



End-of-Year Family Letter

Congratulations!

By completing *Fifth Grade Everyday Mathematics*, your child has accomplished a great deal. Thank you for all of your support!

This Family Letter is here for you to use as a resource throughout your child's vacation. It includes an extended list of Do-Anytime Activities, directions for games that can be played at home, a list of mathematics-related books to check out over vacation, and a sneak preview of what your child will be learning in *Sixth Grade Everyday Mathematics*. Enjoy your vacation!

Do-Anytime Activities

Mathematics means more when it is rooted in real-life situations. To help your child review many of the concepts he or she has learned in fifth grade, we suggest the following activities for you and your child to do together over vacation. These activities will help your child build on the skills he or she has learned this year and help prepare him or her for *Sixth Grade Everyday Mathematics*.

- 1** Review multiplication facts. Include the basic facts such as $7 * 8 = 56$, and "extended facts," such as $70 * 8 = 560$ and $70 * 80 = 5,600$.
- 2** Create opportunities to work with rulers, yardsticks, metersticks, tape measures, and scales. Have your child measure using both metric and U.S. customary units.
- 3** Ask your child to solve multiplication and division problems that are based on real-life situations. Vary the problems so that some are suitable for mental computation, some require paper-and-pencil calculation, and others require the use of a calculator.
- 4** Practice using percents by asking your child to calculate sales tax, percent discounts, sports statistics, and so on.
- 5** Continue the American Tour by reading about important people, events, inventions, explorations, and other topics in American history. Focus on data displays such as bar, line, and circle graphs; and on color-coded maps.



Building Skills through Games

The following section lists rules for games that can be played at home. The number cards used in some games can be made from 3" by 5" index cards.

Factor Captor

- To start the first round, Player 1 (James) chooses a 2-digit number on the number grid. James covers it with a counter, and records the number on scratch paper. This is James's score for the round.
- Player 2 (Emma) covers all of the factors of James's number. Emma finds the sum of the factors, and records it on scratch paper. This is Emma's score for the round.

A factor may only be covered once during a round.

- If Emma missed any factors, James can cover them with counters and add them to his score.
- In the next round, players switch roles. Player 2 (Emma) chooses a number that is not covered by a counter. Player 1 (James) covers all factors of that number.
- Any number that is covered by a counter is no longer available and may not be used again.
- The first player in a round may not cover a number less than 10, unless no other numbers are available.
- Play continues with players trading roles in each round, until all numbers on the grid have been covered. Players then use their calculators to find their total scores. The player with the higher total score wins the game.

EXAMPLE

Round 1: James covers 27 and scores 27 points. Emma covers 1, 3, and 9, and scores $1 + 3 + 9 = 13$ points.

Round 2: Emma covers 18 and scores 18 points. James covers 2, 3, and 6, and scores $2 + 3 + 6 = 11$ points. Emma covers 9 with a counter, because 9 is also a factor of 18. Emma adds 9 points to her score.

Frac-Tac-Toe (2-4-5-10 version)

Advance Preparation: Separate the cards into two piles—a numerator pile and a denominator pile. For a 2-4-5-10 game, place two each of the 2, 4, 5, and 10 cards in the denominator pile. All other cards are placed on the numerator pile.

Shuffle the cards in each pile. Place the piles facedown. When the numerator pile is completely used, reshuffle that pile, and place it facedown. When the denominator pile is completely used, turn it over and place it facedown without reshuffling it.

- Players take turns. When it is your turn:
 - Turn over the top card from each pile to form a fraction (numerator card over denominator card).
 - Try to match the fraction shown with one of the grid squares on the Game Board. (Use either of the gameboards shown) If a match is found, cover that grid square with your counter and your turn is over. If no match is found, your turn is over.

1	2	2	2	2	2
2	3	3	3	3	3
3	4	4	4	4	5
5	5	5	6	6	7
7	8	8	9	9	10
10	11	12	13	14	15
16	18	20	21	22	24
25	26	27	28	30	32

Factor Captor
number grid

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Game Boards for the 2-4-5-10
versions of Frac-Tac-Toe

> 1.0	0 or 1	> 2.0	0 or 1	> 1.0
0.1	0.2	0.25	0.3	0.4
> 1.5	0.5	> 1.5	0.5	> 1.5
0.6	0.7	0.75	0.8	0.9
> 1.0	0 or 1	> 2.0	0 or 1	> 1.0

>100%	0% or 100%	>200%	0% or 100%	>100%
10%	20%	25%	30%	40%
>100%	50%	>200%	50%	>100%
60%	70%	75%	80%	90%
>100%	0% or 100%	>200%	0% or 100%	>100%

2. To change the fraction shown by the cards to a decimal or percent, players *may* use a calculator.
3. **Scoring** The first player covering three squares in a row in any direction (horizontal, vertical, diagonal) is the winner.

