In collaboration with

ACADEMY OF FUTURE SPACE EXPLORERS

Lunch Break or After-School Program

Summary and Educational Value

PLANETS AND MOONS

Explore the farthest reaches of our solar system and create a lunar eclipse on our home planet. See the size difference between the Earth and its moon. Build your very own Mad Science® Gravity Assisted Launcher to simulate how gravitational pull affects a probe in space.

SUMMARY:

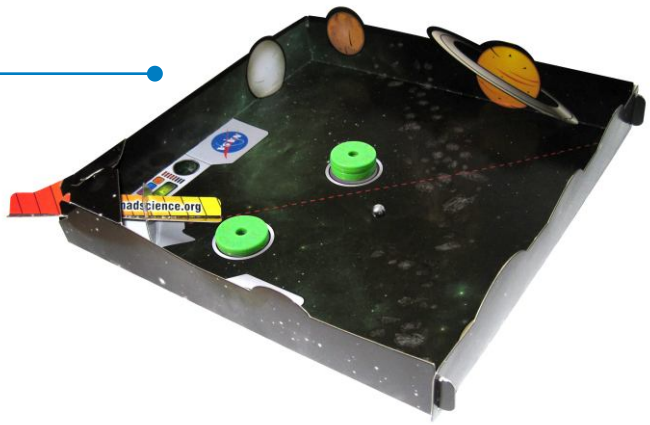
In this class, children set off on a voyage to discover the Solar System. They impersonate the planets to compare their sizes and distances from the sun, recreate a solar and lunar eclipse, and work out the relative size and distance of the Earth and its moon. Children learn how rockets escape the pull of gravity and build a Mad Science® Gravity Assisted Launcher game to send probes into space!

EDUCATIONAL VALUE:

In Planets and Moons, children use models and scaling in order to understand the relative size and distance of objects in our Solar System. Children experiment with eclipses and learn just how far away our moon is! Children learn about the forces needed to escape gravity. They then build a Mad Science® Gravity Assisted Launcher set to send a metal sphere across a model solar system.

TAKE-HOME PRODUCT:

Mad Science® Gravity Assisted Launcher



ATMOSPHERE AND BEYOND

We're on a mission to explore the atmosphere on Earth, and beyond! Travel to the end of the rainbow and make a sunset. Mix up various planetary atmospheres, one molecule at a time. Discover how NASA monitors planetary weather by using your very own Mad Science® Meteorological Station!

SUMMARY:

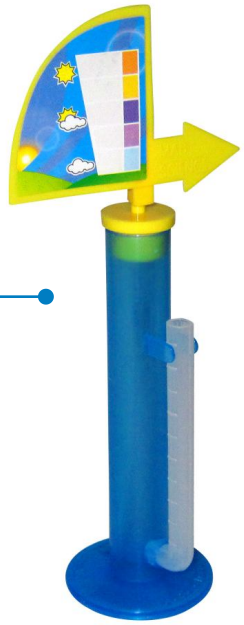
In Atmosphere and Beyond, children discover the properties of the air around us and explore the atmosphere of Earth, and those of planets beyond. Children are challenged to keep Arny the Aquanaut dry during an underwater walk, and to create their very own sunset. After assembling the atmospheres of other planets, they build their very own Mad Science® Meteorological Station so they can monitor weather patterns here on Earth!

EDUCATIONAL VALUE:

In this Earth-science-focused program, children gain an understanding of the importance of the atmosphere for life on Earth, and compare the composition of Earth's atmosphere with those of other planets in the solar system. They learn what it takes to make a planet viable for life as we know it, and explore the effects of atmospheric particles on the color of sunsets and rainbows. Finally, they have a chance to build a Mad Science® Meteorological Station to monitor the weather patterns caused by the interaction of Earth's atmosphere and the Sun's energy.

