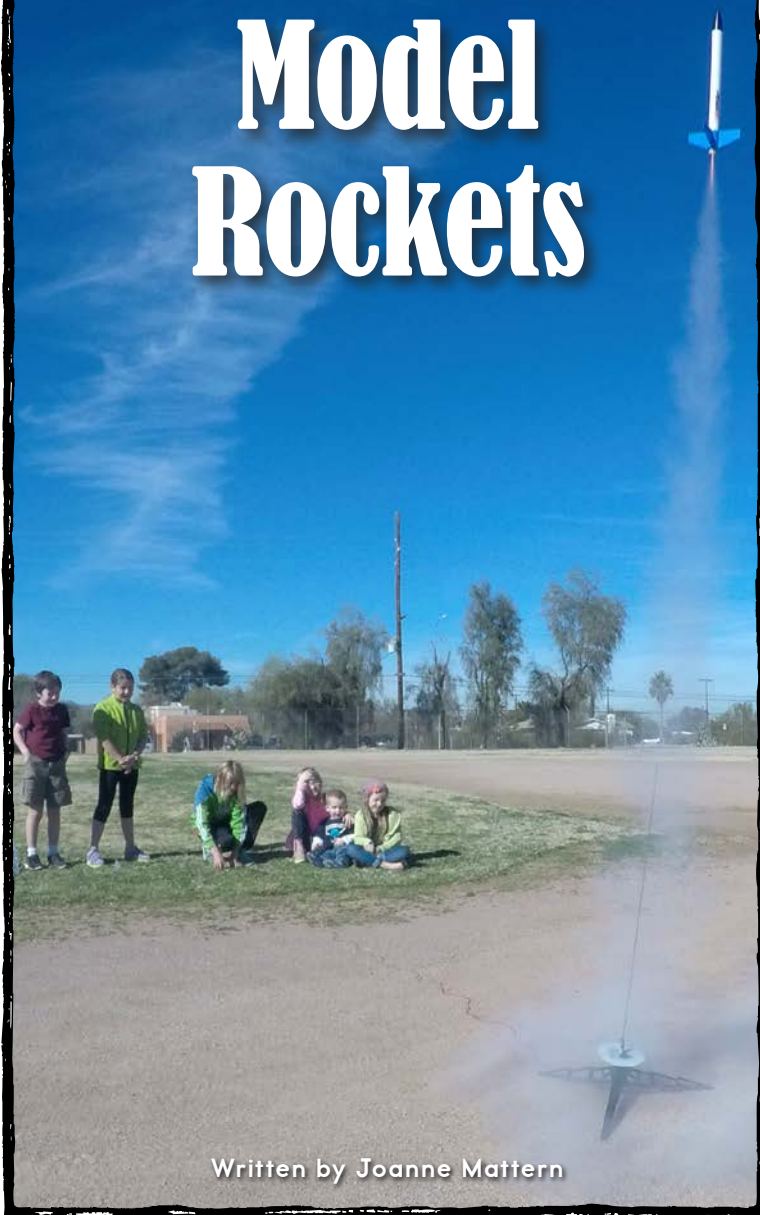


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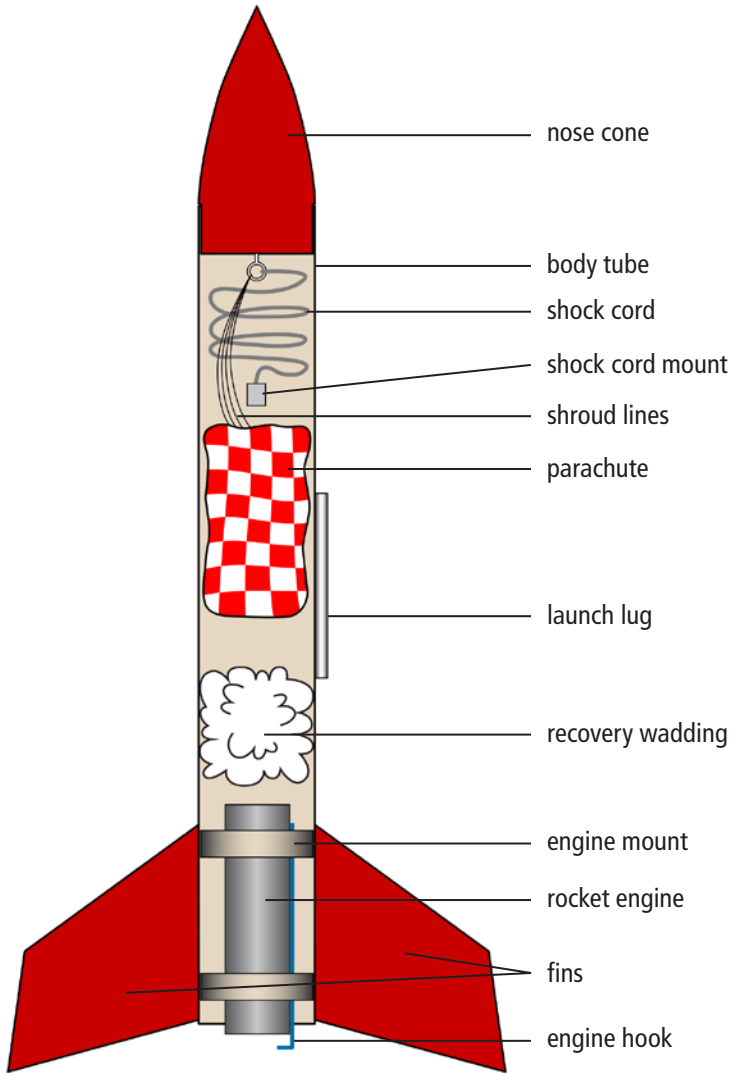
Model Rockets



