Program Ideas and Tips

General Tips

- Contact the outreach person at your local PBS affiliate to help plan and promote your events.
- Create posters and fliers announcing your event or program. Distribute them through venues such as local schools, school libraries, clubs, museums, science centers, community centers, bookstores, and other library branches.
- Send event information to media outlets such as newspapers, science center and club newsletters, and local radio and television stations. Include an abbreviated and extended description of the event. Consider supplying the information to appropriate community and school Web sites as well.

Programs and Events

Adults

- **Offer a short class or workshop on bookmaking.** Contact artists who make books in your area and organize a workshop on the art of bookmaking. Talk about how Archimedes' manuscript was "recycled" and then turned into a palimpsest.
- **Invite a guest lecturer to deliver a topical lecture or slide show.** Topics to consider include historical mathematicians such as Archimedes, Euclid, and Newton; the history of the book; restoration of Archimedes' Palimpsest; ancient Greek and Roman inventions; Sicily; and the influence of wars on the acceleration of scientific research.
- **Organize a topical book or panel discussion.** Select an adult-level book on Archimedes, Sicily, or mathematics to use as the focus for a panel discussion.
- **Show videos about famous mathematicians.** Present "Infinite Secrets" or another video about a famous mathematician and conduct a related discussion.

Young Adults

- **Offer a workshop.** Work with local artisans to organize a workshop for visitors on the art of making three-dimensional geometric solids from paper.
- **Hold a science fair workshop.** Collaborate with a science teacher to hold a workshop on planning and researching a science fair project about buoyancy, mechanics, pi, or other Archimedes-related topic.
- **Organize a young adult discussion group.** Select a book or video from the kit's Bibliography and organize teens to discuss their ideas, opinions, and reactions to what they have read or watched.
- **Conduct a math- or science-based activity session.** Select one or more activities from the Archimedes Handouts pages. Create and distribute a bibliography that lists additional activity resources.

Children

- **Hold a bookmaking workshop.** Teach children how to make a book from cardboard, cloth, and paper. Find instructions in how-to books or on the Web. Copy and distribute the display sheet on the History of the Book.
- **Play a game.** Play a game of geometric "I Spy." Have children locate shapes—such as circles,squares, triangles,cubes, and spheres—in and around the library.
- **Have kids practice writing in "invisible ink."** Have kids dip cotton swabs into lemon juice and write messages. Once the juice has dried, tape the papers to a window in direct sunlight.The words will turn brown. Tell the children that scientists use ultraviolet light to see hidden writing in Archimedes' Palimpsest.
- **Conduct an origami workshop.** Explore shapes through paper-folding activities. Copy and distribute the display sheet on Shapes in Nature.
- **Hold a book reading and craft event.** After presenting a book on Archimedes or another ancient Greek mathematician, have children illustrate the story on "scrolls" made of paper wrapped around wooden dowels.
- **Organize a family program.** Invite families to take part in a story time on shapes or another math-related theme appropriate for pre-schoolers. Select an age-appropriate book from the kit's Bibliography to present during your regularly scheduled story time.

©2003 WGBH Educational Foundation. All rights reserved. Permission is granted for reproduction of this printed material for educational use only.

Contest Incentives

Contact local retailers—such as hobby and craft stores, toy stores, and bookstores—for possible incentive donations for contests, games, and treasure hunts. Incentives might include tickets to a local museum or science center; books or videos on Archimedes or related topics; math games or manipulatives; construction toys; or book-making supplies.

Library Resource Activities

Adults

- **Call numbers or keywords list.** Prepare a list of call numbers or keyword search terms related to Archimedes and other mathematicians, geometry, calculus, the history of mathematics, the history of the book, or other related topics. Provide copies of the list for patron use.
- **Library resource map.** Provide visitors with a map of the library showing where different types of mathematics and science resources are located.
- **Rare book room tour.** If your library has a rare book or manuscript room, arrange a guided tour for patrons.

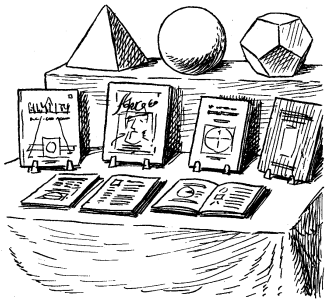
Young Adults

- **Invention timeline treasure hunt.** Provide teens with a list of inventions and ask them to use library resources to determine the inventor and the date when each invention was created.
- **Famous mathematician poster.** Ask teens to research a notable mathematician and discover his or her contributions to modern mathematics. Then have teens design posters that you can display in the library.

Children

- **"Who Am I?" contest.** Create a fact sheet about Archimedes (without identifying him).Then have children use library resources to figure out who is being described.
- **Math prefix hunt.** Organize children into teams and give each team a list of the mathematical prefixes used to describe polygons, such as tri-, penta-, and hexa-. Ask them to use library resources to determine the meaning of each prefix.
- **Resource posters.** Have children help you create posters for display that can be used to identify the location of resources related to Archimedes, mathematics, and inventions in the children's area.
- **Favorite books.** Ask children to help you create a list of their favorite books. Review the books with the children to see what kind of math concepts they can use with the book, such as estimating sizes or counting numbers of objects that repeat throughout a book. Distribute the suggested reading list and some of the math concepts used.

©2003 WGBH Educational Foundation. All rights reserved. Permission is granted for reproduction of this printed material for educational use only.



