

4th Grade

The collage features several math activities:

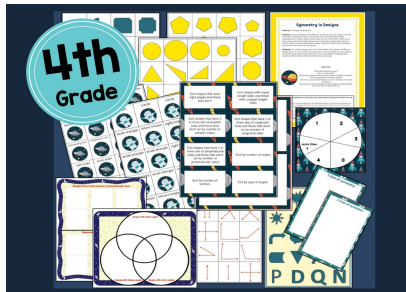
- 2x=y Board:** A board with a gumball machine illustration and numbered circles (1-10) for a multiplication game.
- 100 Chart:** A standard 10x10 grid for number recognition or counting.
- Spinner:** A circular spinner divided into 20 equal sectors, numbered 1 through 20.
- Target Number Grid:** A 3x3 grid with the target number 32 and empty boxes for player scores.
- Math Cards:** Various cards with math problems such as $2+2+2+2$, $3+3+3$, $1+1+1+1$, $3+3+3+3$, 5×2 , 3×5 , 5×4 , 3×2 , and word problems like "You buy any number sweets for \$2 each. Later, there's a sale and you buy five times as many sweets for \$1 each. How many sweets do you have now? What was the total cost?"
- Algebraic Equations:** Cards with equations like $2x=y$, $x-7=y$, $x+9=y$, $5x=y$, $x=4y$, $x=6y$, and $2x=4y$.
- Place Value Cards:** Cards with questions about tens and hundreds digits, such as "My tens digit is divisible by ___ but not by ___."

OPERATIONS & ALGEBRAIC THINKING

7 math partner games

by Angela Watson

Check out the complete product line for 4th grade math!



4th Grade

GEOMETRY
8 math partner games

by Angela Watson

This image shows a collection of colorful geometric shapes, including circles, triangles, and squares, along with various math worksheets and partner game cards. A Venn diagram is also visible among the materials.



4th Grade

FRACTIONS & DECIMALS
14 math partner games

by Angela Watson

This image displays a variety of math worksheets and partner game cards related to fractions and decimals. It includes a number line, a fraction bar, and several math problems. The word 'ROCKSTAR' is prominently featured on one of the cards.

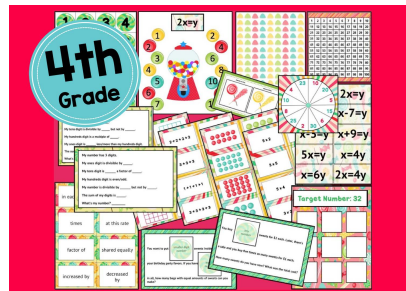


4th Grade

NUMBER & OPERATIONS IN BASE TEN
14 place value partner games

by Angela Watson

This image shows a collection of math worksheets and partner game cards focusing on place value. It includes a large number grid, a place value chart, and several math problems. The word 'ROCKSTAR' is also visible on one of the cards.




4th Grade

OPERATIONS & ALGEBRAIC THINKING
7 math partner games

by Angela Watson


This image displays a collection of math worksheets and partner game cards related to operations and algebraic thinking. It includes a number line, a multiplication table, and several math problems. The word 'ROCKSTAR' is prominently featured on one of the cards.



DISCUSSION STARTERS
for math problem solving

by Angela Watson

This image shows a stack of colorful discussion starter cards for math problem solving. The top card is titled 'Discussion Starters for Math Problem Solving' and includes questions for modeling and reinforcing mathematical practices.



QUESTION STEMS
for math practices

by Angela Watson

This image shows a collection of colorful question stems for math practices. The stems are arranged in a circular pattern and include various questions for modeling and reinforcing mathematical practices.

The Candy Machine

Materials: The Candy Machine game boards in plastic page protectors, vis-à-vis markers, paper towels, The Candy Machine game cards

Directions: Each player takes a Candy Machine game board and a game card. Don't let your partner see your card! Use the card to fill in the candies on your game board: the candy machine takes the number you write on the left side and turns it into the number you enter on the right. (See the example to the right.) When you're done, cover your board with a paper towel (or two, if they're see-through.) Trade with your partner and try to figure out the rule that was on each other's cards. Be sure to explain your thinking! You can earn ten points for guessing correctly on the first try, 5 points for guessing correctly on the second try, or one point for taking three or more guesses. Wipe off your cards when you're done, pick new Candy Machine game cards, and play again!



Challenge: Leave the last set of candies on your card blank. This time, your partner must guess the rule AND fill in the last part of the pattern!

Math Talk:



What patterns did you notice on the candy machine game board?
How are the numbers on the left side related? The right side?
How would you describe the rule or pattern in your own words?
How would you continue the pattern?
How can finding patterns help you solve real world problems?

