

Geometry Help for Elementary Classrooms

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Geometry at the elementary level involves more than just knowing the names of the shapes. It is closely tied to other topics in math like measurement and numbers. In order to provide the best instruction, teachers could anticipate and reflect on the errors and misconceptions of their students.

- **A Strong Foundation**

In elementary school, geometry is sometimes reduced to learning the names of shapes and measuring a few angles. We could give our students an edge in the competitive global economy by strengthening their mathematical foundation.

Geometry is closely linked to other mathematical concepts like finding perimeter or area, fractions, data and algebra. In order to be successful in these areas, students in the lower elementary grades need opportunities to explore geometry and get geometry help. They need to physically and mentally change the position of objects. Students need to be able to describe shapes using the correct name and description. Experience with relationships among shapes, such as two triangles can make a rectangle, leads to an understanding of formulas for finding area of shapes and the concept that shapes that look different can have the same area. Elementary math help should incorporate geometry.

- **Vocabulary Matters**

Using accurate and specific vocabulary is essential for students to be successful in geometry. Teachers should model using appropriate vocabulary beginning at the early grades to prevent misconceptions and enhance learning through language. In other words, elementary math help begins with math vocabulary. For instance, increasing the use of words like polygon or rhombus to describe what we might have called a "diamond" can help students understand the meaning of properties and attributes of shapes. Pointing out various types of triangles can help students learn to define triangles by their attributes, not a limited archetype of the isosceles triangle founding many primary grade books and shape puzzles. As you see geometry help includes more than just math in a vacuum.

Learning the "rules" of shapes can be fun and productive for all elementary students. In later grades, they need the flexibility and accuracy in language to move from using words like "same" to understanding concepts like similar or congruent. Congruent shapes match exactly and similar shapes are related by bigger or smaller versions of the same shape.

Tools like geoboards can give students the hands-on practice they need. Geoboards are plastic trays with a grid of raised pegs onto which rubber bands are hooked to show shapes. Students can explore, compose and decompose shapes. Taking shapes apart and putting them back together get at algebraic ideas like equivalency and patterns.

- **Geometry Technology**

Technology can be used to enhance students understanding of geometry in a variety of ways. Computers can help students build more complex models and grids. Games such as Tetris provide opportunities for students to practice manipulating two and three-dimensional models in their heads and predict outcomes. Navigating maps and using coordinate grids can help students develop a context for plotting points on the Cartesian plane. When used appropriately, technology can be a valuable tool for teaching and assessing geometric concepts. Geometry is fun to learn and fun to teach!

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