

Kinesthetic Astronomy: Set Up

GRADE LEVEL	3 rd -8 th
SUBJECTS	Earth & Space Science, Using Models
DURATION	Preparation: 20 minutes
SETTING	Classroom

Construction of signs:

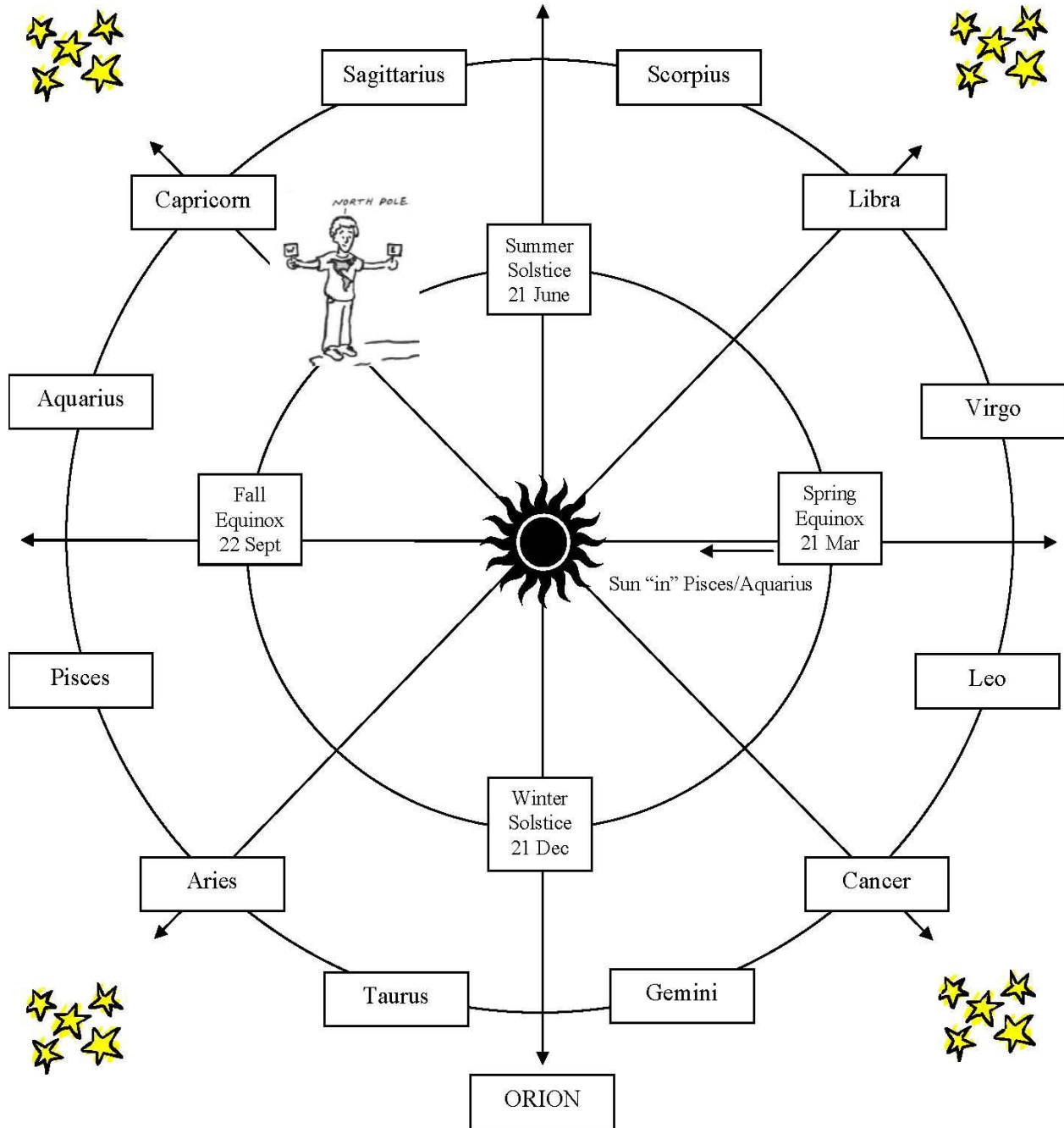
Print the 12 Zodiac signs in B&W or color. It is best to laminate for repeated use. If desired, use a 3-hole punch to put holes along the top edge of each sign. Weave a loop of string (36 inches in length) through the holes. This will assist you in hanging them up so they are easier to see in the learning environment.

