

Special points of interest:

- In 2006, Pluto was demoted from the status of a planet to that of a “dwarf planet”. There are now, according to this switch, only eight true planets circling Sol, our sun.
- Extremophilic microbes exist on Earth which can withstand boiling temperatures, sub-zero environs, or areas where radiation levels match nuclear reactors.
- In January 2009, scientists opined that plumes of methane in the Martian atmosphere might suggest the presence of microbes. They theorize that these living microbes, if present, would produce the gas in the same process as some on Earth do.
- The ultimate goal of environmental science is the conservation and protection of the biosphere: air, land, and water.
- The number zero was developed independently by the ancient Southeast Asian Indians and by the pre-Columbian Mayans.
- Forestry experts use annual tree ring counts to find the age of tree stands and their growth rate.



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# Science, Mathematics and Technology Resources

Plainfield Public Library Pathfinder

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## Overview Commentary

Are you a student seeking the atomic number, atomic weight, and characteristics of Neon? Are you a harried parent needing quick access to a circulating book on arachnids for your nine-year-old’s science book report? Perhaps you are researching the latest initiatives in green technology that are being devised to lessen humanity’s impact on the environment? What are binary numbers? Perhaps you just want the answer to that nagging question that came out of the blue, “Who in the world invented zero?”

**The Plainfield Public Library** can help you find the answers to your science, mathematics, and technology questions using a variety of media. We have holdings in the **Reference Department** and also in the **Children’s Room** which can help you with matters as diverse as learning how to go eco-friendly to how to help your child find a science fair item on magnetism or ecology.

Whatever your needs, simply e-mail us at [ref@plfdpl.info](mailto:ref@plfdpl.info), contact the Reference Department at 908-757-111 ext. 112, the Children’s Room at 908-757-1111 ext. 128, or visit us to take home what you seek.

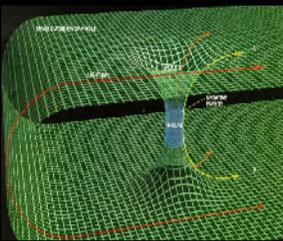
## Happy Discovering!



*The two small red spheres in this image are known as exoplanets, planets circling distant stars. Since the 1990s, astronomers have developed at least two techniques for spotting these small bodies as they orbit their sun. One technique involves measuring gravity effects, the other the luminosity of a star as a planet passes before it.*

## Some Highlighted Resources

- *A Dictionary of Science*, published by Oxford University Press, call # R 503 DIC 2005
- *The Ultimate Visual Dictionary of Science*, published by DK Publishing, Inc., call # R 503 ULT
- *Hubble: The Mirror on the Universe*, by Robin Kerrod, call # 522.291 KER
- *The Nothing That Is: A Natural History of Zero*, by Robert Kaplan, call # 511.2 KAP
- *The Way Things Work*, by David Macaulay, call # JR 600 MAC
- *McGraw-Hill Concise Encyclopedia of Science & Technology*, published by McGraw-Hill, call # R 503 MCG 2005



**Wormholes** exist in the math used in the **Theory of General Relativity**. If we assume the theory is correct, there may be wormholes. But science lacks a clear understanding of how they would be created, and there has not been a single observation of one in the known Universe, thus far. The image above is a theoretical rendering of one. According to the **Astrophysics Science Division of NASA**, they could resemble 'hurricanes'.

**"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."**



**Isaac Asimov**



**Solar eclipses** occur when the Moon orbits the Earth and in so doing, passes in front of the Sun. Because the Moon is much smaller than the Sun, we see the light of the Sun around the edge of the Moon (this ring is called an **annulus**).

### In-house Books

- *The Black Hole War: My Battle with Stephen Hawking to Make the World Safe for Quantum Mechanics*, by **Leonard Susskind**, call # 530.12 SUS
- *Silent Spring*, by **Rachel Carson**, call # 574.5 C23
- *Many Worlds in One: The Search for Other Universes*, by **Alexander Vilenkin**, call # 523.1 VIL
- *Alex & Me: How a Scientist and a Parrot Discovered a Hidden World of Animal Intelligence--and Formed a Deep Bond in the Process*, by **Irene M. Pepperberg**, call # 636.686 PEP
- *Flesh and Machines: How Robots Will Change Us*, by **Rodney Allen Brooks**, call # 629.892 BRO

### Articles

- *Earth Day: 'Doing the Little Things Can Make a Big Difference'*. **Bennett, Kevin**. *American News (Aberdeen, SD)*; 04/18/2010.
- *Martian Life May Have Bubbled Up in Muddy Squirts*. **Shiga, David**. *New Scientist*; 3/21/2009, Vol. 201 Issue 2700, p11-11, 1p.
- *Fearful Symmetry: Mathematicians Triumph Over 248 Dimensions*. **Stone, Alex**. *Discover*; Jun2007 Special Issue, Vol. 28, p18-18, 1/3p, 1 Color Photograph.
- *The Forgotten Era of Brain Chips*. **Horgan, John**. *Scientific American*; Oct2005, Vol. 293 Issue 4, p66-73, 8p, 4 Color Photographs, 9 Black and White Photographs.
- *Electronics and Robotics: The Do-Anything Robot*. **Mone, Gregory**. *Scientific American*; Dec2009, Vol. 301 Issue 6, p59-59, 2/5p.

### Online Resources

- [www.billnye.com](http://www.billnye.com)
- [www.nasa.gov](http://www.nasa.gov)
- <http://public.web.cern.ch/public>
- <http://web.mit.edu>
- [www.princeton.edu/main/news/science](http://www.princeton.edu/main/news/science)
- [www.caltech.edu](http://www.caltech.edu)
- [www.nationalacademies.org](http://www.nationalacademies.org)
- [www.seti.org/Page.aspx?pid=1366](http://www.seti.org/Page.aspx?pid=1366)
- [www.nsf.gov](http://www.nsf.gov)
- [www.cdc.gov/CDCForYou/researchers.html](http://www.cdc.gov/CDCForYou/researchers.html)
- [www.maa.org/](http://www.maa.org/)
- [www.ams.org/home/page](http://www.ams.org/home/page)
- [www.chemcool.com](http://www.chemcool.com)
- [www.math.com](http://www.math.com)
- [http://biology.about.com/lr/biology\\_homework\\_help/8263/1](http://biology.about.com/lr/biology_homework_help/8263/1)
- [www.aibs.org/home/index.html](http://www.aibs.org/home/index.html)
- [www.wired.com](http://www.wired.com)
- [www.noaa.gov](http://www.noaa.gov)
- [www.aps.org](http://www.aps.org)
- <http://cybersleuth-kids.com>
- [www.asc-cybernetics.org/index.htm](http://www.asc-cybernetics.org/index.htm)
- [www.popsci.com](http://www.popsci.com)