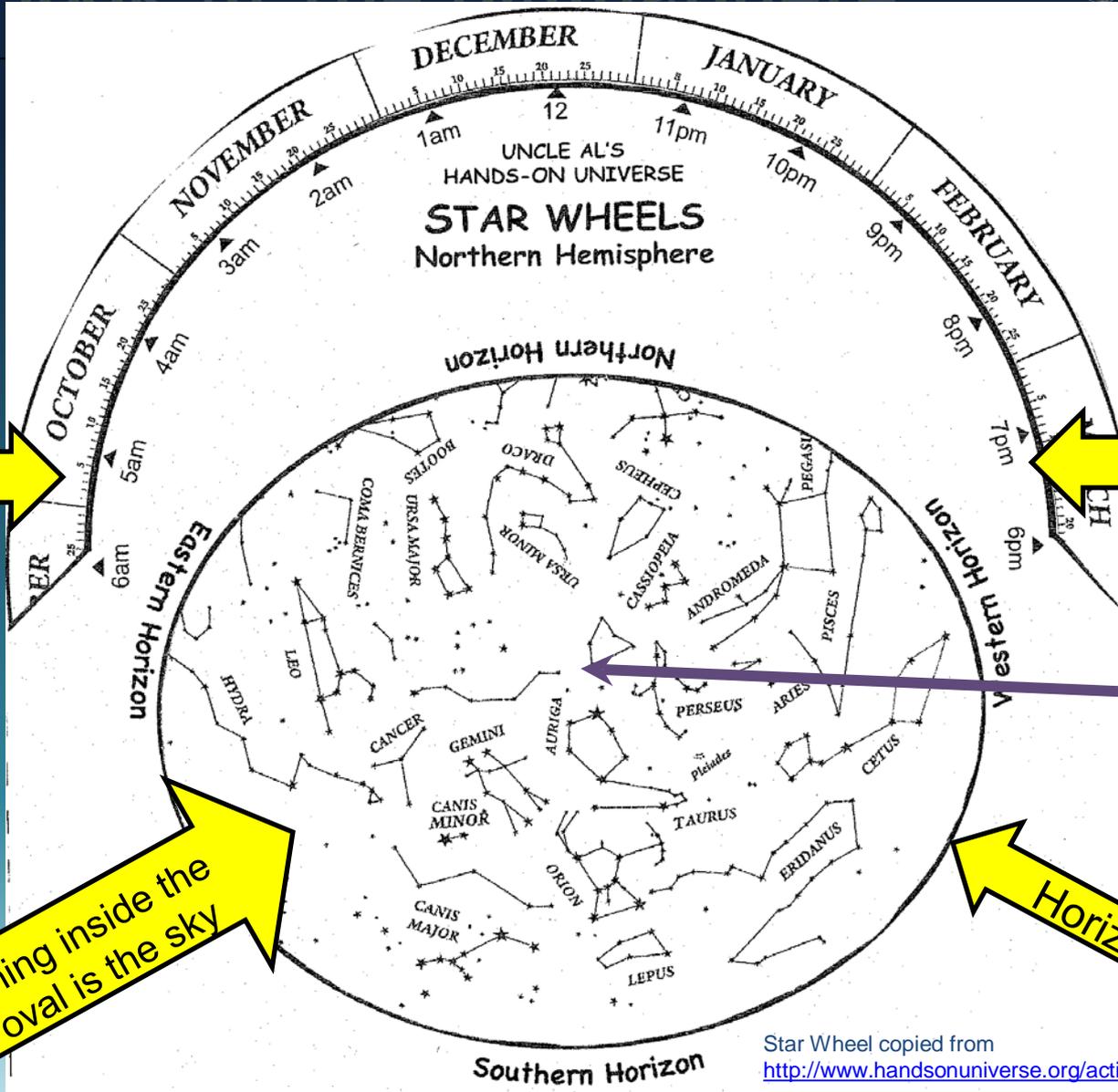
How to use a compass...



- A compass always points North.
- Make the compasses on the table line up with the N.
- Point to East
- Point to West



Let's look at the plainsphere



Date

Time

Everything inside the black oval is the sky

Horizon

The very center of the circle is the zenith, the highest place in the sky; right above your head!

How to Use the Sky Wheel

To find a constellation in the sky using the Star Wheel, follow these steps:

What date and time of night?

Rotate the Star Wheel in the Star Holder until your desired time of night lines up with the desired date.

**Which horizon is the
constellation closest to?**



Find the constellation on the Star Wheel
and note which horizon it is closest to.



How do I make it right-side up?



- Orient the Star Holder so that the horizon the constellation is near is at the bottom. This will allow that part of the sky to look right-side up to you. For example, if your constellation is closest to the northern horizon, flip the Star Holder upside down so that you are reading northern horizon at the bottom of the oval.



How high is the constellation in the sky?



Is the constellation closer to the zenith
(center of the map) or closer to the
horizon?

If it is near the zenith, that means it is
over your head. If it is near the
horizon, then it is near the ground.



What shape is the constellation?



- Note the pattern of stars in the constellation.

Can I see the constellation in the sky?

Find it!



Let's practice...



- Tell your shoulder partner what is the horizon.
- The oval hole on the planisphere represents the visible sky. What part of this oval represents the Earth's horizon?



Set the wheel to the month, day, and the time as 8pm. That is, line up the time of day with the day and month.



- Tell your face partner what the zenith is.
- Use the planisphere to find a star or constellation that was near the zenith when you were born.



As you look at the planisphere, does it seem as if West and East are reversed?



- The planisphere represents a map of the sky. Hold the planisphere as you would if you were really outdoors observing. Pretend you are facing North.
- How would you hold the planisphere?
- Turn until you are facing West. What adjustment must you make with the planisphere so that you can accurately read the map?
- How about when you turn to face South or East?



Find the North, East, South, and West horizons on the planisphere



- What star was rising in the eastern sky at the time you were born?
- What star was setting on or near the western horizon at the time you were born?
- What constellation was on or near the northern horizon?



Turn the planisphere counter-clockwise 360 degrees to represent the passing of 24 hours. Note the date passes through all of the times on the star wheel.



- Name three constellations that are always above the horizon (never rise or set) .
- These are called Circumpolar Constellations.



Locate the North Star, Polaris



- Describe what happens to the North when you rotate the Star Wheel.
- What constellation is Polaris attached to?





- Turn the Star Wheel until you have lined up May 4 at 9pm. Describe what happens to Ursa Major as you rotate the Star Wheel to May 10. Be sure to hold the Star Wheel over your head as you rotate. What direction did they rotate?



Slide show developed from the following three sources.



- <http://www.astro.washington.edu/courses/labs/clearinghouse/labs/Planisphere/planisphere.html>
- <http://www.handsonuniverse.org/activities/uncleal/NorthStarwheel.pdf>
- <http://mjksciteachingideas.com/pdf/StarWheelWS.pdf>