Written by Joanne Mattern

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Table of Contents

Liftoff!	4
The History of Rockets	5
Parts of a Model Rocket	6
At the Launchpad	10
Clubs and Competitions	12
Glossary	16



Liftoff!

Three . . . two . . . one . . . liftoff!

A **model** rocket shoots into the sky.

The rocket can fly up to 1,500 feet (457 m) high!

Watching these small rockets fly can be fun and exciting. Model rockets aren't just for fun, though. They also teach us about science and space.



Kids have been building and painting model rockets for decades.

The History of Rockets

People in China invented rockets about eight hundred years ago. They filled tubes with gunpowder and shot them at their enemies. Later, scientists built rockets that could go into space. Starting in the 1950s, people began building model rockets for fun.



The pieces of a model rocket need to be carefully put together (top).
A finished rocket is ready to fly (bottom).

Parts of a Model Rocket

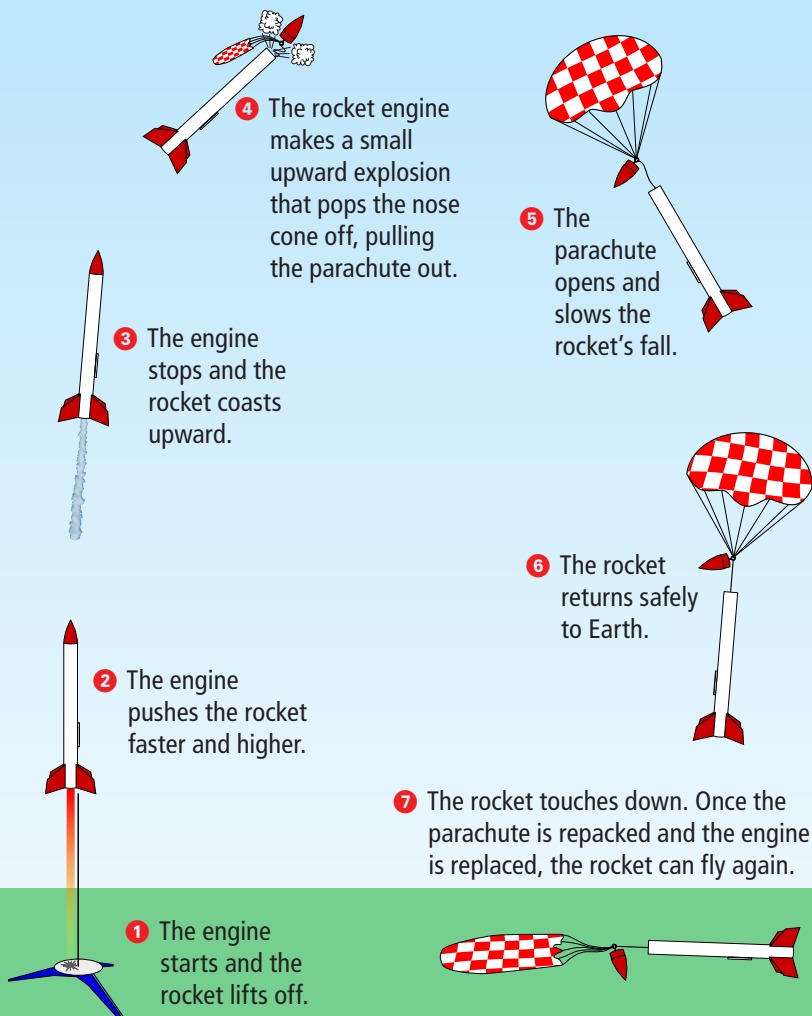
A model rocket kit comes with all the parts a rocket needs.



Nose cones and rocket bodies come in many shapes and sizes.

A model rocket's body is a long tube made of cardboard or plastic. The nose cone fits into the top of the tube. The size and shape of a rocket's body and nose cone can change how it flies.

Steps in a Model Rocket's Flight



Fins help the rocket fly straight. The **engine** burns fuel to push the rocket into the air. A **parachute** helps the rocket fall safely back to Earth.



Painting a rocket is often the final step of building.

People like to make their rockets look great. Many people paint their rockets with different colors and **designs**. Every rocket is one of a kind!

At the Launchpad

The only place to launch a rocket is in an open space. The launch area needs to be far away from people and buildings. A large field or a playground is a good spot.

First, set up the launchpad. Place the rocket over the guide wire on the pad. The guide wire keeps the rocket pointing straight up



A girl connects the wire that will allow the controller to start the rocket engine.

when it lifts off. Connect the launch controller to the rocket engine. Then step back and press the button on the controller to start the engine. *Whoosh!* The rocket flies up and away.