How to set up the kinesthetic circle

1. direction toward which students will be “tilting toward Polaris” (see diagram on the next page).
2. Find Earth’s position on 21 June, the summer solstice. This is the place in the circle where being tilting toward Polaris results in your upper body leaning directly towards the Sun. Place the “Summer Solstice” sign on the ground as in the Zodiac Diagram.
3. Circle the Sun in a *counterclockwise* direction for $\frac{1}{4}$ of an orbit. Place the “Fall Equinox” sign.
4. Place the “Winter Solstice” and “Spring Equinox” signs accordingly.
5. Return to the Summer Solstice position. Face away from the Sun – midnight on the Summer Solstice. Place Sagittarius slightly to your left and Scorpio slightly to your right.
6. Place the remaining Zodiac signs as shown. Hanging the signs from chairs or taping them to the wall at the height of the balloon makes them more readable to students in the Kinesthetic Circle.
7. Mark earth’s orbit with 12 pieces of tape (one for each month). This will guide the students in where to stand.
8. If you are planning on doing the Mars Opposition Dance, make another orbit outside of Earth’s orbit with 24 pieces of tape to mark the two earth years it takes Mars to orbit the sun.

THE ZODIAC DIAGRAM

The diagram below depicts the modern order of the Zodiacal constellations relative to the Sun (not to scale). It also indicates Earth's orbital locations at the two solstices and two equinoxes. The boy represents Earth on the Kinesthetic Circle (as defined in the "Sky Time" lesson). If you know how to use a planisphere, you can confirm the positions of the constellations of the Zodiac along the ecliptic. Note also the effects of precession. When western astrological signs were first assigned, the Sun was "in" Aries at the Spring equinox. These days the Sun is between Pisces and Aquarius. Orion (below the ecliptic between Taurus and Gemini) is a familiar constellation for optional use in the "Sky Time" lesson.



