

# 2003–2004 Series Overview



## What is the NASA SCI Files™ ?

The NASA SCI Files™ is a research- and standards-based series of FREE integrated mathematics, science, and technology instructional distance learning programs that NASA Langley Research Center in Hampton, VA created for students in grades 3–5. The series uses Problem-Based Learning (PBL) to introduce students to scientific inquiry while providing students the opportunity to solve real world problems with the help of community experts and NASA researchers.

The NASA SCI Files™ supports the teaching of national standards identified by the National Science Teachers Association (NSTA), the National Council of Teachers of Mathematics (NCTM), the International Society for Technology in Education (ISTE), the International Technology Education Association (ITEA), and the National Council for Geographic Education (NCGE).

## Who are our partners?

The series is a partnership involving organizations that are committed to inspiring America's students, creating learning opportunities, and enlightening inquisitive minds. Hampton (VA) City Public Schools, dedicated to excellence in education, generously provide the series with teachers who ensure that the content is standards based and appropriate for grades 3–5. Busch Gardens (Williamsburg, VA), committed to helping schools increase students' academic achievement, provides numerous informal educational resources and learning opportunities through its nationwide system of parks and

employees. The Society of Women Engineers (SWE), devoted to helping women achieve their full potential in careers as engineers and leaders, provides classroom mentors and role models for young girls.



## What is the NASA SCI Files™ all about?

The NASA SCI Files™ story lines are developed by

educators and involve the exploits of six ethnically diverse, inquisitive children who are excited about mathematics, science, and technology. The tree house detectives, as they are known, meet in a tree house where they work together using Problem-Based Learning and scientific inquiry to investigate and solve “real-world” problems that occur in their community. To find solutions to these problems, they are guided by their mentor, Dr. D, a retired science teacher. NASA researchers, community experts, and students across the country, who are members of the NASA SCI Files™ Kids Club, also help with their investigations.

## What are the components of the NASA SCI Files™ ?

Each program in the series has three components that make up an integrated instructional package:

**Television Broadcast:** Each 60-minute program is divided into four, 15-minute instructional segments that feature focus and extension questions. Content experts, experiments, museums, NASA researchers, classroom activities, and the NASA SCI Files™ Kids Club are included in every program. Each program in the 2003–2004 season is closed-captioned for the hearing and visually impaired.

**Educator Guide:** Each guide includes a listing of the featured national mathematics, science, technology, and geography standards; a program overview, vocabulary, implementation strategy, activities, experiments and worksheets; related print, and electronic resources, and career information.

**Web Site:** The web site is divided into teacher, parent, and student sections and features suggested usage, Problem-Based Learning information and online PBL investigations, Dr. D's Lab, the Media Zone, the Resource Rack, the Expert's Corner, and the Problem Board.

## How can I get the television broadcast?

There are five ways to receive the television broadcast and/or purchase a video copy of the program.

1. Many PBS and ITV stations nationwide carry the NASA SCI Files™ programs. Check our web site, <http://scifiles.larc.nasa.gov> for local listings.
2. The programs are broadcast on Ku- and C-band satellite and can be downlinked by using the satellite coordinates listed on the NASA SCI Files™ web site.
3. Programs are available on the Web through Knowitall.org, [http://knowitall.org/nasa/html/\\_wm/scifiles/html](http://knowitall.org/nasa/html/_wm/scifiles/html) (p. 8).
4. You can obtain video copies of the broadcasts from the NASA Educator Resource Center in your state, <http://education.nasa.gov/ercn> (p. 9).
5. You may purchase the video copies from NASA CORE, Central Operation of Resources for Educators, <http://core.nasa.gov> (video series) (p. 8).

### How much does it cost and how do I register?

The NASA SCI Files™ is FREE to educators. Registered educators receive a reminder notice of upcoming programs via E-mail and can download the educator guides. You can register for the series in one of four ways.