TAKE-HOME PRODUCT:

Mad Science® Meteorological Station



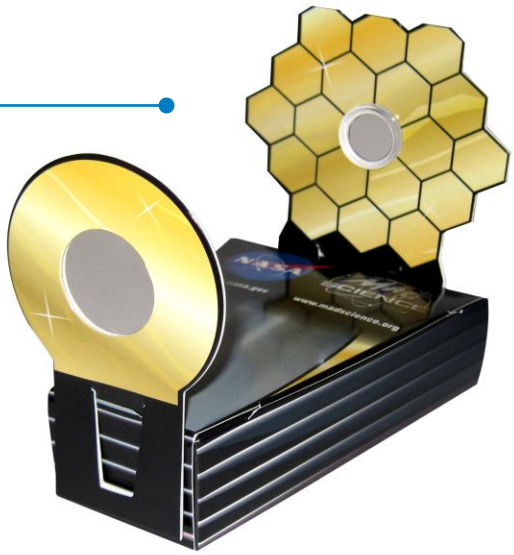
SPACE PHENOMENA

Probe the mysteries of meteors and bounce around satellite light in this phenomenal program on space events. Take home a Mad Science® Space Telescope to explore faraway objects just like the satellites orbiting around the Earth!

SUMMARY:
In Space Phenomena, children explore the phenomenal events that take place in the night sky. Children will create their own impact craters, and observe model meteors fall through a model atmosphere. After a friendly game of satellite tag using reflected light, children watch a model comet form right before their eyes. Children work with lenses to focus far away objects on a screen and then create a Mad Science® Space Telescope to seek out space phenomena from home.

EDUCATIONAL VALUE:
Space Phenomena introduces children to phenomenal space events. Children investigate asteroid impacts and meteors, learn to differentiate the lights of airplanes from those of satellites, and explore the composition and nature of comets! They learn the physics of telescopes and construct a Mad Science® Space Telescope model to take home.

TAKE-HOME PRODUCT:
Mad Science® Space Telescope



SUN AND STARS

This stellar program leads you through the life cycles of the stars! Learn about our star, the sun, and see stardust form. Use your Mad Science® Cosmic Disk and newfound knowledge about the constellations to navigate the night sky!

SUMMARY:

In this class, children investigate our sun and other stars in our and other galaxies. They will follow stellar life cycles and view the stars from different angles of the universe. Children will learn the reasons for constellations and practice navigating by the stars. They bring home a Mad Science® Cosmic Disk to guide their night time stargazing.

EDUCATIONAL VALUE:

This after-school program introduces children to stars (including our own) and the galaxies they form. Children learn about the facts of our sun and examine various stellar life cycles. They construct a three-dimensional constellation to understand the location of stars in our and other galaxies. Children learn to navigate by the stars and take home a star chart on a Mad Science® Cosmic Disk to encourage their stargazing studies.

TAKE-HOME PRODUCT:

Mad Science® Cosmic Disk

ROCKET SCIENCE

This is your chance to be a rocket scientist! Investigate the four forces of flight as you race through space. Explore the science involved in rocket construction as you build and take home your own Mad Science® Skyblazer Rocket.

SUMMARY:

Children will follow a detailed construction plan to build their very own Mad Science® Skyblazer Rocket while exploring the science of rocketry. Children will play a fun game illustrating the four forces of flight. A model rocket launch will be part of the Space Travel class.

EDUCATIONAL VALUE:

Children are provided with a valuable hands-on experience as they build a Mad Science® Skyblazer Rocket. As they move through the various stages of construction, children learn the components of a rocket and the roles each play in a rocket's flight. Children will learn about the four forces affecting flight in lessons that will be reinforced with a fun game in which they race through space.

TAKE-HOME PRODUCT:

Mad Science® Skyblazer Rocket

SPACE TRAVEL

Learn what it takes to be a true globetrotter! Race a rocket and design your own car engine as you learn about thrust. See the principles of propulsion at work in a real rocket launch and build your very own Mad Science® Space Copter to fly to the skies!

