



**Astronaut Theatre**  
**NASA's Our World**  
(Grades K-5)

**The Challenger Learning Center**  
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**Our World: Moons In Our Solar System (#79)**

05 Aug 2011 4:14

Did you know astronomers have identified more than 300 moons in our solar system? How big is Ganymede? How small is Deimos? Which moons might have what it takes to support life? Follow the NASA missions to learn about these unique bodies in space.

**Our World: What Is the Solar System? (#78)**

17 Nov 2010 5:58

Find out why one amateur astronomer created an amazing graphic of the 88 largest objects in our solar system. Learn just what makes up a solar system and find out how we classify the thousands of objects in our own solar system.

**Our World: Eyes in the Sky (#77)**

15 Mar 2011 6:06

Learn about amazing Astronaut Earth Photography. See sand dunes, oceans, large man-made structures, clouds, mountains and even sunrises and sunsets in photos taken by the astronauts on-board the International Space Station. Find out how you can be part of NASA's EarthKam program.

**Our World: Communications in Space (#76)**

05 Aug 2010 7:19

Communication is very important for astronauts on the International Space Station (ISS). Learn about the many ways that astronauts can communicate with people on Earth while they are on-board the ISS.

**Our World: Learning about Astronaut Gloves and Tools On-Board the International Space Station (#75)**

18 Jun 2010 5:05

Join Astronaut Sandy Magnus on-board the International Space Station as she explains how the astronauts use special tools in space and why astronaut gloves are so important.

**Our World: Learning About Astronaut Suits On-Board the International Space Station (#74)**

15 Jun 2010 4:35

Join Astronaut Sandy Magnus on-board the International Space Station as she explains why astronauts must sometimes work outside their spacecraft. Learn about the protective suits worn by the astronauts on these spacewalks.

**Our World: Plants in Space (#73)**

09 Nov 2010 7:00

Find out how plants use light to make their own food in a process called photosynthesis. See how NASA uses LED lights to help grow plants in space. Design your own plant growth chamber like the ones used by NASA.

**Our World: Sleeping On-Board the International Space Station (#72)**

09 Nov 2010 5:58

Join astronauts on board the International Space Station, or ISS, to learn about living in space. Explore the inside of a Temporary Sleep Space, or TESS, and see the astronauts' sleeping bags. Learn how the astronauts do personal hygiene tasks like brushing their teeth or shaving.

**Our World: Gravity in Space (#71)**

28 May 2010 6:20

What is gravity? Find out about the balance between gravity and inertia that keeps the International Space Station in orbit. Learn why astronauts "float" in space and how the space shuttle has to slow down in order to come back to Earth.

**Our World: Wind Tunnels in Action (#70)**

17 Aug 2011 5:32

Join NASA scientists and engineers at NASA Langley Research Center, one of the most extensive wind tunnel facilities in the world, as they study air flow around objects at different wind speeds. Learn what kinds of objects can be tested in the various kinds of wind tunnels.

**Our World: Journaling in Space (#69)**

27 May 2010 6:59

Learn how famous explorers, scientists and even NASA use journals and science notebooks to record observations about Our World. See why journaling is important on the International Space Station to record how the astronauts react to living in space.

**Our World: Careers at NASA - More than Just Astronauts! (#68)**

27 May 2010 6:05

Explore some of the unique career opportunities at NASA. Learn how NASA internships and co-op programs influenced scientists and engineers working on exploration projects today. Find out how you can be part of NASA, too!

**Our World: Snowflakes (#67)**

27 May 2010 4:15

Snowflakes are actually a history of what was happening in the atmosphere as the snowflake formed and fell to the ground. Find out how you can help NASA scientists study different types of snowflakes to learn about the atmosphere and changes in climate.

**Our World: NASA at Jamestown (#66)**

27 May 2010 6:43

See how astronauts today compare to explorers of old. Find out how NASA technologies are being used to help archaeologists in Historic Jamestowne to learn more about the artifacts they are uncovering without damaging the artifacts.

