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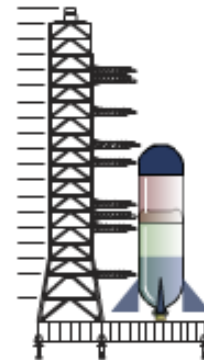
Water Rockets

Welcome!

Water rockets are an excellent tool to learn about rockets, propulsion, and aerodynamics.

The Beginner's Guide to Rockets introduces the physics principles and math behind water rockets. The activities were developed for middle school students (grades 5-8) and align with National science, mathematics, and technology standards for education. The materials are also appropriate for grades 9-12 and lifelong learners.

The navigation panel is found on the left and will be in the same location on all pages.



- **About Rockets** includes the history of rocketry, information on the parts of a water rocket, a comparison of a water rocket and a NASA rocket, and instructions for building a water rocket launcher.
- **Start Your Journey** includes a hands-on experiment, a pre-test, and links to activities that will help you understand Laws of Motion, thrust, acceleration, stability, center of gravity, and drag.
- **Educator Section** includes additional materials for educators to use to reinforce and extend the concepts presented in Rocket Research 101, 102, and 103.
- **Rocket Safety** includes safety guidelines you should follow before, during, and after the launch of a water rocket.
- **The Simulators** There are three simulation programs available at this site: a 1 dimensional simulation called BottleRocketSim, a 2 dimensional simulation called RocketModeler II, and a 3 dimensional simulation called WaterRocketSim. Use the simulators to design and launch water rockets before you build and launch the real thing!
- **Install the Simulator** provides directions for installing the Java runtime engine and Java 3D for the 3D simulation.

When you have reviewed the background material in **About Rockets, Start Your Journey!**

CAUTION!

Please review **Rocket Safety** before launching a water rocket.

Any comments, concerns, or questions should be addressed to:
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Responsible NASA Official: **Jo Ann Charleston**



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