

Mission 2 Space!



Shuttle

If you've ever dreamed of traveling to space, then come join us as we build a model of a NASA space shuttle. The shuttle program lasted over thirty years, flying more than 100 missions. With more than 2.5 million parts, the space shuttle has been called the most complex machine ever built! (Thankfully, our model has a few less pieces!) We'll learn about the three main components of the shuttle, how it is launched, the speeds it reaches, how long missions last, and much more. Vocabulary includes *orbiter*, *external*, *launched*, *ascend*.



Launch Pad

Get ready for lift-off! We'll examine the features of the launch pad, part of Launch Complex 39 at Florida's famous Kennedy Space Center. Learn how NASA engineers make final launch preparations, where astronauts enter the shuttle, the purpose of the huge water tank located next to the launch pad, and how far away people need to be to stay safe from the extreme heat and intense noise generated by a shuttle launch. Now that the shuttle program has ended, what will become of the launch pads? Join us to find out! Vocabulary includes *octagon*, *fixed*, *rotating*, *mobile*.



Crawler-Transporter

The Crawler-Transporter which carries a shuttle to the launch pad is the largest, self-propelled, land-based vehicle in the world! We'll find out how much fuel it takes to get this massive vehicle lumbering along with its precious cargo on board, and just how fast - or should we say how *slow* - it goes as it makes its way to the launch pad. It's called a crawler for a reason! Build your own crawler and see how slow it must roll along to keep your shuttle upright. Vocabulary includes *track*, *crawlerway*, *rollout*, *rollback*.



Lunar Rover

The Lunar rover is a vehicle about the size of a Volkswagen Beetle, specially designed for travel on the surface of the moon. Shuttle missions carried a rover on board to allow astronauts to explore the rocky terrain of the moon. Dressed in space suits, astronauts used a joystick-like controller to drive this sophisticated dune buggy. But don't worry; you won't need to suit up to drive our model! Find out how many rovers have gone to space, how much they cost and how far they travelled. We'll also explore rover concepts in the works for future moon expeditions. Vocabulary includes *aluminum*, *prototype*, *terrain*.



Mars Rover

Did you know that humans have made 40 attempts to explore Mars? The cold, mysterious "Red Planet" keeps us wondering – are we alone in the universe, or is there life out there? Students will build a model of a Mars Rover, similar to the Curiosity rover which landed on the surface of Mars in August, 2012. Curiosity is the biggest and most sophisticated vehicle yet to land on Mars. Satisfy your "curiosity" about what this latest rover can do, how we interact with it from earth, how it got to Mars, and whether or not it is coming back! Vocabulary includes *rover*, *microbial*, *uploaded*.



International Space Station

Cooperation is the key word when speaking of the International Space Station (ISS). It is a joint effort of 15 nations spanning over ten years, with the goal of conducting research in space that will allow humans to travel longer and farther in space, as well as help solve problems here on earth. International crews live and work at the ISS for up to 6 months at a time! We'll learn about the components and construction of the ISS and then work cooperatively with a partner to build a brick-sized space station model. Vocabulary includes *cooperative*, *module*, *solar panels*, *micro-gravity*.