# Astronomy Lapbook Directions

This lapbook will be worth 96 points, which will be counted as a test grade.

Most components will be worth 10 points, broken down into 7 points for accuracy, and 3 points for quality (neatness, color, effort).

1. Solar System to Scale lab report (10)

The lab report should have a title, materials, data, procedure, conclusion section. It should describe the lab we did comparing the relative size and distance of planets in the solar system (plus our moon). Remember that we measured the distances with a tape measure outside, and that we chose different kinds of materials for each planet. The scale was 6 inches = 36,000,000 miles. It could be typed up for better quality, with a picture drawn to illustrate what we did.

1. Moon phase diagram (10)

The moon phase diagram was a small drawing/diagram of the moon at different phases as it orbits the earth. We drew the earth and sun, and then shaded the moon in different points of its path: the new moon, waxing crescent, 1st quarter (half) moon, waxing gibbous, full moon, waning gibbous, 3rd quarter (half) moon, waning crescent, and new moon. We also showed what the moon’s phase looked like from our perspective on earth (which was sometimes the reverse image of what it would look like from the sun).

1. Moon Phase Accordion Fold Out (6)

The Moon phase accordion fold out was a small construction paper fold out booklet that had small cut-outs of the moon with white/black pieces that showed each phase. New Moon, Waxing Crescent, Waxing Gibbous, Full Moon, Waning Gibbous, Waning Crescent, New Moon.

1. Earth’s Design brochure (10)

We folded a paper into thirds and then wrote in information to describe Earth’s properties which promote life. These include Correct Mass/Gravity, Distance from Sun/Temperature, Tilt/Seasons, Speed of Rotation, Magnetosphere, Atmosphere. You should write a small paragraph for each variable, explaining why it works to promote life, and a diagram or drawing if possible.

1. Facts About Planets Clipboard Booklet (8)

This booklet consists of small notes on each planet (other than Earth) stapled to a clipboard template. We wrote notes for each planetary body based on the Powerpoint slides we viewed in class (which are now on the Documents page).

1. Planets Venn diagrams (8)

This booklet had small shutter folds, and compared three pairs of planetary bodies with each other. Each pair should show some similarities and some differences. For example, Mercury vs. Pluto (similarities are small size, rocky core and terrestrial planet, elliptical orbits; differences include Pluto’s atmosphere makes its temperature more stable, its elliptical orbit is tilted out of a horizontal path around the sun, and Pluto’s unusually large moon while Mercury has no moons). In class, we put differences on each shutter, and similarities in the center panel.

1. Constellations booklet (8)

This booklet consisted of five or six constellations made with black construction paper, white construction paper, and a hole puncher. You punch out holes in the black construction paper with the puncher or your pencil, according to a star diagram of one of the constellations (i.e. Orion). Then attach the white construction paper on the back so the white shows through the holes. On the white side, write a brief description of the constellation story or its location/importance, in 2-3 sentences. Staple the constellations together into a flip booklet.

1. Universe accordion booklets (16)
   1. What’s Out There? This accordion booklet had five words with definitions: Galaxy, Nebula, Comet, Asteroid, Black Hole. Most of you drew little pictures too.
   2. Universal Properties. This accordion booklet had five words with definitions: Red Shift, Cosmic Background Radiation, Nebular Hypothesis (with Accretion), Big Bang Theory, and General Relativity.
2. Astronomers and Astronauts (10)

Use a template to organize the information for the following 9 Astronomers/Astronauts: Ptolemy, Copernicus, Galileo, Kepler, Brahe, Albert Einstein, Edwin Hubble, Werner Von Braun; John Glenn, Alan Shepherd, Neil Armstrong. You can look these up on the internet if you desire, but you only need two or three summary sentences about the importance of these men to astronomy. (They are in your textbook).

1. Space Program (10)

Use a template to organize the information for the following 8 elements of space exploration: The Space Race and Sputnik; the International Space Station; the Space Shuttle Program; Saturn V rocket; Apollo Program; Challenger Explosion; Columbia disaster; SETI;

Extra Credit: Moon Tracking Chart

The moon tracking chart was a PDF of moons to shade in over the month. I asked for you to shade the moon in accordance with what it looked like each night, as well as recording the moonrise and moonset time of the day. If you have missed days, these are not too difficult statistics to find on weather sites or weather apps.