Lift Off

1. Did you ever look up at the stars and wish you could get a closer view?

2. Or wonder what makes a rocket blast off?

hands-on science activities for

SPACE
A JOURNEY TO OUR FUTURE

3. Or try to imagine floating around like the astronauts?

4. Or dream about living on another planet?

Then Look Inside

1. Star Gazers. A telescope works because of the two lenses inside it. The lenses are shaped like the drop of water that made your newspaper type look bigger. The shape of your lens (and Galileo's) is called "convex". A lens that is curved the other way is a "concave" lens. A telescope's first lens is a light gathering device which focuses the gathered light to a single point. The second lens is a magnifier that magnifies that point. So telescopes don't just make things look larger, they bring distant objects closer. (Science Standard B – Physical Science, light)

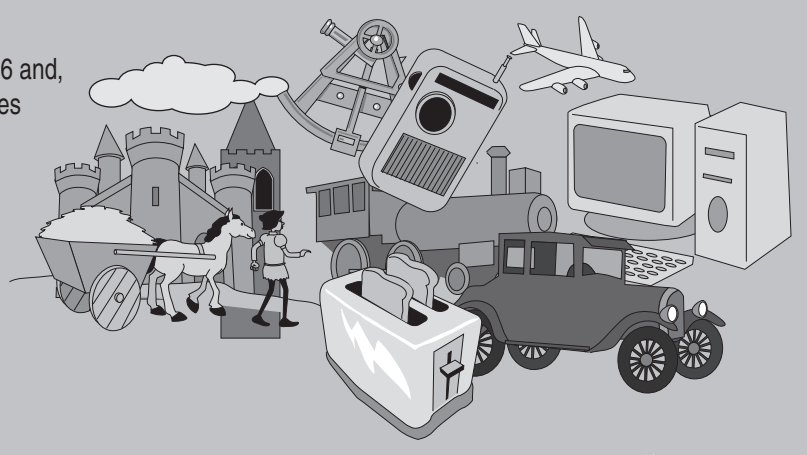
2. Fly Me to the Moon. It takes a lot of force to launch a capsule into space. Rocket fuel is used to provide the necessary force and generate thrust. This powers lift-off and overcomes the force of gravity. Early capsules (like the cup you used) were designed to be small and lightweight. They were not reusable like the Space Shuttle. Today's Shuttle (like your paper airplane) is shaped more like an airplane because it has to be steered and landed on the ground. (Standard E – Science and Technology, technological design)

3. Living the Dream. Do you know the feeling of floating as you go over the top of a big hill on a roller coaster or in a fast-moving car? At that moment you are in microgravity or freefall like the astronauts in Earth orbit. Microgravity is a more accurate word than "weightlessness." You (and the action figure in your shoebox) are also in freefall after you jump into the air and are just starting to return to the ground. (Standard D – Earth and Space, gravity)

4. Mission: Mars. Carbon dioxide is an invisible gas that is heavier than air. It sinks to the bottom of the cup. When you pour it from one cup to the other, it sinks down on top of the candle, keeping the oxygen away and putting out the flame. Fires cannot burn on Mars because there's very little oxygen. Mars' atmosphere is 1 percent of Earth's in terms of density. On Earth we use oxygen to breathe and to keep warm. (Science Standard B – Physical Science, properties of materials)

Dreams Come True

How have our adventures in space changed us? Compare what life was like in 1609, 1966 and, for you, today. Research and find out what technology was available and how people's lives were different. Choose a time in the past and write a story about what it was like to be a kid growing up then or imagine being a kid in the future and write about that.



Explore Some More

Try these websites and books for more adventures in space.

http://solarsystem.nasa.gov
http://planetquest.jpl.nasa.gov
http://amazing-space.stsci.edu
http://kids.msfc.nasa.gov

Engelbert, Phillis and D. Dupuis. **The Handy Space Answer Book.**
Ride, Sally. **To Space and Back and The Mystery of Mars.**
Schatz, Dennis. **Totally Aliens.**
Sipiera, Paul. **The Solar System; Black Holes and many others.**
Danbury, CT: Children's Press, 1997.

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Space Day

written by Jennifer Boxer; illustrated by Dennis Smith
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