**Our World: Recycling on the International Space Station (#65)**

14 Mar 2011 7:20

Join engineers at NASA and astronauts on board the International Space Station to learn about the importance of recycling. Find out how NASA is solving the challenge of giving astronauts water to use without wasting any with the new Water Recovery System.

**Our World: Changing Theories - The Scientific Method in Action (#64)**

20 May 2010 5:50

See how scientists develop ideas about the universe, then set out to prove what they think is right. Often this search leads to new questions and new discoveries. Find out how the Mars Phoenix Lander has changed what NASA scientists believe about Mars.

**Our World: Pluto - Our First Dwarf Planet (#63)**

14 May 2010 6:28

With more powerful telescopes, scientists are discovering smaller objects in our solar system. Find out how scientists now classify planets. See how NASA's robotic spacecraft, New Horizons, will help us learn more about the dwarf planet Pluto and similar objects in the Kuiper Belt.

**Our World: On-Board the International Space Station (#62)**

02 Nov 2009 5:78

Learn about the global cooperation to build the International Space Station, or ISS. Use a simple scale model to demonstrate the amazing mathematical relationship between the Earth and moon and see how the low-Earth orbit of ISS compares.

**Our World: Snowpits (#61)**

25 Jan 2010 5:55

Learn about adaptations that help animals survive in winter biomes. See how scientists build snowpits to investigate these unique environments. Find out why NASA is interested in snow and ice.

**Our World: The Rock Cycle (#60)**

11 Sep 2009 8:17

Find out how rocks brought to Earth by the Apollo astronauts have helped NASA learn more about the rock cycle. Compare igneous, sedimentary and metamorphic rocks found on Earth to three types of rocks found on the moon.

**Our World: Arecibo - The Largest Radio Telescope on Earth (#59)**

17 Aug 2009 7:63

Learn about radio waves, a special type of light that has a longer wavelength and less energy than the light we see. Find out how NASA uses radio waves to learn more about the universe and our own atmosphere with a giant telescope in Puerto Rico.

**Our World: Lunar Rock (#58)**

09 Nov 2010 4:30

Learn about NASA's Lunar Sample Laboratory Facility at Johnson Space Center in Houston, Texas. See how NASA protects these precious moon rocks brought to Earth by the Apollo astronauts. Explore the special storage boxes filled with nitrogen where the moon rocks are kept.

**Our World: Stardust (#57)**

09 Nov 2010 6:55

Visit a lab at NASA's Johnson Space Center where scientists study meteorites. Learn how aerogel, the lightest material in the world helped capture pieces of a comet and return the comet dust to Earth. See what scientists can learn about our universe from these tiny particles.

**Our World: Challenges of Exploration - The Right Vehicle for the Job (#56)**

14 May 2010 6:59

Learn about the challenges of exploring the surface of Mars. Find out how NASA uses science and math to successfully design the type of vehicle needed for specific missions. See why scientists refer to entry, descent and landing as "seven minutes of terror."

**Our World: Observatories on Mauna Kea (#55)**

22 Jun 2009 6:65

Learn all about the optical telescopes on the summit of Mauna Kea in Hawaii. Find out why astronomers prefer the thin atmosphere found here and compare Earth-based telescopes to space telescopes like Hubble.

**Our World: NASA and the Super Suit (#54)**

22 Jun 2009 5:27

Learn how Speedo contacted NASA to help them test the best material possible for the new Olympic swimsuits. Find out how drag affects swimmers and how NASA could test the material for the suits in a wind tunnel.

**Our World: How Do You Get a Plane to Mars? (#53)**

22 Jun 2009 6:16

Airplanes cannot fly to Mars, so how do you get a plane to Mars so it can soar above the surface and collect interesting data about the Martian atmosphere? Learn about the protective case or aeroshell created to get Ares to Mars.