**Electronically:** <http://scifiles.larc.nasa.gov>  
**U.S. Mail:** NASA SCI Files™, Langley Research Center, Mail Stop 400-DL, Hampton, VA 23681  
**Fax:** 757-864-6521  
**Telephone:** 757-864-5044

### What rights and responsibilities are associated with the NASA SCI Files™?

The NASA SCI Files™ is a U.S. Government product and is not subject to copyright. There are no fees or licensing agreements. Broadcast and off-air rights are unlimited and granted in perpetuity.

### How do I get a classroom mentor?

The Society of Women Engineers (SWE) provides classroom mentors to assist educators. Every effort will be made to match an educator with a SWE member who will assist the educators either in person or by E-mail. To request a mentor, visit the NASA SCI Files™ web site and click on the "Mentors" fence post. At least four weeks advance notice is required to secure a mentor.

### What is the instructional design of NASA SCI Files™?

Each program in the 2003–2004 NASA SCI Files™ series is designed to enhance and enrich the teaching of specific mathematics, science, and technology concepts. The NASA SCI Files™ series is designed to be easily integrated into an existing curriculum or used to introduce or reinforce a curriculum topic, objective, or skill. These instructional programs demonstrate scientific inquiry, Problem-Based Learning (PBL), and the application and integration of mathematics, science, and technology. The NASA SCI Files™ has three goals:

1. To use PBL to introduce students to scientific inquiry and the scientific method.
2. To provide students with the opportunity to simultaneously learn subject matter and develop problem-solving skills while investigating real-world problems.
3. To demonstrate workplace mathematics, science, and technology as a collaborative process while raising students' awareness of careers and overcoming students' stereotyped beliefs by presenting women and minorities in challenging careers.

Each NASA SCI Files™ program models scientific inquiry and PBL and includes defining the problem, performing research and investigations, formulating a hypothesis, performing experiments, collecting and analyzing data, drawing conclusions, finding a solution to the problem, and publishing the results.

Each 60-minute program is divided into four 15-minute segments that are introduced with a set of focus questions for students to answer while viewing the segment as well as "What's Up?" questions at the end of each segment. The accompanying educator guide provides a program summary and objectives; relevant national mathematics, science, and technology standards; vocabulary; suggested use of the broadcast, guide, and web site; print and online resources; and activities.

### What is the NASA SCI Files™ teaching strategy?



Problem-Based Learning (PBL) and scientific inquiry are at the core of the NASA SCI Files™. Through the use of PBL and scientific inquiry, the teaching strategy is designed to encourage the development of higher order cognitive skills and a more active mental engagement with the television broadcast. Following the steps of the strategy listed below enables students to make stronger connections between the television broadcast, the activities, the web site, and appropriate mathematics, science, and technology concepts.

The strategy includes reflective discussion, student involvement, hands-on activities, journal writing, and web activities. The strategy promotes rich discourse among students. Program evaluation indicates that teachers find the strategy flexible and effective in enhancing students' understanding of complex mathematics, science, and technology concepts.

## Steps in the NASA SCI Files™ teaching strategy

### Step 1: Reflective Discussion

Prior to viewing the NASA SCI Files™, read the program summary to the students. List and discuss questions and determine preconceptions that students have about the program topic. Keep these questions visible during the program. List the key vocabulary words on the board or chart and discuss their definitions.

### Step 2: Student Involvement

The NASA SCI Files™ is not designed for passive viewing. Rather, it is designed to actively engage students throughout the program. To provide educators a way to focus student attention on the major concepts presented in the program, the NASA SCI Files™ uses two questioning strategies.

**Focus Questions:** The focus questions center on the critical elements of each segment. Educators should copy the questions from the web site and distribute them prior to viewing each segment. Students are encouraged to look for the icon that will appear on the screen to tell them that an answer is near.