Even in a large launch area, a rocket can get stuck in a tree as it floats back to the ground on its parachute. If a rocket gets stuck in a tall tree or on a power line, it should be left there for safety reasons.

Staying Safe

Model rockets are fun, but they can be dangerous. Follow these rules to stay safe:

- Use only safe materials and engines in your rocket.
- Always launch your rocket outside in an open area.
- Make sure there is no dry grass or any other fire hazard at the launch site.
- Make sure everyone is at least 15 feet (4.5 m) away before you launch your rocket.
- Count down before you launch.
- Ask an adult for help if you have any questions.



A Cub Scout launches a model rocket as his den leader watches during an event in New Jersey.

Clubs and Competitions

People who fly model rockets often join model rocket clubs. Schools or **hobby** groups can have information about model rocket clubs. A science center or museum might have a model rocket club, too.



One hundred teams competed in this rocketry challenge in Virginia.

Many people enter model rocket **competitions**. They set off rockets and see which one flies the highest and the fastest. Model rocket competitions are held all over the world.



Getting started with model rockets doesn't have to take a lot of money. A basic kit can cost as little as \$10 or \$20.



A team from Michigan gets its rocket ready during a competition.

In the United States, students between twelve and eighteen can enter the Team America Rocketry Challenge. Every spring, one hundred teams compete to become the best in the country. The winners go on to compete against other teams from around the world.



The rockets used in the Team America Rocketry Challenge carry eggs. If the egg breaks, the team loses!



Kids watch as a rocket soars high into the sky.

Model rockets are a fun way to learn about science. Who knows how high a model rocket can take your imagination?

Glossary

competitions (<i>n.</i>)	rivalries between businesses, teams, or individuals for something desired (p. 13)
designs (<i>n.</i>)	the appearance or style of something built or made (p. 9)
engine (<i>n.</i>)	a machine, usually with moving parts, that uses power to create motion (p. 8)
hobby (<i>n.</i>)	an activity done for fun and relaxation (p. 12)
model (<i>n.</i>)	a usually smaller version of an object made to look like the real thing (p. 4)
parachute (<i>n.</i>)	a large canopy made of fabric that greatly slows the movement of someone or something through the air (p. 8)

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Page 3: A father and daughter work together to build a large model rocket.

Page 4: A father and son watch a model rocket blast off from a launch pad.

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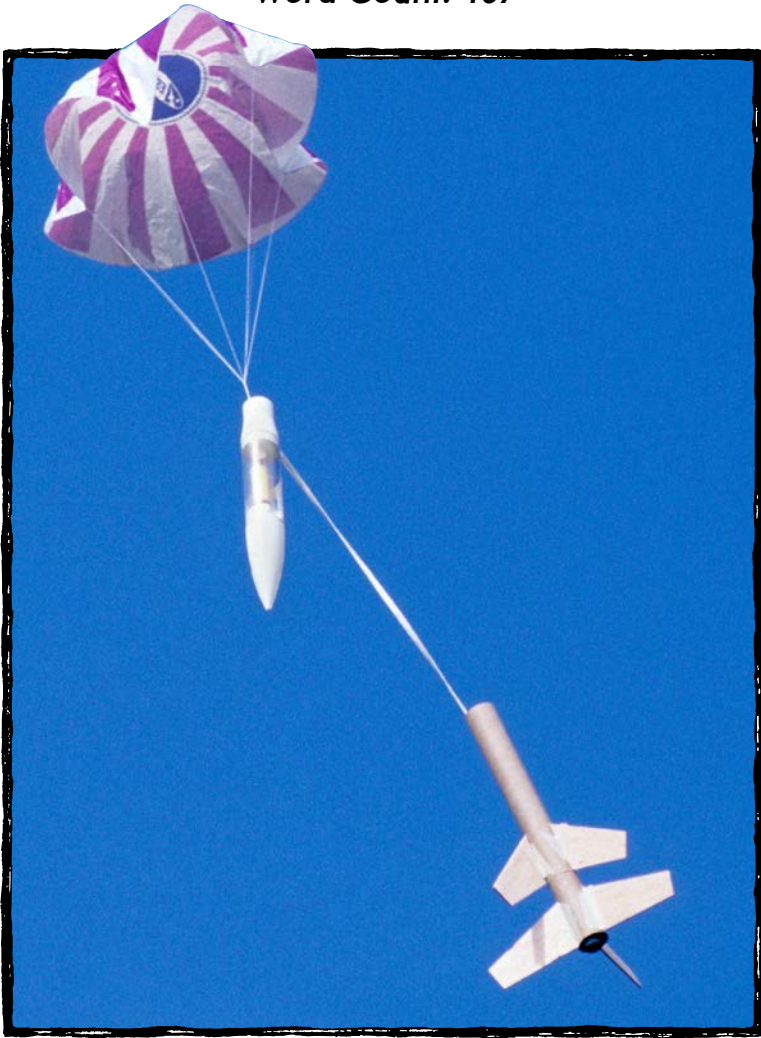
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