**Our World: Chandra - Exploring the Invisible Universe (#52)**

22 Jun 2009 4:42

Learn why NASA put the Chandra X-Ray Observatory far away from Earth's atmosphere to capture images of the x-rays given off by objects under certain violent conditions. Scientists use those images to learn about our universe.

**Our World: Investigating Mars with the Phoenix Lander (#51)**

26 May 2009 4:52

Find out about the amazing new discoveries made on Mars with the Phoenix Lander. See how Phoenix uncovered water ice on Mars. Learn about habitability and the difference between a day on Earth and a sol on Mars.

**Our World: Fluid Shift (#50)**

09 Nov 2010 5:30

Learn about the circulatory system and how gravity aids blood flow in our bodies here on Earth. Find out how NASA flight surgeons help the astronauts deal with the fluid shift that happens during spaceflight.

**Our World: Exercise Equipment (#49)**

09 Nov 2010 5:09

Learn about the exercise equipment used by the astronauts in space to keep astronauts fit and healthy. Compare this equipment to the exercise equipment we use here on Earth.

**Our World: Exercise in Space (#48)**

09 Nov 2010 3:49

Find out why exercise is so important to the astronauts who travel into space. Learn how gravity affects our bodies and what astronauts must do in reduced gravity environments to keep their bodies healthy.

**Our World: Life on Other Worlds (#47)**

22 Jun 2009 6:37

Explore the possibility of finding life on other planets. See how NASA's search for water on Mars proved successful with the Phoenix Lander. Find out about extremophiles and what makes a habitable zone for life as we know it.

**Our World: NASA's Lunar Electric Rover (#46)**

16 Jul 2009 6:19

When astronauts return to the moon, they will need to be able to move around on the surface. Learn about NASA's Lunar Electric Rover, or LER, that will solve problems with pressurization, moon dust and mobility.

**Our World: Cloud Inspection (#45)**

22 Jun 2009 5:05

Find out why scientists and meteorologists study clouds and what tools they use to collect data about the effect of clouds on Earth's climate. Learn to tell the difference between cirrus, stratus and cumulus clouds.

**Our World: Cool Clouds (#44)**

02 Feb 2011 7:14

Learn how clouds are formed and watch an experiment to make a cloud using liquid nitrogen. Find out how scientists classify clouds according to their altitude and how clouds reflect and absorb light, giving them different colors.

**Our World: Constellation: NASA's Next Generation Spacecraft (#43)**

27 Jul 2009 5:22

Get an up-close look at the spacecraft that will replace the shuttle. Explore the different components of the Constellation Program. Learn about Ares I, Ares V, Orion and Altair and the role each will play as we return to the moon.

**Our World: The Sun, A Real Star (#42)**

15 Mar 2011 5:25

Learn about the important relationship between Earth and the sun. Find out about the layers of the sun and how Earth's magnetosphere acts like a giant handkerchief to protect us from all kinds of space weather.

**Our World: Hubble History (#41)**

26 Oct 2009 5:46

Learn how the Hubble Space Telescope has changed the way scientists look at the universe, without the interference of Earth's atmosphere. Find out how this telescope works and a bit of history about the man for whom it is named.

**Our World: Collecting Data from Mars Using ARES (#40)**

22 Jun 2009 6:30

Learn about the ARES mission, the unmanned vehicle NASA plans to send to Mars that will fly a mile above the surface collecting data about the red planet.

**Our World: Going Green? What Does That Mean? (#39)**

01 Feb 2011 5:03

Going green? Find out how "going green" is beneficial to Earth and discover ways YOU can help keep the environment safe.

**Our World: Unmanned Aerial Vehicles (#38)**

22 Jun 2009 5:47

NASA's Unmanned Aerial Vehicles, or planes that fly without pilots, are being used to collect data about Earth.

**Our World: Instruments on the Lunar Reconnaissance Orbiter (#37)**

22 Jun 2009 4:44

Meet Cathy Peddie, a NASA engineer working on the Lunar Reconnaissance Orbiter, or LRO. Discover how the LRO will use color to learn more about the moon.

