



# Program Ideas and Tips

## General Tips

- Contact the educational outreach person at your local PBS affiliate to help plan and promote your events.
- Offer materials on your library Web site. Link to online downloadable versions of the handouts included in this kit. Augment the resources with a calendar of events and programs or related books.
- Create and distribute posters and fliers announcing your event or program.
- Send event information to media outlets, such as newspapers, science center and club newsletters, and local radio and television stations. Supply the information to local community, city, and school Web sites.

## Programs and Events

### Adults

- ✦ **Invite a guest lecturer to deliver a topical lecture or slide show.** Topics to consider include historical scientists, such as Isaac Newton, Galileo Galilei, and Johannes Kepler; science in the seventeenth and eighteenth centuries; alchemy and allegory; everyday physics; and the impact of religion on scientific research and inventions. Contact a local college or university science, mathematics, or history department for presenters.
- ✦ **Show videos about famous scientists and/or mathematicians.** Present “Newton’s Dark Secrets” or another video about a notable scientist or mathematician, and have a facilitator lead a related discussion after watching. (Make sure that videos are cleared for public performance rights.)
- ✦ **Offer a short class or workshop.** Work with a representative from a local amateur astronomy club or a college or university astronomy department to host a class or workshop about planetary motion.

### Young Adults

- ✦ **Invite a guest speaker to talk about Newton’s contributions to physics, astronomy, and/or math.** Contact local high schools, colleges, and physics or astronomy organizations for possible speakers. Distribute copies of the “Who Was Sir Isaac Newton?” handout.
- ✦ **Host a young astronomers club.** Work with local science teachers or astronomy organizations to host a young astronomers club meeting. Use the “Who Am I?” activity with participants.
- ✦ **Hold a science essay contest.** Pose the question “How has science influenced your life?” Work with a local science teacher to develop contest guidelines and judging criteria. Award prizes. Display the essays in the library.
- ✦ **Plan a quiz show.** Create a quiz-show format using questions drawn from books in the bibliography. Invite young adults from science clubs and area schools. Award prizes.
- ✦ **Conduct a science-based activity session.** Use the “Marble on the Move” and “Who Am I?” activities to spark interest in Newton and present-day scientists. Create and distribute a bibliography that lists additional activity resources.

### Children

- ✦ **Make a rainbow.** Do the “Catch a Rainbow” activity with children, which demonstrates that white light can be separated into its component colors.
- ✦ **Hold a book reading and craft event.** After presenting a book on Newton or an early astronomer such as Edmund Halley, have children create models of the planets and/or drawings showing how the planets move around the sun.
- ✦ **Organize a book reading or video presentation about a famous scientist.** Present an age-appropriate book or video from the bibliography about Newton or another scientist.
- ✦ **Conduct a science-based activity session.** Use “Newton’s Discovery,” “Parachute Play,” or “Light’s Mysteries,” to introduce children to some of Newton’s science concepts. Create and distribute a bibliography that lists additional activity resources. Recruit high school students or science club members to help conduct the activities.



## Contest Incentives

Think about offering incentives for contests and other events. Some incentives might be tickets to a local museum or science center, books or videos on Newton or related topics, math games or manipulatives, construction toys, or science project supplies. Contact local retailers—such as hobby and craft stores, toy stores, and bookstores—for possible donations.

## Activities Using Library Resources

These activities are designed to encourage the use of library resources.

### Adults

- ✦ **Original documents.** Plan a discussion around original scientific documents and where patrons might locate these materials. Share the resources that your library has to help find these materials.
- ✦ **Rare book room tour.** If your library has a rare book or manuscript room that contains mathematical or scientific texts, arrange a guided tour for patrons.
- ✦ **Bookmarks.** Print bookmarks with resources for historical scientists or science themes related to Newton's discoveries. Tailor the bookmarks for different age levels.

### Young Adults

- ✦ **Science trivia night.** Plan a night that focuses on a particular scientist's work or science subject. Invite a guest who is knowledgeable about that science topic to host the event, and recruit one or two young adults to assist.
- ✦ **Scientific discovery time line.** Provide teens with a list of scientific discoveries and ask them to use library resources to find who made each discovery and when each was made. Distribute the "Who Was Sir Isaac Newton?" handout and have teens compare their time lines to the dates when Newton made his discoveries.
- ✦ **Recommended resources lists.** Have young adults create lists of recommended resources about Newton and related topics for their peers. Display the lists during a presentation or event related to Newton.
- ✦ **Call numbers or keywords list.** Prepare a list of call numbers or keyword search terms related to Newton, other scientists and mathematicians, alchemy, calculus, the history of science, physics, optics, astronomy, or other related topics. Then ask young adults to research the scientists listed on the "Who Am I?" activity and correctly name the mystery scientists featured on the handout.

