

GEOMETRY



Curated by



Geometry

What is it?

Geometry is the study of two- and three-dimensional figures. It includes defining the different figures, as well as describing their location and movement in space. In the primary and intermediate grades, this study includes activities such as identifying, comparing, classifying, and building plane and solid figures; specifying the location of figures on coordinate grids; exploring congruency and similarity; checking for symmetry; and investigating the effects of slides, flips, and turns on figures.

Why is it important?

Geometry helps us understand and describe the world around us. Geometric concepts are used in architecture, engineering, astronomy, art, navigation, sports, furniture design, toy making, road building-the list goes on and on.

Children are engaged in geometric thinking when they choose the shortest path to the playground, pack food and drink containers into their lunch boxes, and grapple with how to maximise the number of cutouts from a sheet of construction paper.

How can you make it happen?

It is very important that a hands-on approach is taken in learning geometry. Students should be given many opportunities to identify examples of points, lines, angles, and planes in the world around them. Students should participate in many activities where they make, take apart, and manipulate both plane and solid figures.

Students can compare and classify figures using pattern blocks, paper cutouts, and real-world items such as chalk, boxes, and balls; check for congruency by placing one figure on top of another; identify symmetry by using mirrors and folding paper figures; slide, flip, and turn paper cutouts to explore the results of these transformations; and fold and tape nets to create their corresponding solid figures. These kinds of kinesthetic experiences are necessary for students to progress to the visualisation and abstract thinking skills required of them as they continue the study of geometry in the higher grades.

The vocabulary used to describe students' experiences in geometry should become more and more precise as students move through the grades so they have the vocabulary necessary to convey their thinking clearly-what may be called "square corners" in the primary grades becomes "right angles" in intermediate grades; likewise, "turning the figure halfway around" becomes "rotating the figure 180 degrees."

How can you stretch students' thinking?

For students to internalise accurately what plane and solid figures are, they need to be shown examples as well as non-examples of the figures. Understanding what a triangle is and is not, a student can then identify triangles in different orientations, whether they are represented "sitting" on a side, balanced on a "point" or vertex, or rotated to be positioned somewhere in between.

As students understand the essential attributes of figures, they can begin to understand relationships among figures: a square is a special kind of rectangle and a special kind of rhombus; and each of these square, rectangle, and rhombus is a quadrilateral.

Source:



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