WINTER SOLSTICE



21 December

SPRING EQUINOX



21 March

SUMMER SOLSTICE



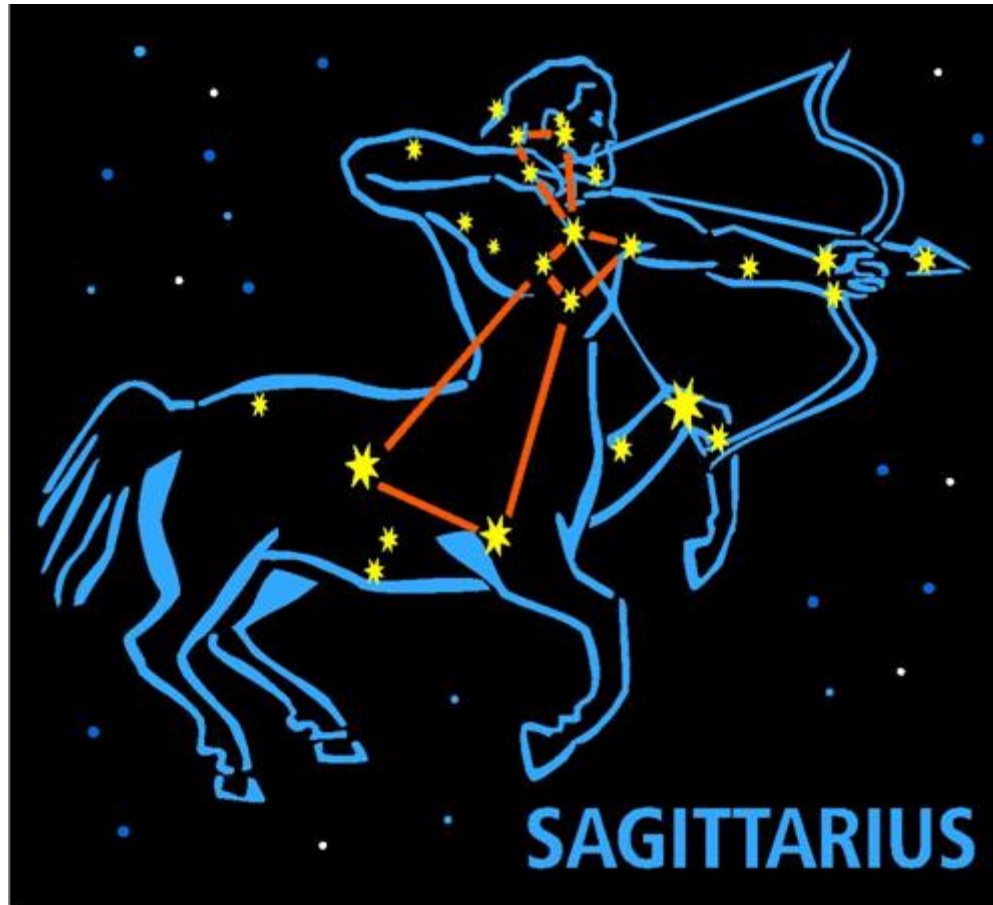
21 June