**What's Up? Questions:** At the end of each segment there are "What's Up?" questions for students to

reflect upon. Students' reflections allow the educator to determine if the students understand the concepts being introduced in each segment. By using these questions along with the focus questions, students can discuss the tree house detectives' progression in their scientific investigation and predict what will happen next. The students can also decide what additional information is needed as they begin to anticipate the solution to the problem.

### Step 3: Hands-On Activities

The teacher-developed and tested, hands-on activities in the guide and on the web site are designed to enhance and enrich the teaching and learning of mathematics, science, and technology concepts introduced in each segment. In the guide or on the web site, you will find an activity for each objective listed. These activities can be modified and/or adapted for the various academic levels in a classroom.

### Step 4: Online PBL Activity

Each program in the NASA SCI Files™ is accompanied by a unique online PBL investigation designed to encourage students to apply problem-solving skills to an open-ended situation. These investigations can be found in the Kids' Tree House on the Problem Board of the NASA SCI Files™ web site. <http://scifiles.larc.nasa.gov>

### Step 5: Journal Writing and Assessment

Journal writing supports the students' reflective thinking process. At the end of each segment, students should reflect on what they have learned from the segment and from their own experimentation. Journal writing is one way to assess student understanding of the concepts presented in the program and the scientific process. Other assessment tools such as rubrics, checklists, charts, and evaluation tools can be found on the web site in the educator area under "Tools."

## What is the research basis for the NASA SCI Files™ ?

The NASA SCI Files™ draws from a growing body of research knowledge about the nature of learning; the principles of learning and teaching in general; and those principles that are specific to the teaching and learning of mathematics, science, and technology in grades 3–5. The philosophy of the series is based on the premise that teaching and learning are mutually inclusive and inseparable. All children, and young children in particular, are naturally inquisitive about the world in which they live. From a teaching perspective, the challenge for educators becomes that of developing strategies and methods that harness, capture, and capitalize on children’s natural curiosity. Furthermore, *Science for all Americans: Project 2061* states that children can learn most readily about things that are tangible and directly accessible to their senses. It further states that constructive, concrete experiences are most effective in learning when they occur in the context of some relevant conceptual structure (Rutherford, 1990).

Children are naturally curious and want to know and understand the “why” of their world (National Academy of Sciences, 2000). Although investigation of the natural world may take a variety of forms, the NASA SCI Files™ uses inquiry as a strategy (1) that builds on children’s natural inquisitiveness; (2) that helps students understand mathematics, science, and technology as human endeavors; (3) that assists students in acquiring knowledge and critical thinking skills; and (4) that introduces students to mathematics, science, and technology career fields. The series uses Problem-Based Learning (PBL), a form of inquiry-based teaching, which allows students to take an active role in the learning process. PBL empowers students with the responsibility of managing a largely self-directed learning process (Boud and Felietti, 1997). PBL also encourages students to develop skills that will enable them to understand the relationships between mathematics, science, and technology and to become adult (lifelong) learners (Brine and Shannon, 1997). Coupled with inquiry-based learning, the NASA Science Files™ uses PBL and “real world” problems to make learning mathematics, science, and technology active, interesting, and relevant to students (Cawelti, 1999).

- (1) Cawelti, Gordon: *Handbook of Research on Improving Student Achievement*. Educational Research Service, 1999. JSBN:
- (2) Rutherford, F. James. *Andrew Ahlgren: Science for All Americans*. Oxford University Press, 1990, ISBN: 0195067711.
- (3) Boud, David and Grahame Felietti: *The Challenge of Problem-Based Learning*. Kogan Page Ltd., 1997, ISBN: 0749425601.
- (4) Brine, J. and S. Shannon: *Reflections on Problem-Based Learning*. Wild & Wooley Pty. Ltd., 1997.

### **What is the best way to use the NASA SCI Files™ ?**

For the most effective use of the NASA SCI Files™, it is strongly recommended that the programs be videotaped from the broadcast prior to the students’ viewing. The programs are designed to be viewed in 15-minute instructional segments.

