

Clark Planetarium Assessment

Key

Moon Phases – Standard I.

1. Since it takes about 29.5 days to revolve around the Earth, the moon appears to the east of its previous day's position in the evening sky. When it is rising in the east from full phase until new moon, it rises about 50 minutes later each night depending on the time of year.
2. revolution or orbit
3. revolution or orbit
4. phases
5. waxing
6. waning
7. East, (This is a generalization as the moon may rise in the NE or SE as well.)
8. $\frac{1}{2}$
9. $\frac{1}{2}$
10. B.
11. D
12. C. It is still full.

Seasons – Standard II.

1. Rotation
2. Sun rise or set, Moon rise or set, stars rise or set, Sun and Moon appear to move from east to west during the course of the day/night.
3. tilt of 23.5 degrees
4. F, Earth's orbit is nearly a perfect circle. Earth is closest to the Sun on January 5 and farthest away on July 4.
5. E., In fact, the sun is never directly overhead over the entire continental US.
6. D. (see #4.)
7. C. The sun gets lower when viewed as described between summer solstice and winter solstice. The sun gets higher from winter solstice to summer solstice.
8. A., The sun sets due west only on the equinoxes. Between the vernal (spring) equinox and autumnal (fall) equinox the sun sets to the NW (long days). Between the autumnal equinox and the vernal equinox, it sets to the SW (short days).
9. B., The reverse is true for the winter giving 15 hours darkness and 9 hours light.

Key cont.

Solar System – Standard III.

1. Star or Sun
2. asteroid belt
3. F, The Sun has far more.
4. star or sun, planets, moons
5. Jupiter, Saturn, Uranus, Neptune
6. star
7. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto
8. D, (this is a powerful thing to demonstrate to students)
9. A. On a 12 inch diameter globe, the shuttle would reach a maximum height of about $\frac{3}{8}$ inch above the surface. (usually less)
10. B., The **Solar System** consists of OUR SUN and its family of planets.
Galaxies are huge collections of stars. There are between 100 billion and 400 billion stars in the Milky Way Galaxy. Current estimates are that there are between 125 billion and 500 billion galaxies in the known universe but that number may continue to rise as better detection methods become available.

Universe- Standard IV.

1. Milky Way
2. between 100 billion and 400 billion
3. comet
4. F
5. Directly overhead
6. E
7. B
8. C., The sun moves very slowly against the background stars during the year. We only see about 1 degree of movement each day. (360 degrees/year) Therefore, the sun will still be in Gemini at sunset and actually spends an average of 1 month in each of the Zodiacal constellations.
9. E., The North Star just barely makes the top 50 list. It's just special because it is nearly over Earth's North Pole.