

Science Force - Astronomy - Volunteer Guide



The purpose of this lab is to investigate the study of space, Astronomy. Volunteers: Please read this material to familiarize yourself with the lab's different stations.

The lab will begin with an introduction by the Science Force Leader. The students will then be divided into three lab groups and they will rotate between stations. The Science Force Leader will gather the class together for the last five minutes of the lab and will review the conclusions.

Station 1 - Star Theater

In this lab, students will use an ipad and observe their very own mini planetarium. Using the night sky application, students will be able to locate and see planets, individual stars, and constellations in a real time simulation of the sky. We will first ask them to find Polaris, also known as the north star. This star never appears to move in the sky as it is directly above the north pole, and can be used for navigation as it indicates the true north direction. Polaris is also part of the constellation, Ursa Minor (Little Dipper). They can use their time to find both Ursa Minor (Little Dipper) and Ursa Major (Big Dipper) as they will learn more about their stories in the constellation station. Next, we will have cards with other constellations they can choose to locate and they can choose a planet to locate with the application.

Station 2 - Constellation Station

Many thousands of years ago when ancient people looked up at the sky, they saw the same things we did - beautiful stars. Stars are bodies of hot gasses that produce their own light. These ancient people saw patterns in the stars, and these patterns are referred to as constellations. Ancient cultures used the positions of the stars to help them know when to plant and harvest their crops. The constellations they observed in the sky helped them understand their work and helped them travel from place to place. These constellations represent characters from myths, stories that honor heroes, teach lessons, or explain the world around us. At this station, we will discuss constellations and learn the story of Ursa Major and Ursa Minor (the big and little dipper) along with the significance of Polaris. Then the students will be given a worksheet with a set of stars and allowed to create their own constellation along with a short story around it.

Station 3 - Impact Craters

Let's think about the Moon. What does it look like? The Moon is made mostly of rock. The surface has thousands of pits called craters. The craters form when chunks of rock and metal called meteorites crash into the Moon. These crashes have covered the Moon's surface with rocks and dust. In the lab today, students will practice making craters on a surface. Students will use careful observation skills to diagram craters and label the crater's parts. The students will be dropping pretend meteorites onto a surface made of flour covered with dry chalk paint. They will drop meteorites (various sports balls) of different sizes and weights from different distances and notice the differences of the cratering. When the students drop their pretend meteorite, it will not be destroyed or be broken up like a real meteorite, but the effect is very similar. The crater is the center depression created by the impact. The ejecta is the material tossed out of the crater. The floor is the flat interior of large craters. The rays are the ejecta tossed out at high speeds, forming long lines pointing away from the center. The rim is the raised edge of the crater.

Thank you for volunteering and being an integral part in making this lab a success!