FALL EQUINOX

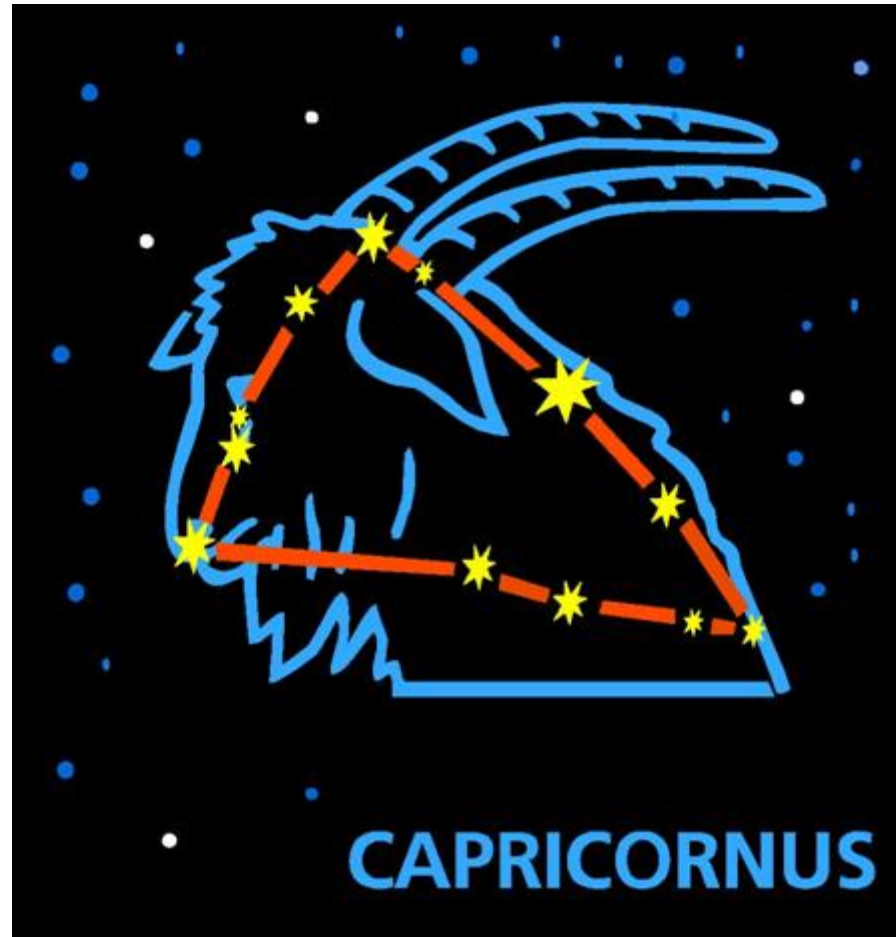


21 September

SAGGITARIUS



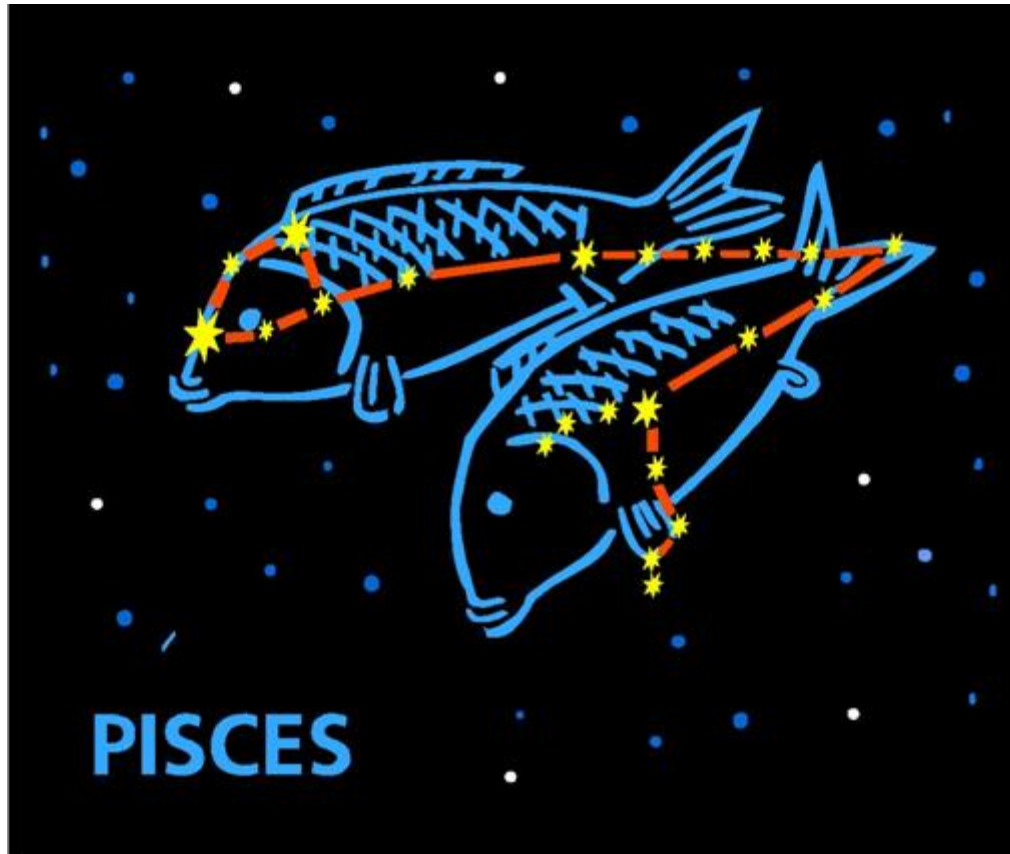
CAPRICORNUS



