

Supporting Mathematics Learning at Home

- **Be Positive - It's Contagious**
Promote math in a positive way. Help kids understand that everyone is capable of learning mathematics. Have high expectations and encourage a positive mindset when it comes to mathematics - remember everyone is a math person!
- **Connect Math to Everyday Life**
Find opportunities to help kids see that learning math is worthwhile and useful in our daily lives. Show them that math is everywhere!
- **Encourage Thinking by Asking Questions**
The more kids do, the more they learn. Give them a chance to try strategies so they can find out what works and what doesn't. Avoid giving answers, explaining how to solve a puzzle, or telling what step to take to win a game. Ask questions instead. Be there to support when needed, but be sure to let kids do the work.
- **Encourage Persistence**
Some problems do take time to solve. Sometimes mistakes are made and a different strategy is needed. Help kids understand that being a good mathematician takes time and effort, but it is worth it.
- **Play Along**
"What books are to reading, play is to mathematics." - Dan Finkel (mathforlove.com)
Play games together. Inviting kids to play games means quality family time, building math skills without stress. Show your kids that you're having as much fun as they are! They will follow your lead.
- **Make Learning Math Fun**
Help kids see the beauty and magic in mathematics. Mathematical understanding is powerful. The most important thing we can ever teach kids about math is how fun and empowering it can be!
- **Suggested Games:**
A lot of classic **board games** involve mathematical thinking, and are worth playing. Here are a few that you may already have at home:
 - Chess
 - Checkers
 - Yahtzee
 - Connect 4
 - Sorry
 - Mancala
 - Monopoly
 - Tic-Tac-Toe
 - Dominoes

*Many games that strengthen concepts in mathematics can be played with everyday items like a deck of **cards** or a set of **dice**. You will find several examples in the pages that follow. Thank you for partnering with your child's school to support math learning at home. We hope you enjoy playing games together while reinforcing math skills at the same time!



Object

The player with the highest score above 10,000 points on the final round of play wins!

How to Play

Each player takes turns rolling the dice. When it's your turn, you roll all six dice at the same time. Points are earned every time you roll a 1 or 5, three of a kind, three pairs, a six-dice straight (1,2,3,4,5,6), or two triplets.











If none of your dice earned points, that's a Farkle! Since you earned no points, you pass the dice to the next player.

If you rolled at least one scoring die, you can bank your points and pass the dice to the next player, or risk the points you just earned during this round by putting some or all of the winning die (dice) aside and rolling the remaining dice. The remaining dice may earn you additional points, but if you Farkle, you lose everything you earned during the round.

Scoring is based only on the dice in each roll. You cannot earn points by combining dice from different rolls. You can continue rolling the dice until you either Pass or Farkle. Then the next player rolls the six dice until they Pass or Farkle. Play continues until it is your turn again.

The final round starts as soon as any player reaches 10,000 or more points.











Scoring Dice (in a single roll):

 = 50 pts	 = 1500 pts
 = 100 pts	 = 1500 pts
 = 1000 pts	3 Pairs = 1500 pts
 = 200 pts	2 Triplets = 2500 pts
 = 300 pts	4 of a Kind = 1000 pts
 = 400 pts	5 of a Kind = 2000 pts
 = 500 pts	6 of a Kind = 3000 pts
 = 600 pts	3 Farkles in a Row = Lose 1000 pts

Farkle

SCORE SHEET











Player 1	Player 2	Player 3	Player 4	Player 5	Player 6

-  = 50 pts
-  = 100 pts
-  = 1000 pts
-  = 200 pts
-  = 300 pts
-  = 400 pts
-  = 500 pts
-  = 600 pts
-  = 1500 pts
-  = 1500 pts
- 3 Pairs = 1500 pts
- 2 Triplets = 2500 pts
- 4 of a Kind = 1000 pts
- 5 of a Kind = 2000 pts
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Dice Games That Reinforce Math Skills

1. Addition or Multiplication facts:

Each player rolls two dice and adds (or multiplies). The player with greatest sum (or product) wins the round and gets a point. The player with the most points at the end of the game wins.

2. Subtraction:

Each player rolls either 4, 5, or 6 dice to create a subtraction (or division) problem. The player with the lowest difference (or quotient) wins the round and gets a point. The player with the most points at the end of the game wins.

3. Another variation for addition:

Each player rolls four dice and finds the sum of adding all four cubes together. Players could also create two digit by two digit addition (or multiplication) problems. The player with the greatest sum (or product) wins the round and gets a point. The player with the most points at the end of the game wins.

4. Tens (2 – 4 players)

First player rolls four dice and looks for sums of ten. The player gets one point for each sum of ten that can be made. Play continues to next player. (This game can be varied by looking for other sums: eleven, twelve, etc.)

5. A place value variation: (2 – 4 players)

The first player rolls four dice and forms a four digit number closest to an agreed upon goal: the largest four digit number, the smallest four digit number, or the four digit number closest to a certain number (like 5000). Players record their numbers and at the end of the round, compare numbers to see who came closest to the goal for that round.

6. Double digit Addition/Subtraction (2 – 4 players)

Players roll four dice and arrange into two-digit numbers.

Addition versions:

- Produce the greatest sum.
- Produce the least sum.
- Produce the sum closest to 100.

