

SPACE EXPLORER

Earth & Moon

See videos for the theory behind many of these activities

Montessori education normally starts with direct, hands-on observation, but learning about space relies mostly on models and pictures. This is why we have included a real meteorite for you and your child to study. We can start a discussion about space with the things we see all the time; the earth and the moon.

Discuss Our Home: Earth - Use the Space Information Brochure as a starting point for a discussion with your child. It has photos of the earth, continents, planets, and galaxies. It also has some brief information on the planets, photos to give an idea of scale, and the phases of the moon.

Match Wooden Shapes - Explain to your child that the earth is not flat, but a sphere. Use the geometric solids to show your child the difference between a flat circle and a sphere. You can also use the cube and square to show the difference between those. Once these geometric shapes have been introduced, you can have your child find things around the house that are those shapes. For example, a ball is a sphere, a dinner plate is a circle, etc. See the videos for more details.

Discuss Night and Day - Use the flashlight and the sphere to demonstrate that the sun is a star, and light comes from the sun. Show how the light only shines on part of the earth at a time, and this is what we call "day". You can show how the side that is facing away from the sun is dark, and that is what we call "night". Demonstrate how the earth spins, and that is what causes it to change from night to day. You can explain that there are some things, like stars, that we can usually only see at night, because the light from the sun is so bright that we can't see other things in the sky.

Night Observation - Use the telescope that we have provided to help your child get excited about going out to look at the stars. You can point out the different stars and planets, and show them the moon.

Light From The Moon - Use the flashlight and both spheres to demonstrate how the sun shines onto the earth and moon, and the moon reflects the light back to the earth. For older children, you can demonstrate how an eclipse works. This is all shown in the videos.

Earth & Moon, continued

Explain Orbit - The size between the 2 spheres we have provided is approximately to scale for the earth and moon. You can use the small sphere to show that it moves around the earth. For older children, you can talk about gravity.

Phases Of The Moon - For older children, you can show the pictures of the different phases of the moon from the brochure, and you can demonstrate what those phases look like using the flashlight and the two spheres. As a bonus, we have included a video that demonstrates the phases of the moon.

Solar System

Planet size and distance are difficult to demonstrate, even using scale models. If the Moon were 1/2in, Jupiter would be 2 ft in diameter, and the Sun would be 34 ft (about the size of a 3 story building). To accurately show the correct distance, Neptune and the Sun would have to be 11 miles apart. Now that is huge!

Planet Names - Use the brochure or the models to introduce the names of the planets. You can use the information we've provided to give them a starting point for each planet.

Planet Matching - Use the brochure to match the planet model to the correct planet image. At this point, you can also introduce the order of the planets.

Planet Transfer - As an activity to build fine motor skills, have your child move the planet figures from a small container onto the plastic tray that they came on. This is demonstrated in the video.

Planet Scale - Use the resources on our website for different ideas to demonstrate the scale size and distance of the planets. Included is a video showing how amazing the scale of the planets and solar system are.

Meteorites - The meteorite that we have provided has been authenticated by a geologist. Meteorites are not stars, but pieces of debris, usually from a comet or asteroid, that have fallen to the ground.

Solar System, continued

Solar System Craft - This activity can be as simple or as complex as you want to make it. For younger children, it may simply be gluing the planets onto the paper as you tell them what they are. For older children, it can include cutting out the planets, gluing them onto the paper, and then writing out or labeling the names of the planets. If they really want to go crazy, they can find out how many moons each planet has, and include those as well.

Stars & Constellations

The constellation activities will help your child learn about star formations, work on their fine motor skills, and also give them a chance to invent their own constellations!

What Is A Star? - Explain to your child that stars are big balls of fire and gas. That is what lets off the light that we see.

What Are Constellations? - Explain that constellations are groupings of stars that people have given names to. Use the constellation cards that we have provided to show some of the most common ones that we see, for example: Triangulum or The Little Dipper.

Constellation Card Matching - Use the pairs of constellation cards to play a matching game.

Pattern Matching - Using the star beads and the pattern matching cards, match the stars to the cards, one card at a time. Start with the simpler cards, and then work your way up to the more difficult ones. Younger children can match directly onto the cards, while older children can match beneath or next to the cards.

All activities in Montessori classrooms are carefully supervised. Please use caution with these materials, as they are very small and a choking hazard. As always, please carefully supervise your child and do not give these items to a child under the age of 3.

Please see the insert for more Stars & Constellations activities.