**Our World: The Lunar Reconnaissance Orbiter (#36)**

22 Jun 2009 4:55

Learn about the Lunar Reconnaissance Orbiter, or LRO. As it orbits the moon for one year, LRO will collect moon temperatures, determine safe landing sites for future NASA missions and more!

**Our World: Two Eyes on the Sun (35)**

15 Mar 2011 4:38

Learn how NASA launched two satellites to collect data about the sun. Also learn about solar eruptions and how they affect Earth and astronauts in space.

**Our World: Space Grub (#34)**

22 Jun 2009 3:58

Discover what types of food astronauts eat in space and how the food must be lightweight, nutritional, take up little space and be long-lasting.

**Our World: Altair Lunar Lander (#33)**

22 Jun 2009 4:23

In this NASA eClip, learn all about the next generation lunar lander, Altair. Altair will carry crew from Orion to the moon and back and house the crew while they are on the moon.

**Our World: A-Train Satellites (#32)**

22 Jun 2009 4:01

The A-Train consists of five satellites orbiting Earth that use the latest NASA technology to study the Earth's system. This segment introduces Aqua, one of the satellites that studies water on Earth.

**Our World: Finding Dinosaurs (#31)**

22 Jun 2009 5:03

NASA assists paleontologists in finding dinosaurs by using remote sensing technology.

**Our World: How Sand Protects the Shuttle! (#30)**

22 Jun 2009 5:10

The space shuttle uses sand as a protective covering that withstands extreme temperature changes as it enters and exits Earth's atmosphere. Find out how sand is used in shuttle tiles and as a protective layer to keep the astronauts and the shuttle safe.

**Our World: NASA's New Moon Robot (#29)**

22 Jun 2009 5:06

NASA plans to use a six-legged, wheeled robot for missions to the moon and Mars called the All-Terrain Hex-Limbed Extra-Terrestrial Explorer, or Athlete. Athlete will be used to move the astronauts' habitats and capture images to send back to Earth.

**Our World: Hubble Clothing: Thermal Protection Blankets (#28)**

09 Nov 2010 4:59

The Hubble Space Telescope is exposed to extreme temperatures in space, so NASA scientists had to find a thermal material able to protect it from the harsh environment.

**Our World: How High Is the Ocean? (#27)**

02 Nov 2009 3:18

NASA uses a new satellite called JASON-2 to measure ocean heights.

**Our World: Monitoring the Earth's Climate with CERES (#26)**

02 Nov 2009 3:18

Learn how scientists use a satellite called CERES to study the clouds and monitor Earth's climate changes.

**Our World: Digging in Moon Dirt (#25)**

22 Jun 2009 5:20

NASA scientists are working to develop a machine capable of digging in the fine, razor sharp dirt on the moon. Go behind the scenes at the NASA lunar backhoe competition where researchers compete to find out whose machine rises to the challenge.

**Our World: Lunar Habitat – Structure (#24)**

22 Jun 2009 5:40

In this NASA video segment, find out about different structures being considered for living on the moon.

**Our World: Surface Currents (#23)**

22 Jun 2009 4:38

This NASA video segment explains the variables that affect and steer ocean surface currents.

**Our World: Why Are Oceans Salty? (#22)**

22 Jun 2009 2:27

This NASA video segment explains how oceans were formed, what makes them salty and how they are different than fresh water rivers.

**Our World: What Is a Tide? (#21)**

25 Jan 2010 3:30

The sun, moon and gravity all play a role in the creation of tides and waves. This NASA video segment demonstrates how the three interact to form waves.

**Our World: The Moon (#20)**

22 Jun 2009 3:59

This NASA video segment looks at the moon and its relationship to Earth.

**Our World: How Gears Work (#19)**

22 Jun 2009 4:30

This NASA video discusses gears and how they work together as a simple machine. Demonstrations explain primary and follower gears and how different-sized gears affect rotational speeds. Math is used to determine the force produced by meshed gears.