Variations:

- ▷ For a 2-4-8 game, place two each of the 2, 4, and 8 cards in the denominator pile. Use the game boards shown in the margin.
- ▷ For a 3-6-9 game, place two each of the 3, 6, and 9 cards in the denominator pile. Use the game boards shown in the margin.

Multiplication Bull's-eye

1. Shuffle a deck of number cards (4 each of the numbers 0–9) and place them facedown on the playing surface.
2. Players take turns. When it is your turn:
 - ▷ Roll a six-sided die. Look up the target range of the product in the table.
 - ▷ Take four cards from the top of the deck.
 - ▷ Use the cards to try to form two numbers whose product falls within the target range. **Do not use a calculator.**
 - ▷ Multiply the two numbers on your calculator to determine whether the product falls within the target range. If it does, you have hit the bull's-eye and score 1 point. If it doesn't, you score 0 points.
 - ▷ Sometimes it is impossible to form two numbers whose product falls within the target range. If this happens, you score 0 points for that turn.
3. The game ends when each player has had five turns.
4. The player scoring more points wins the game.

EXAMPLE

Tom rolls a 3, so the target range of the product is from 1,001 to 3,000.

He turns over a 5, a 7, a 2, and a 9.

Tom uses estimation to try to form two numbers whose product falls within the target range—for example, 97 and 25.

He finds the product on the calculator:
 $97 * 25 = 2,425$.

Since the product is between 1,001 and 3,000, Tom has hit the bull's-eye and scores 1 point.

Some other possible winning products from the 5, 7, 2, and 9 cards are:
 $25 * 79$, $27 * 59$, $9 * 257$, and $2 * 579$.

Number on Die	Target Range of Product
1	500 or less
2	501–1,000
3	1,001–3,000
4	3,001–5,000
5	5,001–7,000
6	more than 7,000

2-4-8 Frac-Tac-Toe Game Boards

>2.0	0 or 1	>1.5	0 or 1	>2.0
1.5	0.125	0.25	0.375	1.5
>1.0	0.5	0.25 or 0.75	0.5	>1.0
2.0	0.625	0.75	0.875	2.0
>2.0	0 or 1	1.125	0 or 1	>2.0

>200%	0% or 100%	>150%	0% or 100%	>200%
150%	12½%	25%	37½%	150%
>100%	50%	25% or 75%	50%	>100%
200%	62½%	75%	87½%	200%
>200%	0% or 100%	112½%	0% or 100%	>200%

3-6-9 Frac-Tac-Toe Game Boards

>1.0	0 or 1	0.1̄	0 or 1	>1.0
0.16̄	0.2̄	0.3̄	0.3̄	0.4̄
>2.0	0.5̄	>1.0	0.6̄	>2.0
0.6̄	0.7̄	0.83̄	0.8̄	1.3̄
>1.0	0 or 1	1.6̄	0 or 1	>1.0

>100%	0% or 100%	11.1%	0% or 100%	>100%
16⅔%	22.2%	33⅓%	33.3%	44.4%
>200%	55.5%	>100%	66.6%	>200%
66⅔%	77.7%	83⅓%	88.8%	133⅓%
>100%	0% or 100%	166⅔%	0% or 100%	>100%

Vacation Reading with a Mathematical Twist

Books can contribute to children's learning by presenting mathematics in a combination of real-world and imaginary contexts. The titles listed below were recommended by teachers who use *Everyday Mathematics* in their classrooms. They are organized by mathematical topic. Visit your local library and check out these mathematics-related books with your child.

Numeration

The Rajah's Rice: A Mathematical Folktale from India by David Barry

Operations and Computation

Counting on Frank by Rod Clement

Data and Chance

Jumanji by Chris Van Allsburg

Geometry

A Cloak for the Dreamer by Aileen Friedman; *Flatland* by Edwin Abbott; *The Boy Who Reversed Himself* by William Sleator

Measurement and Reference Frames

Spaghetti and Meatballs for All!: A Mathematical Story by Marilyn Burns; *Mr. Archimedes' Bath* by Pamela Allen

Looking Ahead: Sixth Grade Everyday Mathematics

Next year your child will ...

- ▷ continue to collect, display, describe, and interpret data
- ▷ maintain and extend skills for comparing, adding, subtracting, multiplying, and dividing fractions and mixed numbers
- ▷ use scientific notation to write large and small numbers; explore scientific notation on a calculator
- ▷ continue the study of variables, expressions, equations, and other topics in algebra; use variables in spreadsheets; and solve equations and inequalities
- ▷ extend skills in geometry, including constructions, transformations of figures, and volumes of 3-dimensional figures
- ▷ maintain and apply skills for adding, subtracting, multiplying, and dividing whole numbers, decimals, and positive and negative numbers