Amazing Math Games V
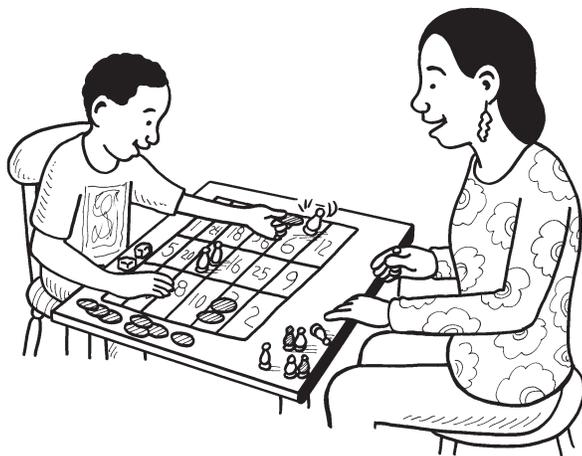
Estimate and count popcorn, determine the secret rule, become champion of the "factor factory"… these games are sure to build your youngster's math skills. And they're so much fun that he'll want to play them again and again!

Multiplication bump

Bump your opponent's tokens to claim the most squares. As you play, your child will practice multiplication.

You'll need: *paper, pencil, a different set of 10 tokens for each player (buttons, plastic chips), 2 dice*

1. Your youngster can create a game board by drawing a grid with 3 rows and 6 columns. He should write these numbers randomly in the 18 squares: 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 18, 20, 24, 25, 30, and 36.

2. On each turn, roll the dice and multiply the numbers rolled (for example, 3 x 2 = 6). Locate the product (6) on the board, and put a token on it.

3. If another player is on your spot, bump his token and replace it with one of your own. But if you already have a token on the square, add a second one. Now your tokens are safe and can't be bumped off. (If 2 tokens are already on the square, your turn ends.)

4. Play until someone has placed all 10 of his tokens on the board — he's the winner.

Popcorn estimation

Give your youngster's estimation skills a boost with this challenge.

You'll need: *large bowl of popcorn, small containers in different shapes and sizes (coffee mug, teacup, ramekin), small bowl for each player, paper and pencil*

1. Have each person select a container and think about how many pieces of popcorn will fit inside. *Hint:* Suggest that your child put a layer in the bottom and count the pieces (say, 5). She could estimate the number of layers that would fit (6), and multiply (5 x 6 = 30).

2. Announce your estimates.

3. Now fill your containers with popcorn. Your score is the difference between your estimate and the actual number. (So if 42 pieces fit in your youngster's container, she gets 12 points, since 42 – 30 = 12.)

4. Dump the popcorn into your bowls. The person with the lowest score wins — and everyone gets to eat their bowl of popcorn!

Division roll

Here's a simple dice game that lets your child work on division.

You'll need: *6 dice, paper, pencil*

1. Roll all 6 dice at once, and add the numbers together. *Example:* Roll 3, 1, 5, 3, 2, and 4 for a total of 18.

2. Then, roll 1 die, and divide your total by that number. So if you roll a 3, you score 6 (18 ÷ 3 = 6). *Note:* If the total doesn't divide evenly, use fractions ($19 \div 3 = 6\frac{1}{3}$).

3. Take turns rolling and dividing. After 5 rounds, the player with the highest score wins.

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The greatest fraction

Correctly determine the bigger fraction in this competition.

You'll need: *4 paper plates, scissors, marker, 13 index cards*

1. Have your youngster fold 1 paper plate in half, cut along the line to create equal halves, and label each piece $\frac{1}{2}$. She should fold and cut another plate into fourths (labeled $\frac{1}{4}$), and another into eighths (labeled $\frac{1}{8}$). Help her cut the last plate carefully into thirds (labeled $\frac{1}{3}$).

2. Next, let her write these fractions on separate index cards: $\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}$, and $\frac{7}{8}$. Shuffle the cards, and stack them facedown.

3. The first player draws 2 cards (say $\frac{2}{3}$ and $\frac{1}{2}$) and states which fraction she thinks is greater or whether they're equivalent (equal).

4. Using the paper plate fraction pieces, she checks her answer. In this case, she'd lay two $\frac{1}{3}$ pieces next to each other ($\frac{2}{3}$), then

lay one $\frac{1}{2}$ piece on top of them. This will show that $\frac{2}{3}$ is larger than $\frac{1}{2}$.

5. If she's right, she keeps the fraction cards. If not, she places them at the bottom of the stack.

6. When all the cards have been drawn, the person with the most cards is the winner.

What's your (number line) rule?

Be the first to spot the pattern and name the rule.

You'll need: *sidewalk chalk*

1. Draw a number line on a sidewalk or playground blacktop, with the numbers 0–50 evenly spaced.

2. Let your youngster secretly think of a math "rule" (say, "start at 1, and multiply by 2" or "begin at 15, and add 6").

3. Now he follows his rule repeatedly to create a pattern on the number line until someone figures it out. He should draw curved arrows to connect the numbers in the pattern, starting at 1. If his rule is "multiply by 2," the arrows would go from 1 to 2 (because 1 x 2 = 2), from 2 to 4 (since 2 x 2 = 4), and so on.
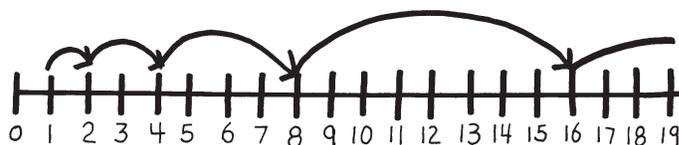

4. The first player to call out the rule that created the number pattern scores a point. Then, he erases the arrows and illustrates a new rule.

5. Earn 5 points to win.

Factor factory

In this "factory," your child will need to find factors of a number, or numbers that equal it when multiplied.

You'll need: *paper, pencil*

1. Ask your youngster to write the numbers 16, 24, 36, 50, and 72 at the tops of separate sheets of paper.

2. Place the numbered sheets faceup for everyone to see. Your child picks any sheet and writes 2 of the number's factors underneath, starting with 1 and the number. For 72, she would write 1 and 72, because 1 x 72 = 72. Then, she hands the paper to the next person.
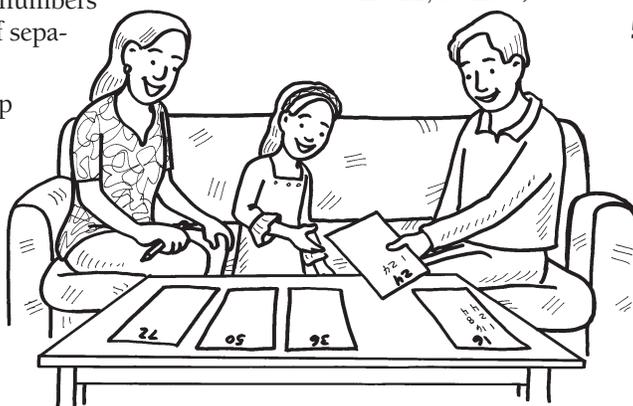
3. That player writes the next set of factors (2 and 36, since 2 x 36 = 72) and passes the paper on.

4. Continue until all factors are listed (3 and 24, 4 and 18, 6 and 12, 8 and 9).

5. The player who wrote the last factors keeps the paper. She takes a new numbered sheet and starts another round.

6. Play until all the numbers have been factored. The person who collects the most papers is the winner.

7. Choose new numbers between 1 and 100, and play again.

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