The NASA SCI Files™ series introduces students to Problem-Based Learning and scientific inquiry. It encourages the development of higher order cognitive skills and a more active mental engagement with the television broadcast. Following the recommended strategy in each educator guide enables students to make stronger connections between the television broadcast, the hands-on activities and experiments, the web site, and appropriate mathematics, science, and technology concepts.

The educator guide includes suggestions for reflective discussion, student involvement, hands-on activities, experiments, journal writing, and web activities. The strategy promotes rich discourse among students. The proposed format is flexible and effective in enhancing students’ understanding of complex mathematics, science, and technology concepts.



# 2003–2004 NASA SCI Files™ Programs

## How can my class participate in NASA LIVE™ ?

Now, in addition to the broadcast, educator guide, and web activity, your students can participate in a FREE virtual field trip. This 30-minute, interactive videoconference connects them to the NASA experts featured in each new NASA SCI Files™ program, the latest research, exciting demonstrations, and more. This opportunity is offered as part of NASA LIVE™: Learning through Interactive Videoconferencing Experiences, a program produced by NASA's Center for Distance Learning. The class must have viewed the NASA SCI Files™ broadcast prior to participating. Participation is limited to the first four schools for each original event. Additional sessions can be scheduled upon your request. To register for an event and additional information, visit <http://live.larc.nasa.gov>. Don't miss this exciting opportunity to bring math, science, and technology to life!!

## 2003–2004 SCI Files™ Programs

### The Case of the Challenging Flight (R)\*

**Starts airing:** Wed., September 17, 2003  
11:00 a.m.–12 Noon EDT

The tree house detectives accept a challenge to compete in an "egg-tra-ordinary" airplane contest. The detectives design and build an airplane by using common household materials as they learn about the four basic components of flight: lift, thrust, drag, and weight.

**Mathematics Standards:** Measurement; Data Analysis and Probability; Problem Solving; Communication

**Science Standards:** Science and Inquiry; Physical Science; Science and Technology; Science in Personal and Social Perspectives

**Technology Standards:** Nature of Technology; Technology and Society; Design; Abilities for a Technological World; The Designed World

### The Case of the Wacky Water Cycle

**Starts airing:** Wed., October 15, 2003  
11:00 a.m.–12 Noon EDT

**NASA LIVE event:** November 12, 2003

The tree house detectives' efforts to raise money with a car wash dry up when a summer drought hits the city. With the help of Problem-Based Learning (PBL), the entire group learns all about the water cycle, the water table, global climates, and much more to get their project flowing again.

**Mathematics Standards:** Numbers and Operations; Measurement; Data Analysis and Probability; Problem Solving; Communication

**Science Standards:** Science and Inquiry; Earth and Space Science; Science and Technology; Science in Personal and Social Perspectives

**Technology Standards:** Nature of Technology; Technology and Society; Design; Abilities for a Technological World; The Designed World

### The Case of the "Wright" Invention (R)\*

**Starts airing:** Wed., November 19, 2003  
11:00 a.m.–12 Noon EST

Travel back in time with the tree house detectives to learn about the process of invention from two of the greatest inventors of all time, Orville and Wilbur Wright. The tree house detectives find that inventing is not as easy as it seems, and it really does take the "Wright" stuff to be a good inventor.

**Mathematics Standards:** Numbers and Operations; Measurement; Data Analysis and Probability; Problem Solving; Communication; Representation

**Science Standards:** Science and Inquiry; Physical Science; Science and Technology; Science in Personal and Social Perspectives; History and Nature of Science

**Technology Standards:** Nature of Technology; Technology and Society; Design; Abilities for a Technological World; The Designed World

(R) Indicates a repeat program from the 2002-2003 season.

## **The Case of the Disappearing Dirt**

**Starts airing:** Wed., December 10, 2003  
11:00 a.m.–12 Noon EST

**NASA LIVE event:** January 21, 2004

Summer fun suffers a setback when the tree house detectives discover that their favorite spot on the beach is shrinking. It is "match, set, point" as the detectives dig in and learn all about erosion, rocks, and natural preservation.

