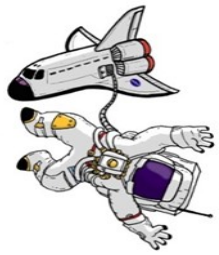

Space – The Universe

Provided by:
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Information	Program Description
Kindergarten-5th Grade	This curriculum was designed to ignite excitement and curiosity in various outer space concepts students may have encountered. Students will explore constellations, stars and all their forms, as well as galaxies. Students will gain exposure to concepts such as gravity, centripetal force, microgravity, light as waves, and the electromagnetic spectrum. Students will have their imaginations fortified by many images of microgravity and space travel.
Curriculum Format	Each lesson can be presented in 45-60 minutes. Teaching Guide with complete instructions is provided. Teaching Kit with materials needed to present lessons is provided. User may need to provide standard classroom supplies (pencils, scissors, glue). If a lesson requires perishable items (e.g. milk), user is responsible for these purchases.

Lesson	Overview
One: Constellations	Students learn about constellations through discussion and demonstrations. How constellations were created is modeled and then students create their own constellation and companion story. Students share their constellations by physically acting out the changing seasons. Students also play a game to get to know familiar constellations by assembling them from oyster crackers.
Two: The Life Cycle of a Star	Students watch a video to learn that many objects in space are stars at times in their life cycle. Students then sort actual pictures onto a mat with a flow chart of the star's life. Students choose their favorite space and make a pastel painting of it.
Three: Galaxy Light	Students learn about light and the electromagnetic spectrum though demonstrations and pictures. Students then build a spinning top that simulates the way a spiral arm galaxy looks in space.
Four: Forces in Space	Students will make a mini shuttle toy in order to learn about the " tug of War" between speed and gravity that creates stable, circular orbits. Then students will experiment with the "The Pull of Gravity" devices in order to understand that every object in space has a pull of gravity, similar to the way magnets attract each other.

Lesson	Overview
Five: Toys in Space	This lesson is taken from the Toys in Space curriculum developed by Iowa State University Extension office in Ames, Iowa and NASA. This lesson starts with stations in which students have the opportunity to play/experiment with many traditional toys to find out how they work here on earth. Then students watch a video of astronauts on the space shuttle playing with the exact same toys in microgravity.
Six: Living in Space	Students will hear a book about the first space missions and learn more about microgravity. Small groups will be given a scenario and props to act out an everyday problem in space and then act out how engineers designers, and astronauts have solved the problems caused by microgravity. After watching each other's skits, students watch the video *Food in Space* and discussion what it would be like to live in space.