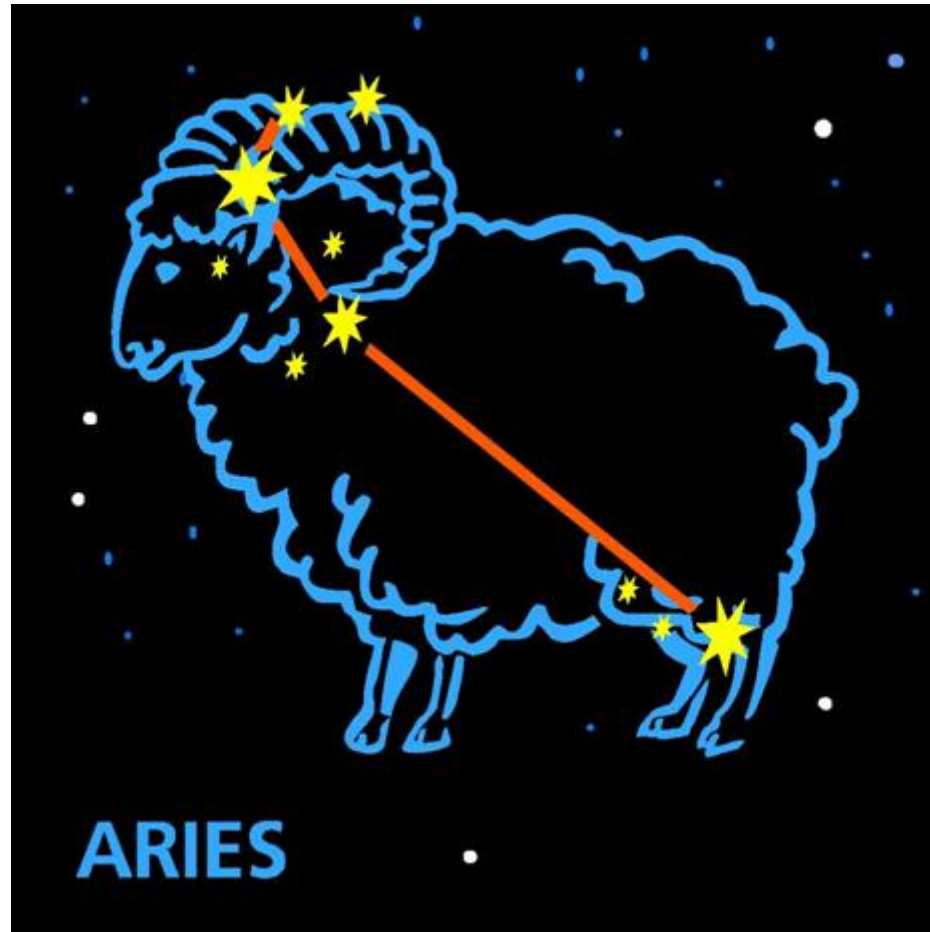
AQUARIUS



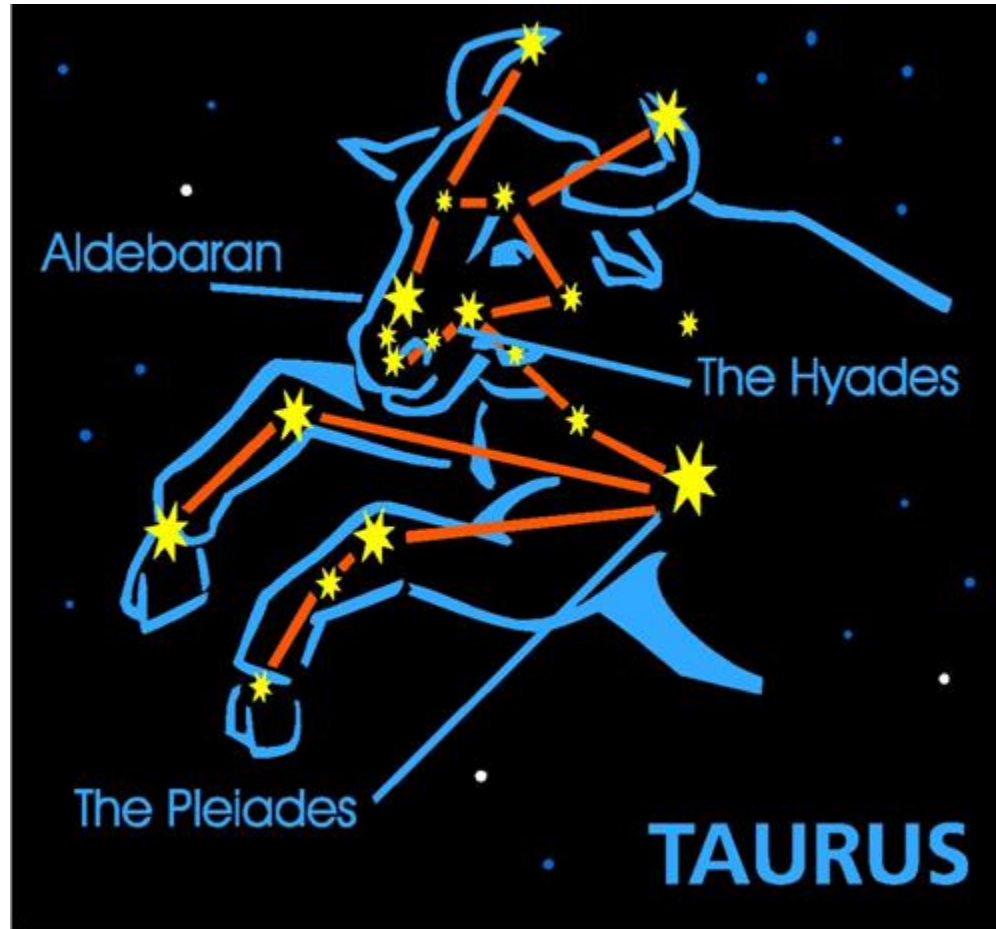
PISCES



ARIES