CCSS: Generate and analyze patterns.

4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

I can continue a given number or shape pattern.

I can make a number or shape pattern that follows a given rule.

I can explain how different patterns are built.

I can analyze a pattern to determine parts not stated in the rule.

Game Direction Pages

Product Spin Off

Materials: Product Spin Off spinner, array picture cards, multiplication cards, repeated addition cards (challenge only)

Directions: Mix up all the array picture cards and multiplication cards and place them in one face-down stack. Player 1 spins the spinner; the number spun is the product both players will try to find on a card. Player 2 draws a card from the stack and explains why the card is equal or not equal to the product spun. (For example, "My card has 6 groups of 5 which makes 30, but the product on the spinner is 15, they're not equal" or "My card has 6x5 and the spinner shows 18, so they are equal.") Take turns playing. Whenever the card and spinner match, the player who spun the card and spinner again to get a new product for the other person with the most cards when time is up wins the game.

Challenge: Add in the repeated addition cards and look for products in three different ways! Or, use the blank cards to write multiplication sentences, division sentences, multiplication sentences, or repeated addition sentences.

How can you explain what arrays means in your own words?
How can you explain what any means in your own words?
How can you explain what groups needed for repeated addition?
How can you explain what more than one repeated addition sentence for each array?
How can you explain what more than one multiplication sentence for each array?
How can you explain what multiplication facts with their array models?
Can a product have more than one multiplication sentence? How?
How can a multiplication equation be expressed as a comparison?

CCSS: Use the four operations with whole numbers to solve problems.

4.OA.A.1 Interpret a multiplication equation as a comparison, e.g., interpret $55 = 5 \times 7$ as a statement that 55 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

I can recognize multiplication strategies.
I can write a multiplication equation based on given data.

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Target Number Challenge

Materials: One Target Number Challenge game board to share, Target Number Challenge cards, number cards 1-12, blank paper or math journals, pencils

Directions: Both players choose one Target Number Challenge card to share and place it on the game board. Turn the number cards face down in a stack and take turns picking them and placing them anywhere on the board. Then take turns trying to find cards that equal the target number when multiplied or divided. For example, if the target number is 12, you could take the 6 and 2 cards and say "6x2=12" or take 24 and 2 cards and say "24÷2=12."

If a player is able to make the target number, she or he says the equation out loud, writes it down, and keeps the cards. The player then tries to make the target number on the next card. The player then turns the cards face down to fill the empty spaces on the game board. Both players take turns doing this. If you can't find a card, say "out" and one player goes to another person a turn. If neither of you can find the target number, each of you chooses another number card to place on the board. At the bottom of the board, there are a lot of empty spaces. If you can't find a card to make the target number, you can write the equation on the board. You can keep trying until time is up.

Challenge: Change the game numbers so you can use more than two cards and other operations. For example, use the 1, 10, and 2 cards and say "1x10÷2=5."

Math Talk:

What strategies did you use to make the target number?
Are there other ways that the target number could be made?
What multiplication strategies did you use during the game?
How did you use mental math strategies help you play this game?
How would this game be different if you used other operations?

CCSS: Use the four operations with whole numbers to solve problems.

4.OA.A.1 Interpret a multiplication equation as a comparison, e.g., interpret $55 = 5 \times 7$ as a statement that 55 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

I can recognize multiplication strategies.
I can write a multiplication equation based on given data.

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What's the Story?

Materials: What's the Story cards, number cards, pencils, math journals or paper, blank work mat for organizing cards (optional)

Directions: Choose a What's the Story card to share with your partner. Put the number cards in a face-down stack. Each player picks one number card. Show the cards to each other. Then use your number cards and What's the Story card to make up a two step word problem with your partner. For example, if your number cards read 50 and 35 and your What's the Story card reads at this rate, you can make a problem like, "John reads 30 pages a day. At this rate, how many pages can he read in 16 days?" Both players should write the word problem on a journal page together using any strategy you choose.

Challenge: Can you use a different strategy for solving the problem? Explain to one another how you solved. Another way is to use the same number cards but partner but create different word problems with one another. Switch roles and solve!

How can you use which operation to use with a key word?
Can you use which operation to use with more than one operation?
How can you use which operation to use with more than one operation?
How can you decide the order of operations when solving?
What strategies did you use for solving your problem?
Are there another way to solve the problem? How?
How could estimation help you solve the problem?

CCSS: Use the four operations with whole numbers to solve problems.

4.OA.A.1 Multiply or divide to solve word problems involving multiplicative comparisons, e.g., using drawings and equations with a symbol for the unknown number to represent the problem. Represent these problems using mental computation and estimation strategies including rounding.