Display Tips

- When creating display titles, use a few short words in large type size and alliterative phrases to grab patron's attention (i.e., "Archimedes' Achievements" or "Marvelous Mathematicians").
- Use fabric instead of paper for bulletin board backgrounds—it lasts longer and is easier to reuse.
- Place one or more small boxes or stands on a table to create risers. Then cover tables with cloth or plastic tablecloths. Highlight one book or model on each riser to create a table display.
- To create a poster-size picture for display, photocopy an image onto a transparency, then use an overhead projector to magnify it onto a large piece of paper taped to a wall. Trace the outline of the image and then color it in to make the poster.

Use copies of the Bibliography, color display sheets, and activities provided in this kit to enhance your displays.

Library Display Ideas

Archimedes

- **Archimedes' books and videos.** Display a picture of Archimedes along with a timeline, selected books and videos, and one or more of the Archimedes Handouts.
- **Archimedes' discoveries.** Display books and videos about some of Archimedes' famous discoveries, along with an illustration related to one of his inventions or discoveries, such as an Archimedes' Screw.

Famous Mathematicians

- **Selected famous mathematicians.** Select titles and resources based on a theme, such as women mathematicians, famous Greek mathematicians, or mathematicians who contributed to the fields of geometry or calculus.
- **Historical mathematical documents.** Profile several key historical mathematical documents and books, such as Archimedes' Palimpsest and Archimedes' *Complete Works*, Euclid's *Elements*, and Ptolemy's *Almagest*. Make enlargements of pages in their original language for a wall display.

Geometry and Calculus

- **Geometric solids.** Suspend paper geometric solids—such as cubes, octahedrons, and dodecahedrons—from the ceiling using fishing line. Or create a table display that contains geometric solids for patrons to examine.
- **Everyday geometry.** Create a wall or table display that provides illustrations of geometric shapes—such as circles, rectangles, hexagons, and octagons—along with everyday examples of those shapes (such as boxes and other containers, signs, CDs, wheels, and books).
- **Pi Day.** Celebrate Pi Day (March 14) with a display highlighting this famous number. Include a banner showing pi to as many decimal places as you wish.

Ancient Machines and Inventions

- **Science fair projects.** Contact science curriculum coordinators in local school systems and homeschool groups for student science fair projects.
- **Simple machines.** Create a table display that provides illustrations or samples of the five different simple machines—the lever, the pulley, the inclined plane, the wedge, and the wheel and axle.
- **Ancient war machines.** Display pictures of ancient war machines developed by Archimedes and other inventors, along with a timeline and selected books and videos.

History of Books and Bookmaking

- **Handmade books.** Contact local artists, bookstores, and craft galleries for samples of handmade books. Include diagrams or samples of the materials used to create and bind books.
- **Evolution of the book.** Create a timeline showing the evolution of the book from the first clay tablet to modern-day electronic books.

©2003 WGBH Educational Foundation. All rights reserved. Permission is granted for reproduction of this printed material for educational use only.

Online Science Experts

Allexperts Math
www.allexperts.com/browse.asp?Meta=8
Provides experts in various aspects of mathematics, from basic math to number theory. Experts range from amateur mathematicians to professional math educators. Each expert is profiled and rated by site visitors who have sent in questions.

Community Learning Network: Ask an Expert Sources
www.cln.org/int_expert.html
Catalogues experts in K–12 curriculum-related topics, including mathematics.

The Virtual Reference Desk: AskA+ Locator:Mathematics
www.vrd.org/locator/subject.shtml#math
Presents information on the subjects covered, audience, and answer policy for more than a dozen experts in mathematics.

Resources for Programs and Events

Find these links online at:
www.pbs.org/nova/archimedes/lrk.html

Affiliate and Outreach Programs

- **National Council of Teachers of Mathematics Affiliates**
  www.nctm.org/affiliates/
  Find contacts to help promote programs, bring together audiences, and provide partnership opportunities.
- **Regional and Worldwide Homeschooling**
  www.gomilpitas.com/homeschooling/regional/Region.htm
  Presents information on such topics as homeschooling associations, events, resources, and support groups for states in six U.S. regions.
- **PBS Local Station Finder**
  www.pbs.org/stationfinder/index.html
  Provides a way to find and contact your local PBS station.

Museums and Science Centers

- **The Virtual Library: Museums in the U.S.A.: Science**
  www.museumca.org/usa/index.html
  Lists more than 100 U.S. museums and science centers by name, state, and/or type, and provides direct links to museum home pages.
- **Smithsonian Institution**
  www.si.edu/
  Presents background information and resources on historical events and discoveries, art and culture, and famous mathematicians and inventors. Also provides lesson plans and a media catalog.

Specialized Guilds and Organizations

- **Academy of Applied Science**
  www.aas-world.org/
  Offers educational enrichment programs for students and sponsors the Young Inventors Program. Includes contact information for U.S. affiliates.
- **Family Math**
  www.lhs.berkeley.edu/equals/Fmnetwork.htm
  Provides math activities that parents and children can do together.
- **Minsky Online: The Center for Book Arts: Conservation Online**
  www.minsky.com/cba.htm
  Supplies links to individuals and groups involved with the conservation of library, archive, and museum materials. Also contains articles about book and document conservation.
- **National Storytelling Directory**
  www.storynet.org/newdir/index.htm
  Provides information about the storytelling community and has a searchable database of storytellers.

©2003 WGBH Educational Foundation. All rights reserved. Permission is granted for reproduction of this printed material for educational use only.