**Mathematics Standards:** Numbers and Operations; Measurement; Data Analysis and Probability; Problem Solving; Communication

**Science Standards:** Science and Inquiry; Physical Science; Earth and Space Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Abilities for a Technological World; The Designed World

## **The Case of the Galactic Vacation (R)\***

**Starts airing:** Wed., January 21, 2004  
11:00 a.m.–12 Noon EST

The tree house detectives go galactic with their latest project. Learn how long it will take to travel to Mars and how the Moon affects the Earth. Come see the largest radio telescope in the world and help look for intelligent life in the universe. Join the tree house detectives for an "out-of-this-world" vacation as they explore the future of space travel.

**Mathematics Standards:** Geometry; Measurement; Data Analysis and Probability; Problem Solving

**Science Standards:** Science and Inquiry; Life Science; Earth and Space Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Design; The Designed World

## **The Case of the Prize-Winning Plants**

**Starts airing:** Wed., February 18, 2004  
11:00 a.m.–12 Noon EST

**NASA LIVE event:** March 17, 2004

Everyone's green thumbs are put to the test as the tree house detectives attempt to grow award-winning plants for the upcoming fair. The tree house becomes a greenhouse as the detectives experiment with soil, plant and animal life cycles, and genetics to grow the perfect plant.

**Mathematics Standards:** Numbers and Operations; Measurement; Data Analysis and Probability; Problem Solving; Communication

**Science Standards:** Science and Inquiry; Physical Science; Earth and Space Science; Life Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Abilities for a Technological World; The Designed World

## **The Case of the Powerful Pulleys (R)\***

**Starts airing:** Wed., March 17, 2004  
11:00 a.m.–12 Noon EST

One of the tree house detectives has had an accident and cannot get into the tree house. Using Problem-Based Learning, the rest of the gang investigates the world of simple machines and physical science and "pulls" together to get everyone into the tree house.

**Mathematics Standards:** Numbers and Operations; Measurement; Algebra; Data Analysis and Probability; Problem Solving; Connections

**Science Standards:** Science and Inquiry; Physical Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Design; Abilities for a Technological World; The Designed World

**(R) Indicates a repeat program from the 2002-2003 season.**



## The Case of the Radical Ride

**Starts airing:** Wed., April 14, 2004

11:00 a.m.–12 Noon EDT

**NASA LIVE event:** May 19, 2004

The tree house detectives' latest project about alternative forms of transportation takes on new relevance when they get stuck in traffic. Join the crew as they learn about energy, composite materials, and technology in their quest for hassle-free traveling.

**Mathematics Standards:** Numbers and Operations; Measurement; Data Analysis and Probability; Problem Solving; Communication

**Science Standards:** Science and Inquiry; Physical Science; Earth and Space Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Design; Abilities for a Technological World; The Designed World

## The Case of the Phenomenal Weather (R)\*

**Starts airing:** Wed., May 19, 2004

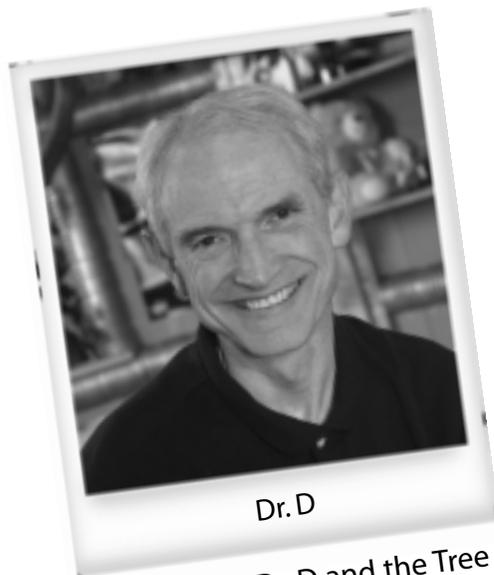
11:00 a.m.–12 Noon EDT

Join the tree house detectives as they plan a trip to the Caribbean and encounter problems trying to predict the weather. In this case, the tree house detectives will learn about violent storms, such as hurricanes and tornadoes, weather fronts, global wind patterns, and climates. While solving the case, they will discover that predicting the weather is not predictable at all!