I can use multiplication to solve word problems.
I can use division to solve word problems.
I can use multiplication to solve word problems.
I can use division to solve word problems.
I can use multiplication to solve word problems.
I can use division to solve word problems.
I can use multiplication to solve word problems.
I can use division to solve word problems.

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Sweet Word Problems

Materials: One copy of each Sweet Word Problems game board, number cards

Directions: Each partner chooses a Sweet Word Problems game board. Put the number cards in a face-down stack. Each partner chooses number cards without looking, and places those numbers on his or her board. Then switch boards and solve each other's problems using any strategy you choose. Afterwards, take turns explaining how you solved and how you know your answer is correct. Then pick a new game board and new number cards and play again! You can keep playing until time is up. If you want to keep score, give each player one point for every problem solved.

Challenge: Instead of choosing your own game board, choose your partner's. Each of you must solve the problem using a different strategy. Did you both get the same answer? Talk about your strategies.

How many steps were in your problem? How do you know?
How could you use which operation to use when solving?
How could you use which operation to use when solving?
How could you use which operation to use when solving?
How could you use which operation to use when solving?
How could you use which operation to use when solving?

CCSS: Use the four operations with whole numbers to solve problems.

4.OA.A.1 Multiply or divide to solve word problems involving multiplicative comparisons, e.g., using drawings and equations with a symbol for the unknown number to represent the problem. Represent these problems using mental computation and estimation strategies including rounding.

I can use multiplication to solve word problems.
I can use division to solve word problems.
I can use multiplication to solve word problems.
I can use division to solve word problems.

4.OA.A.1 Solve multi-step word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using mental computation and estimation strategies including rounding.

I can solve a word problem that includes letters representing numbers.

I can choose the correct operation to solve a word problem.

I can use mental math and estimation to determine whether my answer is reasonable.

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Riddle Me This

Materials: Riddle Me This cards in plastic page protectors, vis-a-vis markers, paper towels, number cards

Directions: Each player takes one Riddle Me This card and one number card. Make sure your partner can't see them! Fill out your Riddle Me This card based on the number card. When you and your partner are finished, trade Riddle Me This cards and try to guess each other's numbers. Be sure to explain your thinking. You can earn ten points for guessing correctly on the first try, 5 points for each additional try on the second try, or one point for taking three or more tries. When you're done, pick new number cards, and play again! You can keep playing until time is up when you're done.

Challenge: Use back of the Riddle Me This cards to write your own riddles. Give your partner one, and try to make sure to include all the factors in at least one clue.

Math Talk:

What strategies did you use to try to guess your partner's number?
How did your knowledge of factor pairs help you play?
Can you show that a number is a multiple of its factors? How?
How could you prove your guess is correct?
What other clues could your partner have given you?

CCSS: Gain familiarity with factors and multiples.

4.OA.A.1 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

I can recognize prime and composite numbers up to 100.

I can write the factors of each number up to 100.

I can show that a whole number is a multiple of each of its factors.

I can check to see if a given whole number is a multiple of numbers on through 100.

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Find My Pattern

Materials: Two copies of the hundred chart, counters, number cards 1-10

Directions: Place a folder or divider between you and your partner so you can't see each other's hundred chart. Each player secretly takes one number card. Multiply the number on the card times every number 1-10 and cover the products on your hundred chart. For example, if your card has a 5 on it, you would multiply 5 by 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10, and cover the 5, 10, 15, and so on. When your partner is done, remove the divider and look at each other's hundred charts. Which number you were multiplying by and explain the pattern. For example, your partner might say, "I see 5, 10, 15, and so on, so I know you were multiplying by 5, or multiples of 5." Show each other your cards and try to guess the number you were multiplying by.

Challenge: Can you think of a number that would represent a pattern on the hundred chart instead of using a number card? You could draw a number line, or use counters to show the pattern. Watch as you multiply and try to guess the number.

Math Talk:

How can you use which operation to use with a key word?
How can you use which operation to use with more than one operation?
How can you use which operation to use with more than one operation?
How can you use which operation to use with more than one operation?
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How can you use which operation to use with more than one operation?

CCSS: Gain familiarity with factors and multiples.

4.OA.A.1 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.

I can recognize prime and composite numbers up to 100.

I can write the factors of each number up to 100.

I can show that a whole number is a multiple of each of its factors.

I can check to see if a given whole number is a multiple of numbers on through 100.

CCSS: Generate and analyze patterns.

4.OA.C.1 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

I can continue a given number or shape pattern.

I can make a number or shape pattern that follows a given rule.

I can explain how different patterns are built.

I can analyze a pattern to determine parts not stated in the rule.

