

# Literacy Rich Narrative

For my astronomy unit, we create a working model of the solar system and the celestial sphere. As the unit progresses, the walls, ceiling, windows and doors become adorned with student art work of the mythologies of the constellations from different cultures, and their research into planets, space craft and deep-sky objects.

By suspending the Sun from the ceiling at the center of the room and locating Polaris in the center of the front wall, we determine where Earth will be in its orbit for each solstice and equinox and then divide the room into twelve months of the year as determined by the tilt of Earth's axis towards Polaris. We then plot the position of the constellations of the Zodiac on the walls based on which Zodiac sign corresponds with which month. The ceiling represents the ecliptic, the plane of the planets. We determine the approximate location of the planets based on which constellation of the Zodiac each planet appears to be in when we observe them at sunset, midnight or sunrise. We use the ceiling grid for the orbits of the inner planets and plot the outer planets on the ceiling along the walls.

The room is divided into spring, summer, fall and winter as determined by Earth's position in its orbit for each season. We determine where Earth is located for each holiday, and students decorate the classroom accordingly. It can become quite a mess, but it's their mess.

Students working on group projects gather in the direction of that object and reading material and posters are displayed around the room in their appropriate locations. For example, everything to do with the Voyager space probe is located under the constellation Libra since Voyager is headed in that direction.

I have done this many times in many classrooms as part of my astronomy programs for Dome Education ([domeed.com](http://domeed.com)). The instructions, student worksheet and worksheet key are attached in order to share this with other teachers.

# Seasons & Solar System Worksheet Teacher Directions

Set up room with Sun hanging from ceiling in the exact center of the room and constellation labels on the walls as indicated on worksheet, Have all students face front wall with worksheet in front of them.

Students label their worksheets which will match the room

1. Locate Polaris at the center of front wall
2. Label solstices & equinoxes – walk around room with globe - shortest and longest days in Northern Hemisphere – solstices – equal day and night – equinoxes
3. Label months of the year
4. Group students by birth month - not Zodiac sign! Have students born after 21<sup>st</sup> move to next month. If possible, have students stand in order of birth date. Students will notice that signs don't match months - Cognitive dissonance  
Have students point to the Sun, then lower their arm until they are pointing at a constellation. That is their Zodiac sign  
On their worksheet, draw a line from their birthday through the Sun to their Zodiac sign and circle their constellation.
5. Hamburger folds and 4 seasons
6. Locate Earth by date – use 3<sup>rd</sup> grid on ceiling from Sun to represent Earth's orbit –  
Locate planets by where they appear at sunset, midnight and sunrise from Mt Nose  
Mercury 1<sup>st</sup> grid, Venus 2<sup>nd</sup> grid, Mars 4<sup>th</sup> grid,  
Jupiter, Saturn, Uranus and Neptune on outer grid along wall  
Move all 4 inner planets and Jupiter 2 grids in their orbits each month,  
Move Saturn 1 grid / month, Uranus 1 grid / 2 months, Neptune 1 grid / 3 months
7. Use the model to predict which planets and constellations will be visible at sunset, midnight and sunrise each month

Small solar system model, twist-clips and installation pole from Staples

# Horoscope Dates

<https://www.horoscopedates.com/>



**Aries**

Mar 20 – Apr 20



**Taurus**

Apr 20 – May 21



**Gemini**

May 21 – Jun 21



**Cancer**

Jun 21 – Jul 23



**Leo**

Jul 23 – Aug 23



**Virgo**

Aug 23 – Sep 23



**Libra**

Sep 23 – Oct 23



**Scorpio**

Oct 23 – Nov 22



**Sagittarius**

Nov 22 – Dec 22



**Capricorn**

Dec 22 – Jan 20



**Aquarius**

Jan 20 – Feb 18



**Pisces**

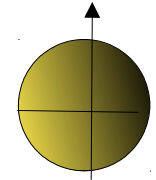
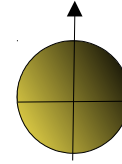
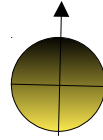
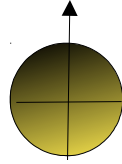
Feb 18 – Mar 20

Leo

Cancer

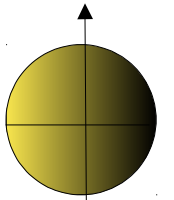
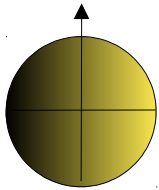
Gemini

Taurus



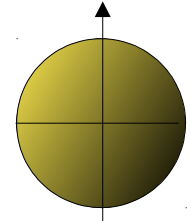
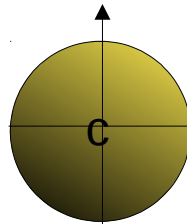
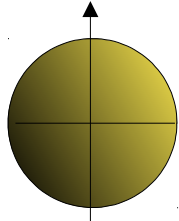
Virgo

