

Shapes Puzzle

Who doesn't love puzzles? They're hard to beat for an afternoon or evening of fun, but don't forget that they can also offer enormous benefits for learning. Here's an innovative puzzle that you can create with your fourth grade math student. If your child already loves math, you can explain that this puzzle provides valuable early practice in geometrical thinking. For the more reluctant mathematician, you can say that it uses art, too. And for any child, you can rightly promise that this will be fun.

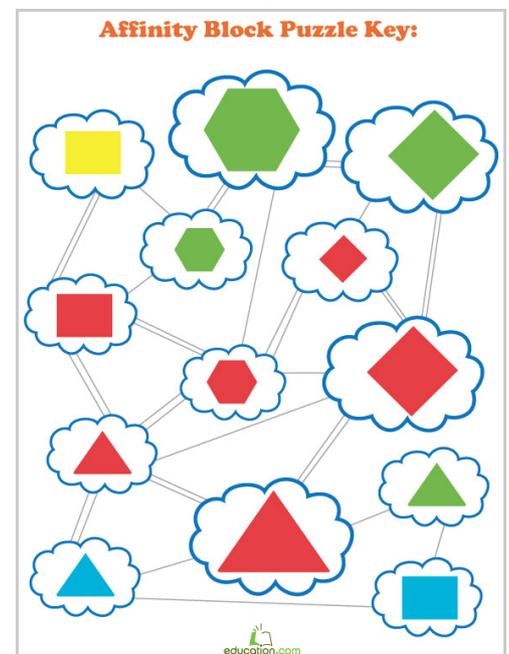
What You Need:

- Large (1.5 inches tall) shape blocks in 4 colors and 4 shapes: 1 each of diamonds, hexagons, triangles, squares (you can cut your own, or download ours here and print them on card stock)
- Small (.75 inch tall) shape blocks in 4 colors and 4 shapes: 1 each of diamonds, circles, triangles, and squares
- Plain white paper
- Pen
- Optional: download a sample Affinity Block Puzzle here



What You Do:

1. This puzzle uses a popular math teaching toy called "affinity blocks." These are flat blocks in different colors and geometric configurations. In the early grades, teachers may lay them out and have kids sort and classify by color, shape, and size. Now that fourth grade is here, though, it's going to get a little more tricky.
2. Pick one shape—let's say it's a large blue square—and place it on the bottom right of your plain paper, leaving a 1" margin between any edge of the shape and any edge of the paper. Use your pen to draw a loose blob around the shape.
3. Pick another shape—let's say a small red square—and place it above and to the left, about an inch away. Draw a blob around that shape as well.
4. Connect the two blobs with a "coded" line system: one line means one aspect in common—same shape, size, or color. Two lines means two aspects in common—both shape and size, or both size and color, or both color and shape. And three lines means all three: same color, shape, and size. Keep going with 4-6 more pieces until you have reached the top left of the page. It's also fun to create a story for the journey of shapes—a mathematical frog hopping lily pads, for example, or a planet-hopping spaceship heading for a faraway planet.
5. Now the fun begins. Pull off all but one or two blocks, and place them all in a heap on the table with some other extra blocks. Invite your fourth grader to recreate your puzzle. She will need to use logic at each stage, as well as a sense of spatial relationships, to figure it out.
6. This game is harder than it looks, and adults often get stumped! If someone gets stuck, it's fine to help out with a clue or two, or you can use fewer shapes. On the other hand, some kids just whiz through. If that happens, try adding an extra shape, such as a pentagon, or making a longer paper.



The game is great for geometrical thinking and logical processing. It's also good for hours of fun!

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