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The Candy Machine

Materials: The Candy Machine game boards in plastic page protectors, vis-a-vis markers, paper towels, The Candy Machine game cards

Directions: Each player takes a Candy Machine game board and a game card. Don't let your partner see your card! Use the card to fill in the candies on your game board. The candy machine takes the number you write on the left side and turns it into the number you enter on the right. (See the example to the right.) When you're done, cover your board with a paper towel (or two, if they're not through). Trade with your partner and try to figure out the number that was on each other's cards. Be sure to explain your thinking. You can earn ten points for guessing correctly on the first try, 5 points for each additional try on the second try, or one point for taking three or more tries. When you're done, pick new Candy Machine game boards, and play again!

Challenge: Leave a blank space on your card. Have your partner must guess the number in the last space.

Math Talk:

What patterns did you notice on the candy machine game board?
How are the numbers on the left side related? The right side?
How would you describe the rule or pattern in your own words?
How would you continue the pattern?
How can finding patterns help you solve real world problems?

CCSS: Generate and analyze patterns.

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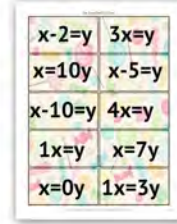
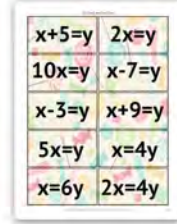
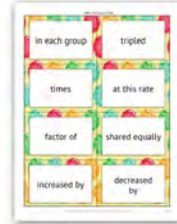
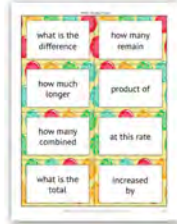
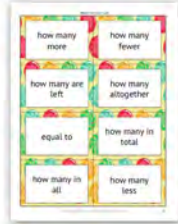
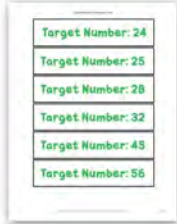
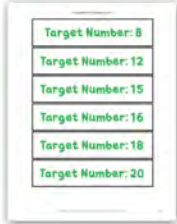
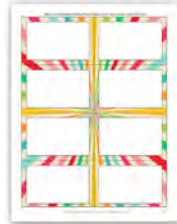
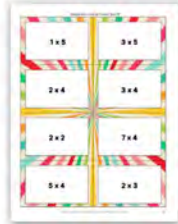
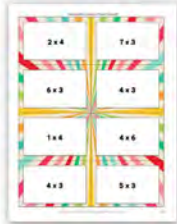
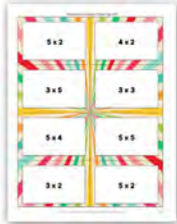
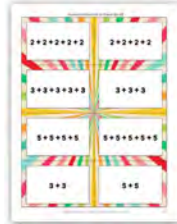
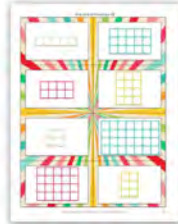
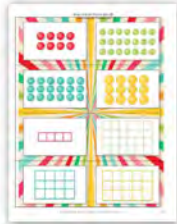
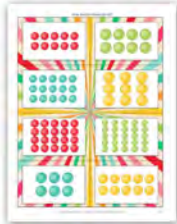
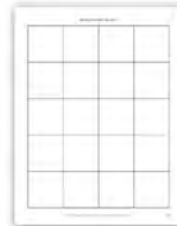
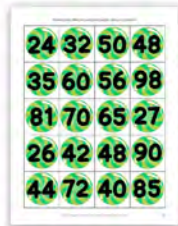
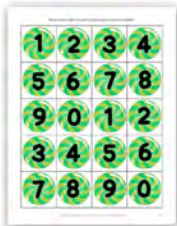
I can explain how different patterns are built.

I can analyze a pattern to determine parts not stated in the rule.

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Game Resource Pages: Cards, Game Boards, Etc.



All Pages in Product

The image displays a comprehensive set of 100 pages for a math partner game product. The pages are organized into several sections:

- Introduction and Overview:** Includes an Important Notice, Table of Contents, and a list of 7 Common Core-Aligned Games.
- Game Instructions and Materials:** Pages titled "Math Partner Games: 4th Gr. Operations & Algebraic Thinking" provide detailed instructions and a list of materials covered.
- Game Cards and Mats:** Numerous pages feature colorful cards and mats for various math activities, including multiplication and division problems, number lines, and target number challenges.
- Mathematical Concepts:** Pages like "The County Machine" and "Solve Me This" focus on specific mathematical skills and problem-solving strategies.
- Visual Aids:** Includes a target number spinner, a number line, and various colorful patterns and grids.
- Final Summary:** The product concludes with a "Math Partner Games: 4th Gr. Operations & Algebraic Thinking" summary page, a list of 7 games designed for Common Core, and a page by Angela Watson, TheCenterStoreForTeachers.com.