### Children

- ✦ **Science word hunt.** Give children a list of science terms commonly used in physics, optics, and/or astronomy. Ask them to use library resources to determine the meaning of each term.
- ✦ **Resource posters or bookmarks.** Have children help you create posters or bookmarks that can be used to identify the location of resources in the children's area related to Newton, physics, and math.
- ✦ **"Who Am I?" game.** List three scientists, including Newton, at the top of a sheet of paper. Then list five or six facts about each scientist elsewhere on the page. Have children use library resources to match the facts with the correct scientist.
- ✦ **Science question contest.** Have children use library resources to answer a set of developmentally appropriate science questions. Work with a local science teacher or school librarian to develop questions that can tie into school science curriculum.



## Display Tips

- When creating display titles, use a few short words in large type size and alliterative phrases to grab patrons' attention (i.e., "Newton's Notable Achievements" or "Marvelous Mathematicians").
- Use fabric instead of paper for bulletin board backgrounds—it lasts longer and is easy 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 display item on each riser to create an appealing table display.
- To create a poster-size picture for display, photocopy a copyright-free 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.

## Library Display Ideas

### Newton

- \* **Newton books and videos.** Display one or more pictures of Newton along with a time line, selected books and videos (see bibliography for suggestions), and one or more of the activity handouts.
- \* **Newton's discoveries.** Highlight books and videos about some of Newton's famous discoveries, along with posters illustrating his laws of motion. Have one or more of the activity handouts available for distribution.

### Calculus, Physics, and Astronomy

- \* **Science activities.** Showcase one of the science activities from the activity handouts. Have the chosen handout available for distribution.
- \* **Light and color.** Create a table display that provides illustrations or samples of prisms, lenses, color filters, and the electromagnetic spectrum. Have copies of the "Light's Mysteries" activity handout available for distribution.
- \* **Orbits of the planets.** If possible, display an orrery (a mechanical model of the solar system) or diagrams of early devices that model the relative positions and motions of the planets alongside selected books and videos about astronomy.
- \* **The physics of sports, amusement parks, and/or space flight.** Highlight applications of physics by displaying photographs, posters, and models of real-world items, along with selected books and videos (see the bibliography for suggestions). Have copies of the "Marble on the Move" activity handout available for distribution.
- \* **School science fair projects.** Display selected science fair projects created by local students. Contact science curriculum coordinators in local school systems for referrals. Also contact local homeschool groups regarding science project development.

### History of Science

- \* **Famous scientists and mathematicians.** Select titles and resources based on a theme, such as women scientists, famous European scientists, or mathematicians who contributed to the field of calculus (see bibliography for suggestions). Display drawings or photographs of the highlighted people. Consider featuring scientists who are known in your city, region, or state.
- \* **Historical science and mathematical documents.** Profile several key historical scientific or mathematical books, such as Newton's *Principia*, Euclid's *Elements*, and Kepler's *New Astronomy*.
- \* **Evolution of scientific thought.** Display books and videos that highlight the evolution of key ideas in science.

### Alchemy

- \* **Alchemists' laboratories.** Create a display highlighting the type of instruments commonly used in alchemy. Include enlarged illustrations of early equipment along with modern-day beakers, mortars and pestles, and crucibles. Contact local science and/or history museums for possible display items.

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



## Resources for Programs and Events

The following is a listing of selected Web resources to help you locate experts, partners, target audiences, and materials for your events, programs, and activities. You can find these links online at [www.pbs.org/nova/newton/lrk.html](http://www.pbs.org/nova/newton/lrk.html)

### Schools, Colleges, and Universities

★ **American Association of Community Colleges**

[www.aacc.nche.edu](http://www.aacc.nche.edu)

Furnishes state-by-state listings of local community colleges (choose "Community College Finder" at the top of the page). Contact information and links to college home pages supplied. Most linked sites include listings for academic departments and faculty.

★ **U.S. Universities by State**

[www.utexas.edu/world/univ/state](http://www.utexas.edu/world/univ/state)

Provides listing of colleges and universities by state with links to home pages of each institution. Most organizations have department listings or public affairs offices that can connect you with experts in a field of interest.

★ **Yahoo! Directory: K-12 Schools**

[dir.yahoo.com/Education/K\\_12/Schools](http://dir.yahoo.com/Education/K_12/Schools)

Provides a listing of elementary, middle, and high schools with links to each school's home page. Regional listings provide state breakdowns by cities or counties. Many linked sites have staff listings. (Not all schools are listed.)

### Museums, Science Centers, and Planetaria

★ **The Virtual Library: Museums in the USA**

[www.museumca.org/usa/index.html](http://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. Allows searches by keyword.

★ **Smithsonian Institute**

[www.si.edu](http://www.si.edu)

Provides background information and resources on historical events and discoveries, art and culture, and famous mathematicians and inventors. Provides lesson plans and a media catalog.

★ **The Astronomical Society of the Pacific: Planetaria**

[www.astro.society.org/resources/linkplanetaria.html](http://www.astro.society.org/resources/linkplanetaria.html)

Furnishes links to planetarium and observatory home pages by state.

### PBS Local Station Finder

[www.pbs.org/stationfinder/index.html](http://www.pbs.org/stationfinder/index.html)

Type in your Zip code or choose your state to find a listing of local stations and a link for contact information.