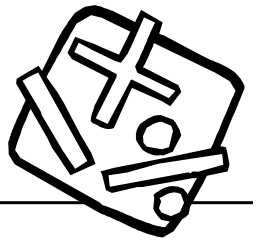
100 Puzzles



Find as many combinations of 100 as you can. Use what you know about numbers and geometry.

What you need

100 square grid (several copies)
Puzzle pieces:
- 20 five-square long pieces
- 20 ten-square long pieces
- 8 twenty-five square pieces (5-square by 5-square rectangle)
- 4 fifty-square pieces (10-square by 5-square rectangle)

Crayons

What to do

1. Cut the puzzle pieces out of a piece of 100 square grid paper. Color each piece.
2. Use the puzzle pieces to fill in a whole 100-square grid.
3. Pieces may not overlap each other.
4. You may not need to use all of the pieces.
5. Challenge yourself to make as many different solutions as possible.
6. Record your solutions to keep track of them.

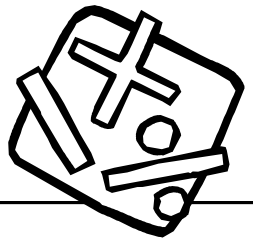
What to ask

- What would be the best way to record the solutions?
- Take one piece away; can you replace it with other pieces?
- What is a number sentence that can represent what you did to make the 100 puzzle?
- What is the largest number of pieces you can make fit?
- What is the least number of pieces you can make fit?

Did you know?

Children need to understand that numbers are made up of other numbers. An understanding that 100 can be two 50's, ten 10's or another combination of numbers can be built through the use of patterns and geometry. Use these number puzzles to learn to count or add.

The Children's Museum of Houston



What's next?

- Make puzzle pieces of different sizes.
- What would happen if your pieces were 3-squares, 6-squares and 9 squares in size?
- How many solutions can you find if you have to use at least one of each piece?
- How many different solutions would you find if you only used two kinds of pieces?

To learn more

100 Hungry Ants

by Elinor J. Pinczes

This children's book uses marching verses and whimsical art to describe how a colony of one hundred ants marching towards a picnic were persuaded to divide into rows of two, four, five, and ten so that they could arrive more quickly than marching single file.

Sir Cumference and the First Round Table

by Cindy Neuschwander

King Arthur and his knights have a royal tangle of problems. Their rectangular table is too long and their triangular table is too pointy, but they somehow must sit down and discuss the shape of the future. Join a knight named Sir Cumference, his wife, Lady Di of Ameter and their son Radius as they use different strategies to solve this problem.

How it helps with school

Texas Essential Knowledge and Skills (TEKS) Standards

Number, Operations, and Quantitative Reasoning: 3.3A, 3.4A; 4.4A
Patterns, Relationships, and Algebraic Thinking: 3.6B; 4.6; 5.5
Underlying Processes and Mathematical Tools: 3.16; 4.16; 5.15

National Council of Teachers of Mathematics (NCTM) Standards

Number and Operations, Algebra, Geometry, Representation

**Activity inspired by Sztajn, Paola (2002). "Celebrating 100 with Number Sense." Teaching Children Mathematics. v. 9, n. 4 (December) pp. 212-217.*

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ExxonMobil Math Path EM M³ Magnificent Math Moments