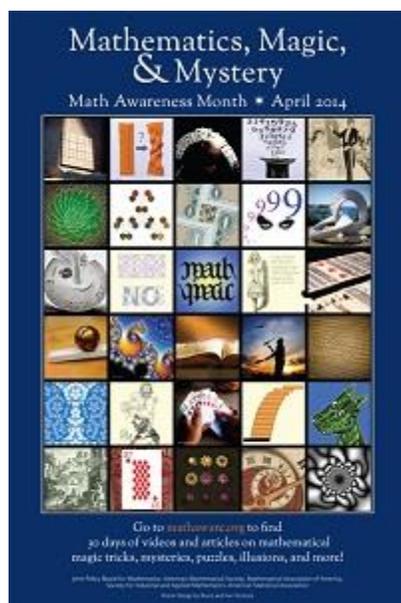


2014 Math Awareness Month

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Activities for Math Awareness Month for April 2014: *Mathematics, Magic, and Mystery.*

From magic squares and Mobius bands to magical card tricks and illusions, mysterious phenomena with elegant "Aha!" explanations have permeated mathematics for centuries. Such brain-teasing challenges promote creative and rational thinking, attract a wide range of people to the subject, and often inspire serious mathematical research.

The theme of Mathematics Awareness Month 2014 echoes the title of a 1956 book by renowned math popularizer Martin Gardner, whose extensive writings introduced the public to hexaflexagons, polyominoes, John Conway's "Game of Life," Penrose tiles, the Mandelbrot set, and much more. For more than half a century, Gardner inspired enthusiasts of all ages to engage deeply with mathematics, and many of his readers chose to pursue it as a career. The year 2014 marks the centennial of Gardner's birth.

The [Mathematics Awareness month website](#) will feature 30 magical and mysterious topics - a new one will be unveiled each day in April 2014. Contributors will include professional mathematicians and magicians of the highest caliber. Each topic will be introduced by a short video and will include supporting materials at various levels of mathematical sophistication. [Poster credits](#), MAM is sponsored by the *Joint Policy Board for Mathematics*

Lessons

[Shape Hunt](#)

Science NetLinks | Lesson | K-2

In this investigation, students look for examples of patterns and shapes in the natural and designed world.

[Searching for Symmetry and Scale](#)

Smithsonian's History Explorer | Lesson | K-4

Take a close look at two architectural drawings to learn about symmetry and scale. This resource is based on the book *Julia Morgan Builds a Castle*, about Julia Morgan, one of America's first female architects.

[Magical Magic Squares: Constructing Simple Magic Squares in Odd-Numbered Square Arrays](#)

Illustrations | Lesson | K-5

In this lesson, students will use operations to discover patterns with integers in magic squares. They will apply what they have learned when building their own magic squares.

[Mysteries of the Unseen World Education](#)

National Geographic Education | Collection | 1-12+

Use this collection of videos, activities, microscopic images, articles, and other resources to help students describe the relationship between light and visibility, examine the properties of objects at the nanoscale, explore advances in nanoscience and nanotechnology, and journey into the unseen world around us.

[Petals Around the Rose](#)

Illustrations | Lesson | 3-5

A puzzle involving five dice and a non-standard pattern is used to promote problem-solving skills.

[Shapes at Work](#)

Science NetLinks | Lesson | 3-5

Students look for shapes in both the natural and designed world, investigate the ways in which shapes can be used, and design and build structures using appropriate shapes.

[Slush Rush](#)

Science NetLinks | Lesson/Interactive | 3-5

This lesson introduces students to how computer models can help people make decisions or learn about real-world events.

[Power Up!](#)

Science NetLinks | Activity | 3-8

In this lesson, students compare and contrast different energy sources and the trade-offs of using them.

[The Magic of Three: Techniques for the Writer's Craft](#)

ReadWriteThink | Lesson | 4-8

In this lesson, students learn to use tricolons - a writer's technique of putting words and phrases into groups of threes - to add rhythm and power to their writing.

[Are They Possible?](#)

Illustrations | Lesson | 6-8

Students examine some isometric drawings that seem to be impossible and investigate one way Escher used to create these "impossible" figures.

[Finding Satisfactory Solutions](#)

Science NetLinks | Lesson | 6-8

In this lesson, students explore the creative aspects of problem-solving and practice creative problem-solving strategies in the context of a story problem.

[Finding the Surface Area of a Leaf](#)

Science NetLinks | Lesson | 6-8

Students will explore the importance of math modeling and precision through a leaf surface area investigation.

[Magic Squares](#)

Illustrations | Lesson | 6-8

This lesson explores magic squares from both a historical and mathematical perspective. The mathematical analysis leads into symbolic algebraic representation of the patterns.

[The Fibonacci Sequence](#)

Illustrations | Lesson | 6-8

In this lesson, students learn to look for numerical patterns and find evidence of this mathematical pattern in nature.

[Mystery Cube](#)

ReadWriteThink | Lesson | 6-12

The Mystery Cube helps students identify and summarize story elements in this popular genre. It can be used as a postreading or prewriting activity.

[Caesar Cipher](#)

Illustrations | Lesson | 9-12

In this lesson, students will investigate the Caesar substitution cipher. Text will be encoded and decoded using inverse operations.

[Risks and Benefits](#)

Science NetLinks | Lesson | 9-12

This lesson provides students with an opportunity to further their understanding of the risks and benefits associated with innovations in science and technology. Using the case study approach, students examine two examples of technological innovations and the risks and benefits associated with them.