Table of Contents

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23	Sweet Word Problems
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32	Gumdrop counters
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56-58	Riddle Me This cards
59	Hundred chart board for Find My Pattern
60-62	The Candy Machine game boards and cards
63-65	Optional score keeping sheets, blank work mats, and card pile organizers

List of Games and Skills Covered

Pg	Game Title	Main Skills	CCSS
20	Product Spin Off	Using multiplication strategies; interpreting multiplication as a comparison	4.OA.A.1
21	Target Number Challenge	Using the four operations to solve problems; using multiplication strategies; interpreting multiplication as a comparison	4.OA.A.1
22	What's the Story?	Using all four operations to solve one and two step word problems	4.OA.A.2 4.OA.A.3
23	Sweet Word Problems	Using all four operations to solve one and two step word problems	4.OA.A.2 4.OA.A.3
24	Riddle Me This	Identifying factors, multiples, and prime/composite numbers	4.OA.B.4
25	Find My Pattern	Identifying factors, multiples, and prime/composite numbers; generating, continuing, and analyzing patterns	4.OA.B.4 4.OA.C.5
26	The Candy Machine	Generating, continuing, and analyzing patterns	4.OA.C.5

Notes About Materials

You can use the gumdrop counters on page 32 as counters, or use your regular counters. There are optional card organizers, work mats, and score keeping sheets to help students keep their materials organized during game play.

Larger number cards are included on page 33 if you want to make a game more challenging. You can use them whenever game materials just say “number cards”: I don’t recommend using them when the game materials specify just using cards 1-10 or something similar.

Be sure to print the game cards on stock paper or mount them on construction paper so students can’t see through them!

The only items you need to supply in addition to the printables from this packet are:

- Class set of pencils, crayons/colored pencils, and paper or math journals (or use individual dry erase boards)
- Half class set of [clear spinner overlays](#), or paperclips to make your own spinners ([directions here](#)).

Game Assembly Instructions

Pg	Game	Materials
20	Product Spin Off	Product Spin Off spinner, array picture cards, multiplication cards, repeated addition cards (challenge only) (print pgs 33-43)
21	Target Number Challenge	One Target Number Challenge game board to share, Target Number Challenge cards, number cards 1-10, blank paper or math journals, pencils (print pgs 27, 44-46)
22	What's the Story?	What's the Story cards, number cards, pencils, math journals or paper (print pgs 27-30, 47-49) (optional: blank work mat for organizing cards pg 63)
23	Sweet Word Problems	One copy of each Sweet Word Problems game board, number cards (print pgs 27-30, 50-55)
24	Riddle Me This	Riddle Me This cards in plastic page protectors, Vis-à-vis markers, paper towels, number cards (print pgs 27-30, 56-58)
25	Find My Pattern	Two copies of the hundred chart, counters, number cards 1-10 (print pgs 27-30, 59)
26	The Candy Machine	The Candy Machine game boards in plastic page protectors, Vis-à-vis markers, paper towels, The Candy Machine game cards (print pgs 60-62)

Math Partner Games: 4th Grade Operations & Algebraic Thinking

7 Common Core-Aligned Games

How do math partner games align with CCSS?

The games in this PDF were created for (not retro-fitted to) the Common Core State Standards (CCSS) for fourth grade math. There are 2-3 games for each of the operations and algebraic thinking standards. The table on page 15 shows you which standard(s) are addressed in each game.

The standards as well as “I Can” statements with child-friendly language are included in each game’s instructions. Since there isn’t one set of “I Can” statements that all states use, I’ve chosen terminology that I think is simple and easy for you to make sense of.

Additionally, the “Model and reinforce mathematical practices” domain of the CCSS is integrated in each and every game through the actual game play, the “math talk” discussion/reflection prompts, or both. (You can find [more math talk questions here](#).) The standards for math practices are:

- MP1 Make sense of problems and persevere in solving them.
- MP2 Reason abstractly and quantitatively.
- MP3 Construct viable arguments and critique the reasoning of others.
- MP4 Model with mathematics.
- MP5 Use appropriate tools strategically.
- MP6 Attend to precision.
- MP7 Look for and make use of structure.
- MP8 Look for and express regularity in repeated reasoning.

What's a math partner game?

Similar to math tubs, the math partner games I use are two-player games that reinforce a variety of math skills, including problem solving and logical thinking. The games are open-ended and easily differentiated and individualized.

Are math partner games the same as math centers?

It depends on your definition. Typically in my classroom, partner game time is separate from center time because centers are independent activities while math games are multi-player and encourage discussion and collaborative problem solving. However, if you have students complete math centers cooperatively, then math partner games would be a perfect fit!