**Our World: What Is a Cloud? (#18)**

02 Feb 2011 2:40

This NASA video segment describes the different types of clouds and cloud formation. The relationship between clouds and weather on Earth is demonstrated.

**Our World: How Pulleys Work (#17)**

22 Jun 2009 3:06

In this NASA video segment an aerospace engineer explains how pulleys work and how they are used to lift and transport the space shuttle.

**Our World: Science in the Circus (#16)**

22 Jun 2009 2:59

This NASA video segment describes some science principles found at the circus, such as levers and pulleys. Potential energy and kinetic energy are also introduced.

**Our World: How Elevators Operate (#15)**

22 Jun 2009 2:55

Go behind the scenes with a mechanical engineer to learn how elevators operate. This NASA video segment explains how balance, counter weight and traction all play an important role in the operation of elevators.

**Our World: What Is Work? (#14)**

22 Jun 2009 2:12

This NASA video segment explains the relationship between work, force and distance. Sample problems demonstrate how to calculate work.

**Our World: What Is Weather? (#13)**

22 Jun 2009 3:12

This NASA video segment focuses on the relationship between weather and climate. Learn how heat, air pressure, winds and moisture work together to produce local weather.

**Our World: What Is a Ratio? (#12)**

22 Jun 2009 2:44

This NASA video segment explains how ratios are used to compare two numbers. Fractions and ratios are used in example problems.

**Our World: Energy and Work (#11)**

22 Jun 2009 2:31

This NASA video segment discusses the relationship between energy and work. Ways people try to overcome Earth's gravity in order to do work are explored.

**Our World: What Is a Hurricane? (#10)**

22 Jun 2009 4:29

This NASA video segment explains the formation of hurricanes. Go behind the scenes with a meteorologist at the Weather Channel in Atlanta, Georgia to learn how scientists predict hurricanes and hurricane formation.

**Our World: The Importance of Spacesuits (#9)**

22 Jun 2009 2:50

This NASA video segment explains how spacesuits keep astronauts safe while they are in space. Learn about different components of a spacesuit and the importance of each component.

**Our World: Living Conditions in Space (#8)**

22 Jun 2009 1:41

In this NASA video segment, astronauts in orbit compare living conditions in space to life on Earth.

**Our World: Radiation (#7)**

22 Jun 2009 3:30

This NASA video segment looks at radiation in space and on Earth. Learn about two types of radiation and how NASA engineers are developing better shielding material to protect astronauts during long missions in space.

**Our World: Traveling to the Moon and Mars (#6)**

09 Nov 2010 3:54

This NASA video segment calculates the distance from Earth to the moon and from Earth to Mars. This video also analyzes the temperature and surface of other planets and explains why Mars is targeted for human exploration.

**Our World: Seeing Stars (#5)**

22 Jun 2009 4:24

Peer through a telescope's lens for a closer look at planets and star clusters. This NASA video focuses on the habitable zone, the Orion Nebula and the Whirlpool Galaxy.

**Our World: How Oil Spills Are Affecting our Planet (#4)**

22 Jun 2009 3:32

Oil spills affect our planet in many harmful ways. To contain the spill, the Environmental Protection Agency, or EPA, and Coast Guard map the location and use weather and current data to predict the path of the oil.

**Our World: The Topography of the Ocean (#3)**

22 Jun 2009 2:36

This NASA video segment describes the topography of the ocean floor and discusses oil and gas seepages in the ocean.

**Our World: Offshore Oil Drilling (#2)**

22 Jun 2009 2:48

This NASA video segment focuses on offshore oil drilling and oil pollution in the ocean. Color animation demonstrates how oil is collected from the ground.

**Our World: Propulsion Systems (#1)**

09 Nov 2010 2:59

This NASA video segment compares efficiency of different types of propulsion systems. NASA is designing improved propulsion systems that are faster, safer, more cost effective and more reliable.