Subtraction versions:

- Produce the greatest difference.
- Produce the least difference.
- Produce a difference close to ____.

Have players record the problems they create. The person who is closest to the target wins that round.

7. Double digit Multiplication (2 – 4 players)

Each player rolls four dice and creates two two-digit numbers.

Targets:

1. Make the greatest product.
2. Make the least product.
3. Make a product close to _____. (This will encourage estimation strategies.)

This game can also be modified to work on 1 digit x 2 digits (use three dice) or 1 digit x 3 digits (use four dice).

Card Games That Reinforce Math Skills

Addition War (2 players)

Remove all face cards from the deck. Players split the remaining cards and lay them face down on a pile in front of them. Each player turns over the top two cards and finds the sum. (Ace counts as one.) Whoever has the greatest sum wins all four cards. In the case of a tie, each player can turn over two more cards, find the new sum, and the greatest sum wins all eight cards! Play continues until one player has all of the cards and is the winner.

Multiplication War - This same game can be used to practice multiplication facts.

Place Value War (2 players)

Remove all face cards and tens from the deck. Players split the remaining cards and lay them face down on a pile in front of them. Each player turns over the top two (or three, or four) cards and makes the largest number possible. Whoever makes the greater number, wins all the cards. Play continues until one player has all of the cards and is the winner.

Tens (2 – 4 players)

Remove the face cards from the deck. Shuffle the cards and deal five cards to each player. Remaining cards are placed face down in a pile. If the first player can find two or more cards that have a sum of ten, that player may lay those cards down. If the player cannot make a sum of ten, then a card is drawn from the pile. Play continues until there are no cards left in the pile and no more sums of ten can be made. The winner is the player that has the most sums of ten.

Add-em (2 – 4 players)

Remove face cards and tens from the deck. Deal each player 4 cards. Each player works to arrange his or her 4 cards into a two digit plus two digit addition problem that will give them the highest possible sum. (You might need paper and pencil to figure out the sum.) The winner of that hand is the person with the highest sum over all. Keep score to determine a winner. For another variation, try playing for the lowest sum or the sum closest to a certain number (like 50).

Subtract-em (2 –4 players)

Add-em (2 – 4 players)

Remove face cards and tens from the deck. Deal each player 4 cards. Each player works to arrange his or her 4 cards into a two digit plus two digit addition problem that will give them the highest possible sum. (You might need paper and pencil to figure out the sum.) The winner of that hand is the person with the highest sum over all. Keep score to determine a winner. For another variation, try playing for the lowest sum or the sum closest to a certain number (like 50).

Multiply-em (2 – 4 players)

Similar to Add-em or Subtract-em. Players arrange their four cards to form the largest (or smallest) product that can be made as a result of multiplying a one digit number times a three digit number, or a two digit number times a two digit number. Calculators can be used as students try out different arrangements to see which arrangement leads to the greatest (or least) product.

Divide-em (2-4 players)

Players arrange their four cards to form the largest (or smallest) quotient that can be made as a result of dividing a two or three digit number by a one digit number, or a three or four digit number by a one or two digit number. Calculators can be used as students try out different arrangements to see which arrangement leads to the greatest (or least) product.

Make a Number (2-4 players)

The goal of the game is to make the greatest (or least) four digit number possible. Cards are shuffled and placed in the center of the table. Students have a mat with spaces for 4 cards (a four digit number). Students take turns drawing cards. On their turn, each student draws a card and places it on the mat. Once a card has been placed, its position may not be changed. Once everyone has created their number, students compare and whoever is the closest to the target scores a point for that round.

Online Mathematics Resources for Families & Communities

[Strengthening Mathematical Literacy at Home](#): This brief video provides tips and strategies for parents and caregivers to strengthen students' mathematical literacy at home.

[Numeracy at Home](#) - activities, tips, and information to support young children's mathematics learning during everyday activities (K-2).

[PBS for Parents](#) - includes activities and games that can be searched by age and topic (K-2).

[Peg + Cat Collection](#) – In each 11-minute episode of this animated math-based series for grades PreK-2, Peg and Cat find themselves thrust into the middle of a wacky word problem.

[Sesame Street Math Resources for Early Learners Collection](#) – This series includes mathematics learning for grades PreK – 1.

[Count On It! Series Collection](#) – This video series for grades PreK-3 features two puppets, Blossom and Snappy, who both love finding math in everyday situations. You can often find them shopping, baking, event planning, decorating and visiting attractions.

[Good to Know Math Video Collection](#) – This digital video series for adults introduces the methods, vocabulary, and processes their child learns at school. These short, clear, and fun videos will help to explain math topics that are taught in Pre-K-Grade 4.

[Bedtime Math](#) - offers online math problems for parents to do with their kids every day, as well as lively hands-on games (K-5).

[Khan Academy Math](#) - provides free online lessons. Students only need to create an account if saving their work is desired (K-12).

[Would You Rather Math](#) - prompts students to construct a mathematical argument for choosing between two or more options (K-12).

[FigureThis!](#) NCTM - provides activities and mathematics challenges for students and families. Some challenges are also available in Spanish. Tips for parents are provided in the Family Corner (3-12).

[Learn and Grow With WHRO](#) (grades K-3)

[Continue To Know With WHRO](#) (grades 4-7)