SUMMARY:

In Space Travel, children will launch their investigation of rocket propulsion using the compressed air inside balloons for thrust. The class will race balloon rockets and be challenged to devise a balloon-powered rocket car. Experimenting with the fast-moving air produced by spinning propellers, children will build a unique Mad Science® Space Copter to take home. For our grand finale, children will witness a thrilling model rocket launch, and learn the meticulous preparations necessary to send up a rocket!

EDUCATIONAL VALUE:

In this class, children will learn about the propulsion systems employed for space travel. Children will participate in inquiry-based discussions and multiple hands-on experiments designed to introduce them to the concepts of thrust, propulsion, action/reaction, aerodynamics, the stages of rocket flight, construction of a Mad Science® Space Copter and more!

TAKE-HOME PRODUCT:

Mad Science® Space Copter

SPACE TECHNOLOGY

Discover technology that's out of this world! Steer a laser beam through a laser maze, and discover everyday objects originally designed for use in space! Take home a Mad Science® Stereoscopic Viewer and observe actual 3-D images from NASA's probe transmissions!

SUMMARY:

Space Technology starts with an exploration of space-related technologies used on Earth. Children will help laser light through a maze, use principles of radar technology to discover hidden objects, and discover the importance of points of reference to depth perception. Children examine the potential threats to spacecraft and see the technological advances that improve our exploration of the universe. Children go home with a Mad Science® Stereoscopic Viewer containing a set of stereoscopic images transmitted from probes and rovers in space.

EDUCATIONAL VALUE:

This after-school program introduces children to space-related technologies, including those used on Earth to aid space exploration and the very scientific principles of space travel. Engaging demonstrations and exciting hands-on activities, including a Mad Science® Stereoscopic Viewer, will make this investigation of Space Technology a fun learning experience.

TAKE-HOME PRODUCT:

Mad Science® Stereoscopic Viewer

LIVING IN SPACE

Experience the life of an astronaut as you suit up for space flight! Use teamwork to complete an important space mission and build a model space station. Bring home the challenge of repairing a ripped solar panel on the International Space Station with your very own Mad Science® Spacewalk Mission!

SUMMARY:

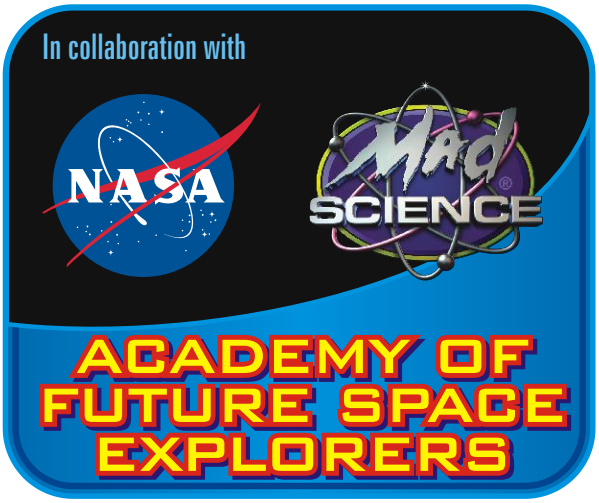
Children set out on a mission to experience life in space! Children will try out the special adaptations needed to live in space, learn about mission training techniques, and form a ground control to space mission team to repair a circuit in space. The children take part in a Mad Science® Spacewalk Mission that they can take home!

EDUCATIONAL VALUE:

This class puts children in the boots of an astronaut. Children explore the various demands and challenges facing astronauts in space and the Mission Control who support them from the ground. Children then investigate astronaut training, mobility, and life support, and experience astronaut life for themselves as they participate in a Mad Science® Spacewalk Mission.

TAKE-HOME PRODUCT:

Mad Science® Spacewalk Mission



Mad SCIENCE

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Mad Science of Southern Alberta
403-263-4140
madscsab@telusplanet.net
www.calgary.madscience.org
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