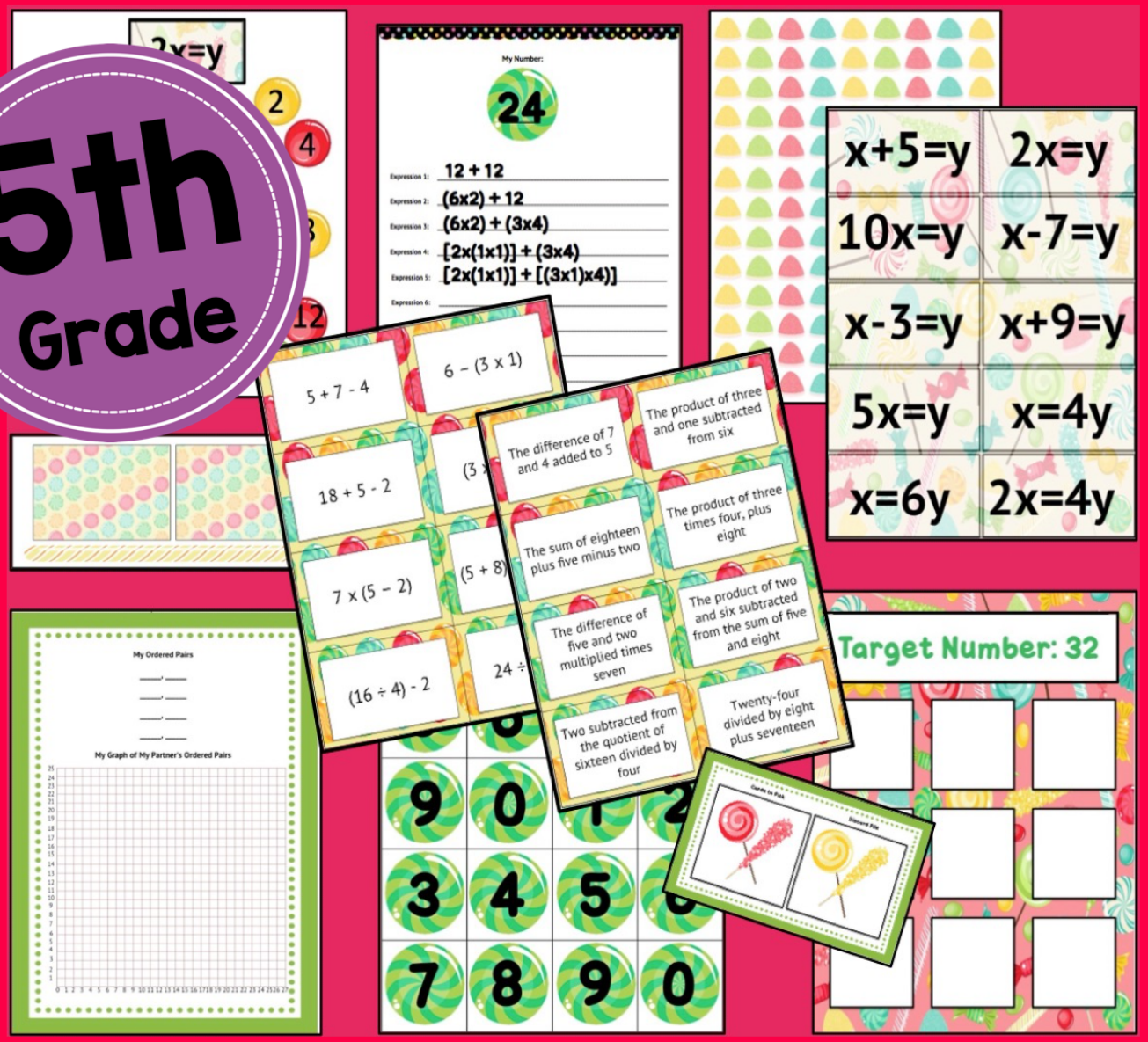
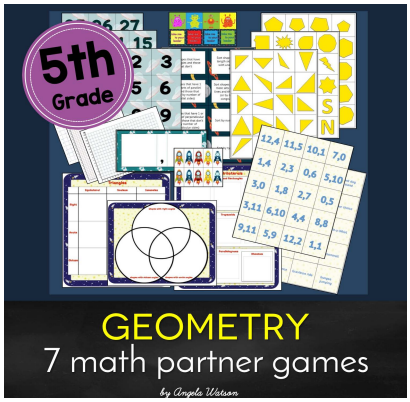