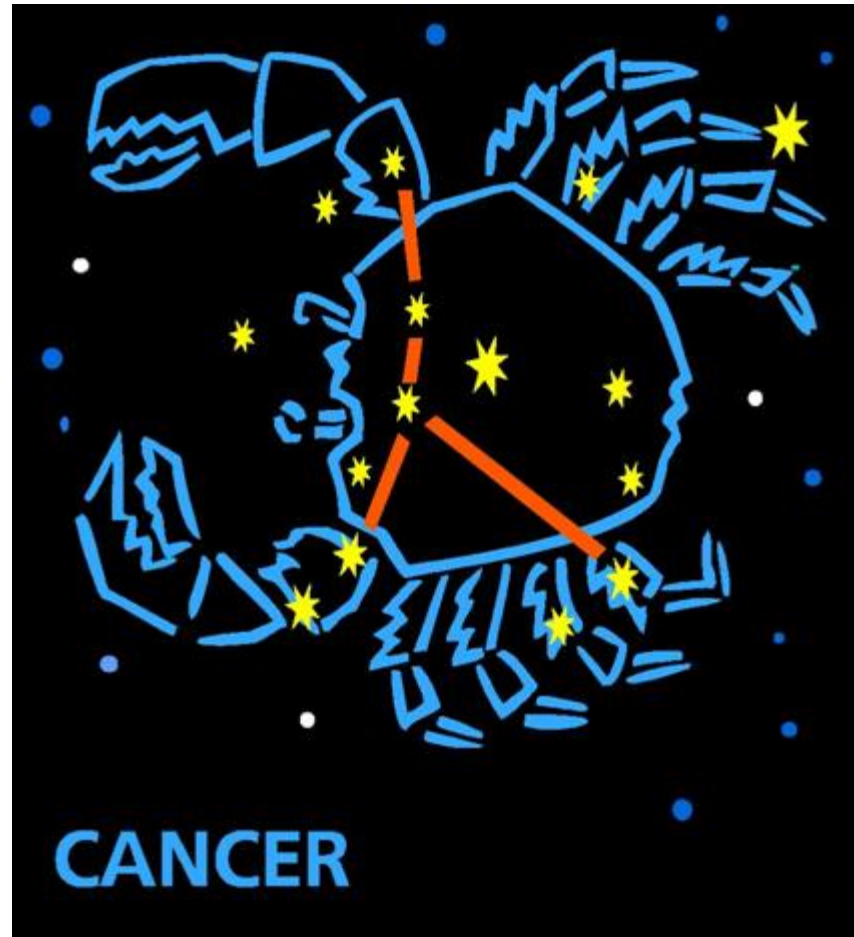
TAURUS



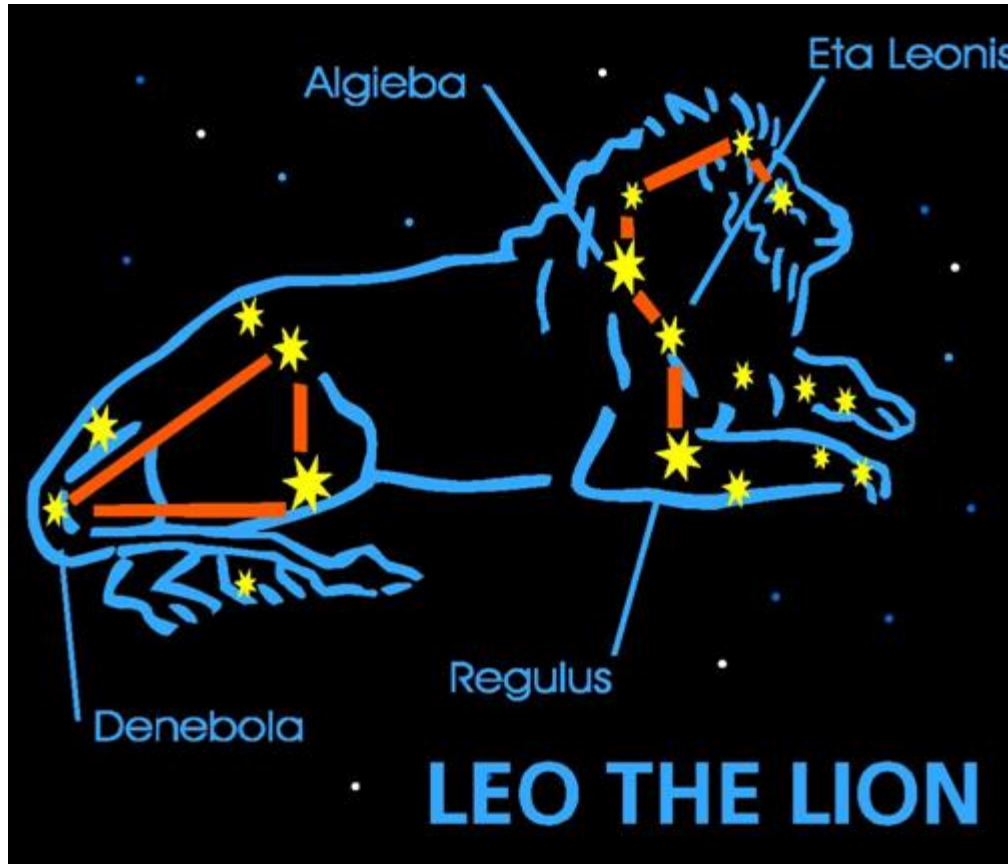
GEMINI



CANCER



LEO



VIRGO



LIBRA



SCORPIUS

