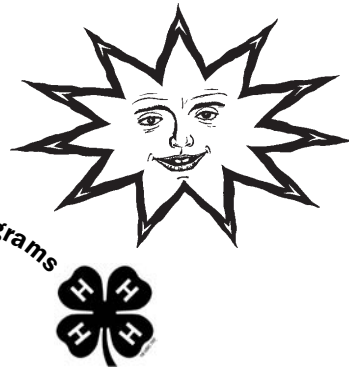


S·c·i·e·n·c·e
Alive
in the
Classroom

... with 4-H School Enrichment Programs



Rockets Away!

The Science of Motion 3rd grade classrooms

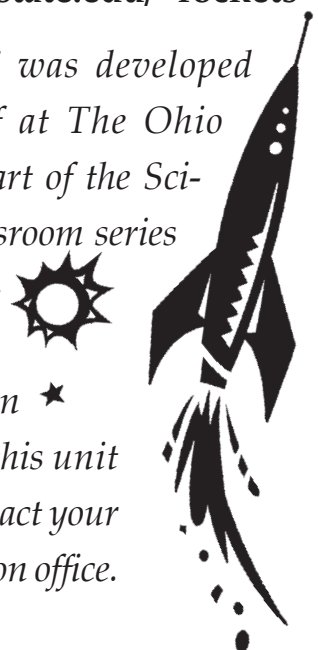
Blast off for an action-packed adventure in math, engineering, aerospace, and physics with this three-unit study of rocketry science. Lessons in motion, gravity, and aerodynamics send students' interest soaring. All lead up to the ultimate thrill—building and launching their own rockets. Among the activities:

- **understanding and applying Newton's three Laws of Motion**
- **observing the relationship between force and mass**
- **testing turbulence**
- **exploring stability and motion**
- **constructing and launching a 2-liter bottle rocket**

The teacher manual comes complete with lesson plans. Optional IBM-compatible software presents problem simulations and design and flight configurations for 2-liter bottle rockets. Also included is a program for recording and analyzing launch data. Visit us on the Web:

<http://www.ag.ohio-state.edu/~rockets>

Rockets Away! was developed by professional staff at The Ohio State University as part of the Science Alive in the Classroom series of 4-H school enrichment programs. For additional information ★ on the availability of this unit in your classroom, contact your county's OSU Extension office.



Rockets Away!

Grade 3—Ohio Academic Content Standards and Indicators, 2007

| Physical Sciences | | |
|--------------------------------------|---|---|
| Forces and Motion | 1. Describe an object's position by locating it relative to another object or the background. | X |
| | 2. Describe an object's motion by tracing and measuring its position over time. | X |
| | 3. Identify contact/ non-contact forces that affect motion of an object (e.g., gravity, magnetism and collision). | X |
| Abilities To Do Technological Design | 4. Predict the changes when an object experiences a force (e.g., a push or pull, weight and friction). | X |
| Science and Technology | | |
| Understanding Technology | 1. Describe how technology can extend human abilities (e.g., to move things and to extend senses). | X |
| | 2. Describe ways that using technology can have helpful and/or harmful results. | X |
| | 3. Investigate ways that the results of technology may affect the individual, family and community. | |
| Abilities To Do Technological Design | 4. Use a simple design process to solve a problem (e.g., identify a problem, identify possible solutions and design a solution). | X |
| | 5. Describe possible solutions to a design problem (e.g., how to hold down paper in the wind). | X |
| Scientific Inquiry | | |
| Doing Scientific Inquiry | 1. Select the appropriate tools and use relevant safety procedures to measure and record length and weight in metric and English units. | X |
| | 2. Discuss observations and measurements made by other people. | X |
| | 3. Read and interpret simple tables and graphs produced by self/ others. | X |
| | 4. Identify and apply science safety procedures. | X |
| | 5. Record and organize observations (e.g., journals, charts and tables). | X |
| | 6. Communicate scientific findings to others through a variety of methods (e.g., pictures, written oral and recorded observations). | X |

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Keith L. Smith, Associate Vice President for Agricultural Administration and Director, Ohio State University Extension

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