

Geometry

— PATTERNS — GAME

Patterns are everywhere! See how many you can make with your child. Play with:

- Movement patterns: stepping, jumping, waving, nodding
- Sound patterns: clapping, knee slapping, tongue clicking, stamping
- Loudness patterns: soft, medium, loud
- Visual patterns: color, shape, size

Player one: makes a pattern and challenges the other person to repeat it. (Step, clap, jump)

Player two: can repeat and eventually add to the pattern, challenging player one to repeat it. (Step, clap, jump, touch their nose)



As you get better, challenge each other to repeat longer and longer patterns from memory.

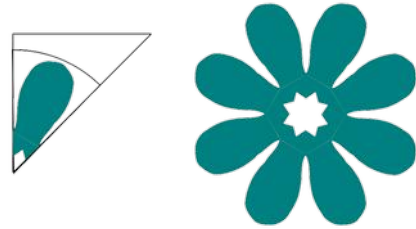
You can use a pattern as a secret code for getting through a passageway. You can also make necklaces with your child by taking string and threading on beads or bits of food to create repeating patterns. Walking hand in hand, you can use squeeze patterns (short short long, etc.).

For older children, create puzzles by drawing a pattern of shapes on paper. One person establishes a pattern and then leaves gaps in the sequence for the other to fill in.

— CUTTING SYMMETRIC SHAPES — ACTIVITY

Create designs by folding a piece of paper and cutting the paper while it is folded. This is called Kirigami. Folding the paper once and cutting it creates a design with one side the mirror image of the other. Experiment with cutting out faces, lamps, or geometric shapes.

If your child makes two intersecting folds, cutting this paper creates designs that are mirror images in two directions. This makes it easy to create designs such as flowers.



Experiment with various folds and cuts. Create snowflake designs by starting with the same two folds as in the last example, and then doing two more folds that split the folded paper into thirds.

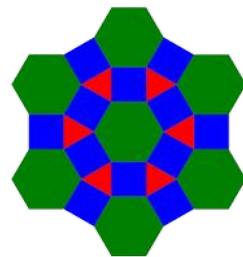
Make a game of this by working backwards - draw a symmetrical shape on a piece of paper and challenge your child to cut a folded piece of paper to create that shape.

— COLORED TILINGS — ACTIVITY

Create a set of “tiles” from cardboard or stiff paper. Use the patterns in the Printables pdf to create a set of shapes that fit well together.

Use one color for each shape (red squares, blue triangles, etc.).

Watch your child make patterns fitting the tiles together. Name the shapes and colors as they go.



With older children, talk about patterns in the tiling that repeat. Also, talk about symmetries in the overall design. Some designs have one side that is the reflection of the other side, and that is called *mirror symmetry*.

After your child has made a few designs, start pointing out patterns in the tiled floors and buildings that you see.