**Mathematics Standards:** Numbers and Operations; Algebra; Geometry; Measurement; Data Analysis and Probability; Problem Solving; Representation

**Science Standards:** Science and Inquiry; Physical Science; Life Science; Earth and Space Science; Science and Technology

**Technology Standards:** Nature of Technology; Technology and Society; Abilities for a Technological World; The Designed World



Dr. D

Come help Dr. D and the Tree House Detectives solve their next exciting case!



The Tree House Detectives

**(R) Indicates a repeat program from the 2002-2003 season.**

# NASA Resources for Educators

## NASA's Home Page

<http://www.nasa.gov> serves as the portal to learning more about NASA as an agency. NASA is committed to inspiring the next generation of explorers as only NASA can. This site is dedicated to offering educators essential NASA-related educational resources and information. From learning and Internet resources to multimedia resources, the NASA portal is the gateway to NASA education.

## NASA'S EDUCATION HOME PAGE

<http://education.nasa.gov> serves as the cyber gateway to information regarding educational programs and services offered by NASA for educators and students across the United States and provides specific details and points of contact for all of NASA's educational efforts and Field Center Offices. Those using the site will have access to a comprehensive overview of NASA's educational programs and services, as well as home pages offered by NASA's four areas of research and development.

## NASA LANGLEY RESEARCH CENTER, OFFICE OF EDUCATION

<http://edu.larc.nasa.gov> offers a wide variety of opportunities for educators at all levels of instruction. The Office of Education seeks to enhance the teaching of mathematics, science, and technology through its distance learning programs, all of which are described on the web site. Educators can also search NASA educational resources for the classroom, including activities, curriculum-enhancing projects, and equipment. From this site, you can link to our NASA SCI Files™ web site.

## NASA SPACELINK

<http://spacelink.nasa.gov> is one of NASA's electronic resources that is specifically developed for use by the education community. This comprehensive electronic library offers teacher guides, wall sheets, listings of videos, computer software, and other materials that have been developed to meet national education standards. Educators can search specific curriculum materials by grade level and subject matter. Current and historical information related to NASA's aeronautic and space research can be found on Spacelink. Links to NASA Educator Resource Centers (ERCs), the

Central Operations of Resources for Educators (CORE), news releases, current state reports on agency projects and events, and television broadcast schedules for NASA Television are also provided.

## KNOW IT ALL.org

[http://www.knowitall.org/nasa/html\\_wm/scifiles.html](http://www.knowitall.org/nasa/html_wm/scifiles.html) is filled with fun activities and resources for both students and educators. Students can take virtual field trips to a forest or tour U.S. parks and nature preserves where they can study the geography of a region, along with the plants and animals that live there. The web site's virtual community for kids has interactive fun, educational games, and much more. Visit Knowitall.org to view the NASA Science Files™ programs via streaming video and download the educator guides.

## NASAEXPLORES

<http://NASAexplores.com/> provides science, mathematics, and technology lessons that are published weekly. NASAexplores gives teachers timely educational content based on current research, development, and related events. The web site provides an e-mail subscriber list service to notify subscribers of weekly content. Teachers sign up to receive e-mail notices linking them directly to the web site where the lessons, along with related resources and materials, are posted. Teachers without e-mail can also access the lessons by visiting the NASAexplores web site.