There IS one major difference between the partner game arrangement I describe here and typical centers. When kids are in centers, usually you (the teacher) are working with a small group. Since you're busy teaching, it's hard to tell whether the rest of the class is actually learning anything in their centers and games or if they've just mastered the art of looking busy.

During the math partner game set up I recommend here, you are *not* responsible for small group instruction, so you're free to facilitate students' thinking and engage kids in conversations about what they're learning.

What are the advantages of using math partner games?

Math partner games are a great opportunity for the teacher to:

- Take anecdotal notes and/or assess children in meaningful scenarios
- Support students who are struggling academically as well as socially, because you'll have the time to help solve disputes and model social problem solving skills
- Challenge high-achievers who are easily bored
- Allow students to actively construct knowledge through collaborative hands-on activities
- Model logistical thinking and encourage discussion (connecting words and math is difficult for many students)
- Provide problem solving and math skill practice that kids really enjoy

How many times do kids play the same game?

Generally, students play the same game for an entire week so that they have time to master the rules. Once they understand the basics, they can really start focusing on the targeted math skills, determining patterns and strategies, and engaging in higher-level thinking discussions.

For how long do kids play the games?

I prefer to have pairs of students work with each game for 7-15 minutes daily. Though some games naturally lend themselves to the shorter or longer end of that range, ten minutes is pretty optimal and a good target to aim for.

Though most of the games end only when time is up, ALL of the games are open-ended enough that students won't need to ask, "I'm done, now what should I do?" The instructions also provide Challenge activities which you can have students do if they have time, or you can assign them to certain students for differentiation. I usually have the class do the extra challenge for the last two or three days of the week, unless they haven't yet shown proficiency with the basic level of game play.

There are also Math Talk questions which you can have students reflect on in writing using math journals or other formats. Once a week (or even more often), you may want to allow several extra minutes for students to talk or write about the Math Talk questions.

How do I make time for math partner games?

There are many ways to incorporate game time into your schedule. I prefer using them daily for up to 15 minutes, but I've also used them as fun math practice on Friday afternoons for about 25 minutes each week.

For awhile, my district required that I conduct standardized test prep/spiral review practice with the kids for 20 minutes at the start of the math period. I chose to follow that with 10 minutes for math partner games, and then launched into my math concept/skill lesson for the day. The active, hands-on partner games were the perfect way to clear students' heads before instruction resumed.

The fact that math partner games are great for breaking up long periods of direct instruction and guided practice is increasingly important as the CCSS

moves us toward deeper study of math concepts. Many teachers now have longer math periods and are expected to spend several weeks on the same topic (whereas before, we might have only had several days per concept). Math partner games are a way to fill that extra time with meaningful opportunities for students to explore and talk about math concepts.

How are kids paired up?

I recommend that math game partners be selected by the teacher (rather than self-selected) so that students are paired homogeneously. This is important because if you have heterogeneous pairs (mixed ability levels), the less advanced child will lose frequently and get frustrated. Kids only enjoy playing the games if they regularly experience success and feel like they have a fair shot at winning.

Another reason why I think it's better to pair kids with similar ability levels for math partner games is so that game play can be differentiated. You'll be able to spend more time supporting your struggling students since they'll be working together. And having your highest-performing kids paired together will be extremely valuable for them because they can play quickly and enjoy being challenged in a way that doesn't always happen during the average mixed-ability cooperative activity. Since most of us have students work in mixed-ability groups throughout the school day, math partner games can be a rare opportunity for students to work one-on-one with another child who's learning at a similar pace.

I also think it's important to consider students' personalities when pairing. I don't like to pair kids who know each other too well because they'll play around, but if they don't like each other or are both very shy or competitive, there can be problems as well.



Pages 18 and 19 are blank partner lists which you can fill out and display so students know who their partners are. Before sending students off to play the games, I usually have the class look at the list and raise their hand if their partner is not in the room so that I can re-partner students for the day as needed.

I generally make changes to the partner list based on my observations and student input. I've found that some kids want to keep the same partner for months, but most kids want to change partners every few weeks, and I try to accommodate them either way so they enjoy the games more.

For variety, I do allow students to pick any partner they want on special occasions (short weeks, days when we have an assembly and the math block is cut short, etc.) as well as when we go back to review previously taught skills. Some kids choose to play with friends that are more or less advanced than them, and that allows them to experience the game in a different way. Interestingly, I've found that about half the students still choose their regular math game partner: the kids tend to get into certain rhythms and playing styles and enjoy the familiarity.

Can students choose the game they want to play?

