- Why is mathematics important in daily life?
- Can you name any famous mathematicians?

Text

- Mathematics, the science of structure, order, and relation that has evolved from elemental practices of counting, measuring, and describing the shapes of objects. It deals with logical reasoning and quantitative calculation, and its development has involved an increasing degree of idealization and abstraction of its subject matter. Since the 17th century, mathematics has been an indispensable adjunct to the physical sciences and technology, and in more recent times it has assumed a similar role in the quantitative aspects of the life sciences.

  In many cultures—under the stimulus of the needs of practical pursuits, such as commerce and agriculture—mathematics has developed far beyond basic counting. This growth has been greatest in societies complex enough to sustain these activities and to provide leisure for contemplation and the opportunity to build on the achievements of earlier mathematicians.

  All mathematical systems (for example, Euclidean geometry) are combinations of sets of axioms and of theorems that can be logically deduced from the axioms. Inquiries into the logical and philosophical basis of mathematics reduce to questions of whether the axioms of a given system ensure its completeness and its consistency. For full treatment of this aspect, *see* mathematics, foundations of.

  This article offers a history of mathematics from ancient times to the present. As a consequence of the exponential growth of science, most mathematics has developed since the 15th century ce, and it is a historical fact that, from the 15th century to the late 20th century, new developments in mathematics were largely concentrated in Europe and North America. For these reasons, the bulk of this article is devoted to European developments since 1500.

  This does not mean, however, that developments elsewhere have been unimportant. Indeed, to understand the history of mathematics in Europe, it is necessary to know its history at least in ancient Mesopotamia and Egypt, in ancient Greece, and in Islamic civilization from the 9th to the 15th century. The way in which these civilizations influenced one another and the important direct contributions Greece and Islam made to later developments are discussed in the first parts of this article.

  India’s contributions to the development of contemporary mathematics were made through the considerable influence of Indian achievements on Islamic mathematics during its formative years. A separate article, South Asian mathematics, focuses on the early history of mathematics in the Indian subcontinent and the development there of the modern decimal place-value numeral system. The article East Asian mathematics covers the mostly independent development of mathematics in China, Japan, Korea, and Vietnam.

LIVEWORKSHEETS

Match the words with their meanings.

- structure -the process of thinking logically about something
- reasoning-a way that parts are organized or arranged
- quantitative-a general idea rather than a concrete object
- abstraction-related to numbers or amounts
- commerce-to support or keep something going
- sustain-the activity of buying and selling goods
- axiom-a statement that can be proved using facts and logic
- theorem-a statement that is accepted as true without proof
- civilization-the power to affect how someone or something develops
- influence-an advanced human society with culture and knowledge

Fill in the blanks with correct words from the list:
(*structure, reasoning, commerce, influence, civilization*)

- Ancient _____ like Egypt and Greece made big progress in mathematics.
- Logical _____ is important for solving problems.
- Trade and _____ helped mathematics grow.
- The _____ of India was strong in Islamic mathematics.
- Geometry studies the _____ of shapes.

Choose the correct form.

- Mathematics **(has / have)** been important since ancient times.
- It **(developed / has developed)** far beyond basic counting.
- Many cultures **(were / have been)** influenced by Greek mathematics.
- Mathematicians **(worked / have worked)** for centuries to create new ideas.
- Since the 17th century, mathematics **(became / has become)** a part of science.
- Reading Comprehension

Answer the questions:

- What is mathematics described as in the first paragraph?
- Why did mathematics develop in many cultures?
- What are mathematical systems made of?
- Where did most mathematical development occur after the 15th century?
- Why is it important to study ancient civilizations to understand European mathematics?
- How did India influence Islamic mathematics?

LIVEWORKSHEETS