## NASA CORE, CENTRAL OPERATION OF RESOURCES FOR EDUCATORS

<http://core.nasa.gov> is a worldwide distribution center for NASA multimedia educational materials. Educational materials include videotape programs, slide sets, and computer software. For a minimal fee, NASA CORE will provide educators with materials through its mail order service. A free NASA CORE catalog is available.

NASA CORE  
15181 State Route 58  
South, Oberlin, OH 44074,  
phone: (440) 775-1400, fax: (440) 775-1460,  
E-mail: [nasaco@leeca.org](mailto:nasaco@leeca.org)



The NASA Educator Resource Center Network (ERCN) is composed of Educator Resource Centers (ERCs) located on or near all NASA field centers, colleges, museums, or other nonprofit organizations. These centers provide educators with inservice and preservice training, demonstrations, and access to NASA instructional products.

For a list of ERCs in your state, visit the NASA Educator Resource Center Network, <http://education.nasa.gov/ercn>. Educators may also contact one of the ERCs at the following NASA Centers.

AK, Northern CA (southern-most counties of Inyo, Kings, Monterey, Tulare), HI, ID, MT, NV, OR, UT, WA, WY  
**NASA Ames Educator Resource Center**  
Mail Stop 253-2  
Moffett Field, CA 94035-1000  
(650) 604-3574  
<http://amesnews.arc.nasa.gov/erc/erchome.html>

AZ, Southern CA (northern-most counties of Kern, San Bernadino, San Luis Obispo)  
**NASA Dryden Educator Resource Center**  
45108 North Third Street East  
Lancaster, CA 93535  
(661) 948-7347  
<http://www.dfrc.nasa.gov/trc/ERC>

CA  
**NASA JPL Educator Resource Center**  
Village at Indian Hills Mall  
1460 East Holt Blvd., Suite 20  
Pomona, CA 91767  
(909) 397-4420  
<http://eis.jpl.nasa.gov/eao/>

CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT  
**NASA Goddard Educator Resource Center**  
Mail Code 130.3  
Greenbelt, MD 20771  
(301) 286-8570  
<http://pao.gsfc.nasa.gov/gsfcd/educ/trl/welcome.html>

VA's and MD's Eastern Shore  
**NASA Wallops Educator Resource Center**  
Education Complex - Visitor Center  
Building J-17  
Wallops Island, VA 23337  
(757) 824-2298  
<http://www.wff.nasa.gov/pages/visitor.html>

FL, GA, Puerto Rico, Virgin Islands  
**NASA Kennedy Educator Resource Center**  
Mail Code ERC  
J.F. Kennedy Space Center, FL 32899  
(321) 867-4090  
<http://www-pao.ksc.nasa.gov/kscpao/educate/edu.htm>

CO, KS, NE, NM, ND, OK, SD, TX  
**NASA Johnson Space Center**  
1601 NASA Road One  
Houston, TX 77058  
(281) 244-2129  
[http://www.spacecenter.org/educator\\_resource.html](http://www.spacecenter.org/educator_resource.html)

KY, NC, SC, VA, WV  
**NASA Langley Educator Resource Center**  
Virginia Air and Space Center  
600 Settlers Landing Road  
Hampton, VA 23669  
(757) 727-0900, ext. 757  
<http://www.vasc.org/erc>

IL, IN, MI, MN, OH, WI  
**NASA Glenn Educator Resource Center**  
21000 Brookpark Road, MS 8-1  
Cleveland, OH 44135  
(216) 433-2017  
<http://www.grc.nasa.gov/WWW/PAO/html/edteachr.htm>

AL, AR, IA, LA, MO, TN  
**NASA Marshall Educator Resource Center**  
U.S. Space and Rocket Center  
One Tranquility Base  
Huntsville, AL 35807  
(256) 544-5812  
<http://erc.msfc.nasa.gov>

MS  
**NASA Stennis Educator Resource Center**  
Building 1200  
Stennis Space Center, MS 39529  
(228) 688-3338  
<http://education.ssc.nasa.gov/htmls/trc/trc.htm>

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