Yes! After a few weeks when you have introduced several games, you can let each set of partners choose one of the games to play, and have the class practice playing different games at the same time. I highly recommend doing that occasionally throughout the year, such as:

- ◆ Short weeks when you only have school for 2-3 days and therefore don't want to introduce a new game.
- ◆ When you want to review a variety of skills and concepts. Do two or three 10 minute sessions back to back, and let kids change their games for each session.
- ◆ When a lot of students absent: let kids pick their own partners and own games for a special treat.
- ◆ At the end of the year when you have already introduced all the games.

When students are all playing different games, you may need to have printed directions available in case kids forget the rules. You should also talk with students about what they should do if they get stuck.

How do I use the "Challenge" section of the games?

You can offer the challenge as an option for students if they'd like to try it, or assign it only to certain students to differentiate game play. Another idea is to use that section after students have played the regular way several times, or later in the school year when reviewing previously taught skills.

How do I use the “Math Talk” section of the games?

You can teach students to talk about these questions with their partners, or ask the questions yourself as an informal assessment while observing game play. Or, use the Math Talk questions to facilitate mini-lessons and/or debriefing sessions before and after game play. The questions also work well as math journal prompts and written reflection topics.

How do I introduce math partner games to my class?

I strongly recommend that you model how to play the games FIRST.

Introduce the games one at a time to your class, one game per week. During the modeling, you can demonstrate the basics of the game by playing against a volunteer. I used an Elmo (document camera) to help with this, placing the pieces under the Elmo so the class could see what was happening. I then guided two other volunteers as they played together for the class. This technique is a great way to model mathematical thinking and reasoning and draw attention to the math strategies you want students to use.

Right after the modeling/demonstration, release students to try playing the game with their partners. If you see a lot of kids making the same mistakes or demonstrating major misconceptions, end the game time a little early. Talk about it afterward, and do more modeling the next day.

For younger students (and for most classes at the beginning of the year), I’d suggest modeling the game on the first *two* days students play it. The first day, your demonstration should be very in-depth and focus on what to do if kids get stuck or disagree with one another, as well as what to do when they’re finished and how to clean up the game properly. The second day’s demonstration can focus more on applying math skills and strategies. I often do two or three days of demonstrations/skill mini lessons with more complex games, even if it’s just quick refresher with two student volunteers before releasing the rest of the class to play.

Why not have kids play all different games at once, like in math centers?

I like having the whole class play the same game because you can conduct mini-lessons/strategy discussions around shared experiences before and after game play. Also, since students play the same game for a week, you have lots of targeted opportunities for identifying and addressing misconceptions and scaffolding student learning.

Could the games also be used as centers?

Sure! Its totally your choice how to use the games—they'd work just fine in traditional centers, math tubs, math work stations, etc. You could choose to play some of the games using the system I describe here, and place the rest in centers for kids to explore independently. **I do still recommend you model game play for the students before expecting them to play on their own.**

How do I open the math partner game time?

When you first introduce a game at the beginning of the week, you'll start your math partner game time with modeling. By mid-week, you can start the time with a mini lesson focusing on the higher-order thinking skills you want students to develop. You can pose particular scenarios that might arise during game play and have students suggest strategies for solving them, or mention a challenge that one team of students experienced the day before and have students talk about what they would do. You can also mention any classroom management issues that arose, or remind students of skills and strategies you'd like them to apply.

How do I close the math partner game time?

You can end the math partner game time with a whole-class debriefing session. Students can talk about what strategies worked well and which didn't. Use the Math Talk questions provided for each game to help you facilitate the discussion. Students can also reflect on these questions in writing (i.e. in math journals), or by talking with their partner (or a different partner in a turn and talk or think-pair-share activity.)

You can switch up your approach as needed, or make a schedule and debrief in a different way each day of the week. Again, the conversations will be more superficial at the beginning of the week and will move toward critical thinking as students have more experiences with the game.

How do I store and organize math partner games?

You'll need to have *half* a class set of all your game cards and most of the materials, such as spinners. In other words, if you have 26 students, you need 13 sets of each game. In many games, students share a game board, so you only need a half class set of those, but in other games, students will each need their own board.

The type of organizational system you choose should be based on the materials you have and the size/type of your math games. If you have lots of larger materials that you're using in addition to the games in this PDF, you'll need to consider that in your planning. I'll share with you the systems I've used over the years, and then explain what I think is the best way to organize and distribute this particular set of geometry games.

My first year using math partner games, I simply had a milk crate full of plastic baggies with materials inside. As my collection of games grew, I started keeping the plastic baggies in plastic tubs (containers). Some were the small kind you'd find at the dollar store and some were larger like dishwashing tubs, depending on the size of the materials that went inside.