Aries



Libra

Pisces

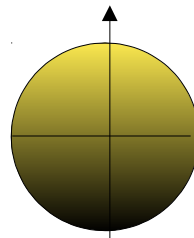


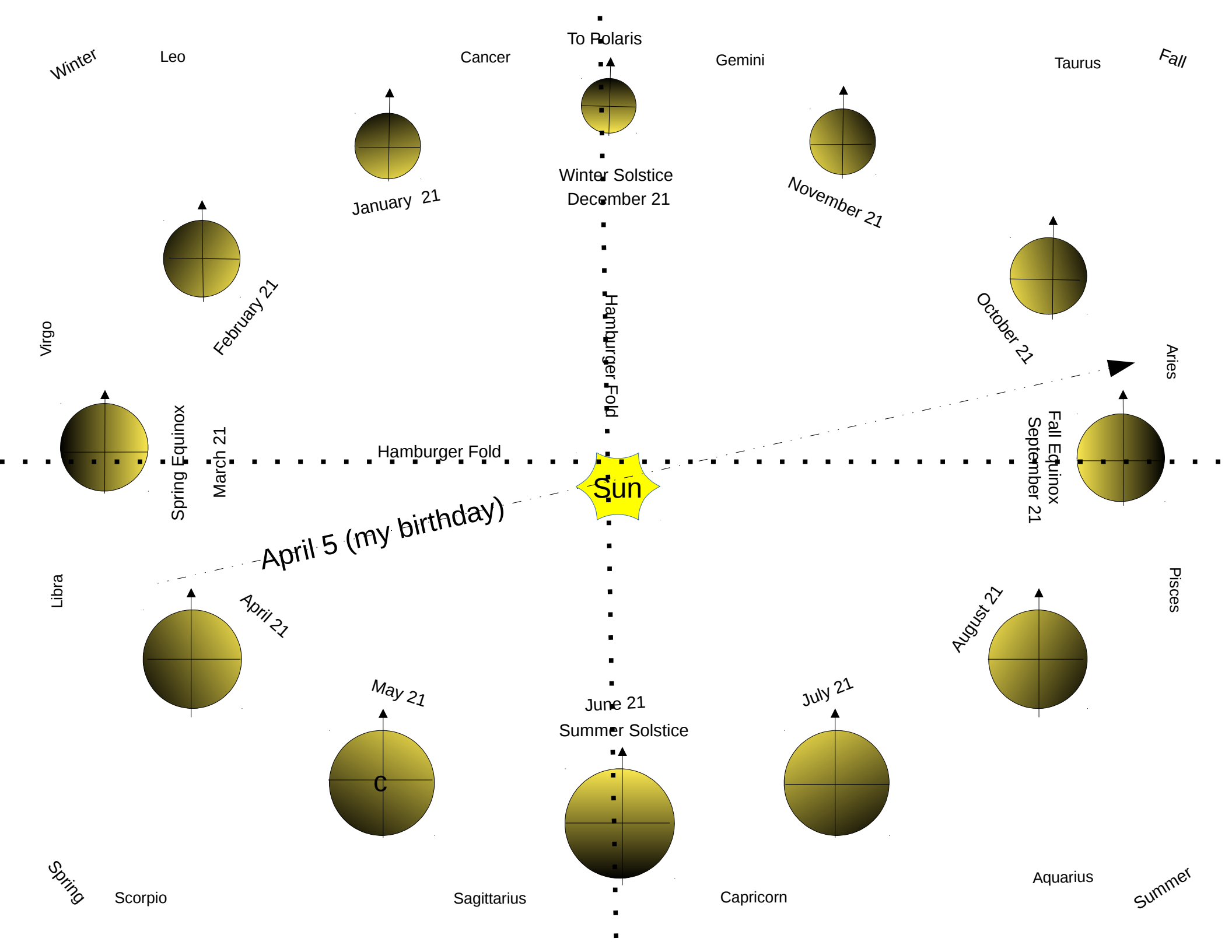
Scorpio

Sagittarius

Capricorn

Aquarius





Winter

Leo

Cancer

To Polaris

Gemini

Taurus

Fall

January 21

Winter Solstice  
December 21

November 21

February 21

October 21

Virgo

Spring Equinox  
March 21

Hamburger Fold

Hamburger Fold

Aries

Fall Equinox  
September 21

April 5 (my birthday)

Sun

Libra

April 21

August 21

Pisces

May 21

June 21  
Summer Solstice

July 21

Spring

Scorpio

Sagittarius

Capricorn

Aquarius

Summer