

Geometry

— CREATE A JIGSAW PUZZLE —

ACTIVITY



Make a puzzle for your child to play with. Have your child paint or draw on a piece of cardboard or stiff paper.

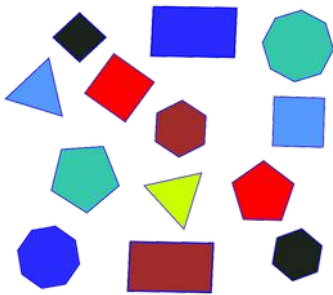
Cut the paper into large pieces. Jigsaw puzzle!

— SHAPES ON THE FLOOR —

ACTIVITY

Cut out large shapes from big pieces of paper (use color paper if you have it) and place the shapes on the floor. At first, use simple shapes such as a triangle, a rectangle, a square, a pentagon, a hexagon, and an octagon. You can find patterns for these online or in the EFM Printables file. To create more running around, include more than one of each shape.

As your child gets better at this, include variations of these shapes - include a right triangle, an obtuse triangle, an acute triangle, a kite, a parallelogram (diamond), and some more unusual shapes.



Give your child some shape information and challenge them to run to the shape, or shapes, that satisfy that information. For a very young child, show them a drawing and challenge them to find the matching shape on the floor, and maybe name it when they do. For a slightly older child, you could name the shape and challenge them to find it.

Add aspects to this by asking for shapes all of whose sides are the same length, or all of whose angles are the same (or all different), or whose opposite sides (or angles) are the same size.

As your child gets experienced, playfully mix in some impossible requests such as a triangle with two right angles or a quadrilateral with exactly three right angles.

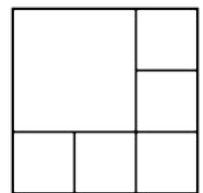
One useful variation in a lot of activities is to reverse your roles — have your child make up questions and you find the shapes. Make a "mistake" sometimes and have your child explain to you what you did wrong.

— FILLING SQUARES WITH SQUARES —

INVESTIGATION

In which ways can you fill a square with other squares, where the other squares need not all be the same size? However, the side length of each square must be some whole number multiple of a fixed length. The question to investigate is: What are all the numbers of squares that are possible? If you know a number is possible, is there an easy way to describe how to do it?

Let your child play with it over many days and don't be in a hurry to get to the answer. Here is a diagram showing how 6 is possible.



If your child enjoys exploring that question, explore variations on this theme. Suppose you only allow squares of certain sizes - such as 1 by 1, 2 by 2, and 3 by 3. Another direction to look at is filling other figures with figures that have the same shape. For example, ask the same question for regular triangles (triangles with all their sides the same length). Some figures are interesting to investigate in this way, and some are not interesting at all - which ones?