Eventually I found the toy organizer you see pictured above. (Mine was from Big Lots, but I believe you can still get something similar at Target.) I used the large, colorful bins to hold the partner games my class was currently using. There was one bin for each game, and each bin held the set of materials for that game. For most games, I had a plastic baggie or manila envelope for each pair of students, so the bin for a certain game

usually had about a dozen baggies or envelopes inside. The games for units we weren't currently studying were hidden away in cabinets or other plastic containers.

I also kept one set of each game in a hanging shoe organizer, which you could see hanging on the door in the previous page's picture and as a close up below. Later in the school year, I'd allow students to choose the game they wanted to play. Each set of partners would simply walk over to the shoe organizer, pick a game and take out the materials, then return them after game play. I also allowed students to use the games in the shoe organizer at other times in the day (before and after school, during indoor recess, etc.) We called it "Free Choice Math Partner Games." I had a milk crate to hold the games that were too large to fit in the shoe organizer.



How do I pass out and collect the games?

For the games in this PDF, I recommend using just two baggies for each pair of students, one for the number cards/operation sign cards/FLIP cards, and one for the arrays/repeated addition/multiplication cards. There will be times when you want kids to use multiple sets of cards during a single game, so having similar cards altogether makes sense and saves you plastic baggies. It's not a bad idea to mark some place on each card with a symbol, color, or number to indicate which bag it came out of, in case a stray piece is found on the floor.

Each day as you begin math partner games, write on the board which cards students should take out of the baggies. They can leave the rest of the cards in the bag (or even choose to include them if they decide with their partners to make the game more challenging.)

Each set of game boards could be kept in a single file folder or manila envelope: ditto with other materials needed. When you're ready for students to play a game, place the file folder full of game boards (or other materials) and the corresponding set of baggies on a table. Have all the "Partner 1s" in your math partner list (see pages 18-19) come up to the table in an orderly line and take one of everything. The Partner 2s are responsible for returning the materials to the same spot after game play.

If you practice your expectations for this, the system for distributing and collecting game materials will go very, very quickly. Sometimes it helps to set a timer for one minute: at the end of the minute, all the partner 1s should have the necessary materials and both partners should be in their "spot" in the room where they play the math partner games. If there is any pair of students who has not yet begun game play when the timer goes off, you can assist them with whatever they need to get started.

How can I save ink, paper, and time?

Some of the same cards and game boards can be used for multiple games, so that helps a lot. Here are some other tips to help you save ink, paper, and time as you create the games:

✓ **Pick the games you want to use, and THEN print.** You'll probably find that there are more than enough games here and you won't have time to implement them all, so don't print anything until you're sure you'll use it.

✓ **Be selective about the game resources you print.** There are multiple game boards for some games so you can differentiate game play for students. You might not need them all.

✓ **Use only a digital copy of the game instruction sheets.** You can use an LCD projector with a document camera or interactive whiteboard to project the directions for the class to see if needed. But the only time you'll need a printed copy (other than possibly for yourself) is if you decide to place one copy of the game in a Free Choice Math Partner Game area like the hanging shoe organizer I described, or if you want kids to use the games in math

centers/stations. In those instances, you could print a single copy of the instructions. But, for regular math partner game time, it's not necessary to print the instructions for each pair of kids. You will have already modeled game play for the class multiple times (which means they'll know the game far better than if they'd just read the directions), and you'll be walking around the room facilitating as kids play in case they need help.

✓ **Print most (or all) of the game resources in black and white and have students color them for you. Or, print onto colored paper!** Black and white copies can still be very visually appealing, and you have the option of printing onto colored stock paper or using colored pencils/markers to add interest. You may want to print your class set in black and white, and then make one or two full color copies to use when modeling the game for the class and for later on if you place the games in your math centers or stations. You can let a different pair of students use the full color version each day as recognition of exemplary work in the previous day's math game time.

I'm ready! How do I get started?

Start by figuring out which standards you want students to practice through the games. The table on the next page of this packet tells you which games align to each standard.

Read the instructions for the games you're interested in, and check out the game resources (game boards, cards, etc.). Decide which ones are the best fit for your students' needs, and print! Use pages 16-17 to help you assemble the games and collect any extra materials you might need. Have fun!



BUT WAIT! THERE'S MORE...

I'm **Angela Watson**, the creator of this resource. I'm a National Board Certified Teacher with a masters degree in Curriculum and Instruction, and have 11 years of classroom teaching experience and over a decade of experience as an instructional coach. I currently work as a Productivity and Mindset Specialist in the area of educational consulting. In practical terms, this means I author books, design curriculum, and provide professional development services. Everything I do is centered on sharing more effective, efficient, and enjoyable ways of teaching and learning!

I founded my website ([TruthforTeachers.com](https://www.truthforteachers.com)) in 2003 to connect with other educators. You can now find thousands of ad-free articles and resources there from me and our K-12 teacher-writer's collective.

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