

## What Can I Teach My Students Through Model Rocketry?

There are many subjects you can teach with model rocketry. Here is how they can fit into your curriculum.

First of course is the science. Rocketry shows the physics given in Newton's Laws and the relations of motion, energy, force, velocity and acceleration.

Aerodynamics is involved with the stability and performance of the model controlled by drag, lift, and balance.

Electronics comes into play when you understand power, current, and resistance in the firing circuit.

You have to consult meteorology to determine if the wind speed, visibility and temperature are okay to fly.

Rockets are used to get into space, so they can introduce astronomy.

And of course computers can be incorporated in rocketry in a number of ways.

For math, you can go as far as using calculus to predict a rocket's altitude, or you can measure it with some simple trigonometry and a protractor. Algebra is necessary to solve for certain design parameters.

Much of the math will come out of the physics, so there are abundant applications with rockets instead of abstract exercises from a textbook.

There's even more than math and science. In studying a scale NASA model, you can learn the history behind it. Rockets launched the world into a new cultural age.

The V-2 was developed in Germany, but laid the groundwork for the U.S. space program. And the Saturn V took men to the moon.

Rocketry brings out discussions of the social impacts of technology. The student who may not be so interested in calculating the rocket's velocity may be very interested in writing a report of how the launch worked. They can describe the process of building the rocket and the procedures for flying it.

Even though this is a scientific device, it takes some craftsmanship and manual dexterity to assemble the rocket. Artistic students will enjoy painting and decorating the models, or drawing and illustrating the design.

Finally, launching a rocket is often a team effort. A flight experiment mission or a rocket range operation will drive cooperation and coordination with several people and become a very meaningful interactive exercise.

Then again, a student can be encouraged to do a lot of independent research in finding a specialized answer in the library or on the Internet.

So there you have it, just a few of the things you can teach your students through the hands on experience rocketry has to offer.