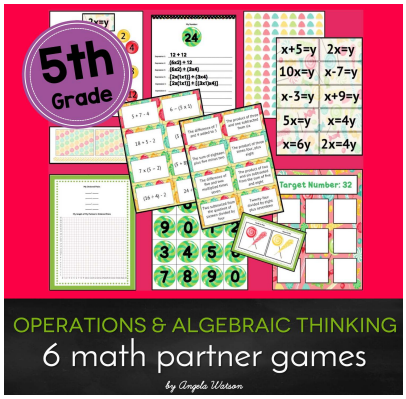
OPERATIONS & ALGEBRAIC THINKING

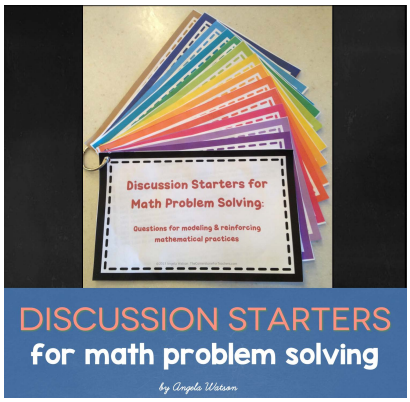
6 math partner games

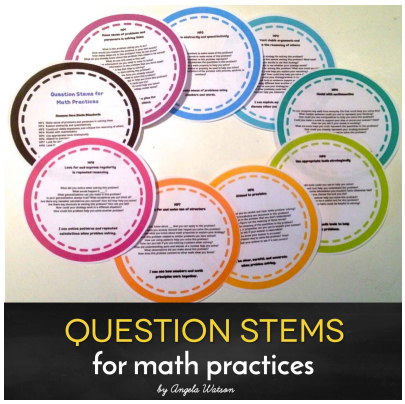
by Angela Watson

Check out the complete product line for 5th grade math!









Target Number Challenge

Materials: Target Number Challenge game boards, Target Number Challenge cards, number cards 1-20, blank paper or math journals, pencils

Directions: Each players chooses one Target Number Challenge card and places it on his or her game board. Turn the number cards face down and deal 9 to each player. Each player puts his or her cards anywhere on his or her board. Then each player tries to write an expression that is equal to the target number. You can use any operation, but each number card can only be used once. Be sure to use parentheses if needed. For example, if the target number is 50, you could take the 6,4,25,10, and 11 cards and write (6x4)+(25-10)+11=50.

When you're done, have your partner check your work while you check your partner's work. You can each earn 5 points for every correct expression you make. After checking your partner's work, see if you can rearrange his or her cards to create a different expression that makes the target number. You can earn an extra 5 points for doing so! Play again until time is up. The person with the most points wins.

Challenge: Instead of just making one expression, see how many different expressions you can create with your cards! Earn 5 points for each one.

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 could you tell when parentheses or brackets were needed?
How did mental math strategies help you play this game?
How did you use order of operations rules to help you play?

CCSS: Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

I can use order of operations including parenthesis, brackets, or braces.
I can evaluate expressions using the order of operations with parenthesis, brackets, or braces.

Game Direction Pages

Target Number Challenge

Materials: Target Number Challenge game boards, Target Number Challenge cards, number cards 1-20, blank paper or math journals, pencils

Directions: Each players chooses one Target Number Challenge card and places it on his or her game board. Turn the number cards face down and deal 9 to each player. Each player puts his or her cards anywhere on his or her board. Then each player tries to write an expression that is equal to the target number. You can use any operation, but each number card can only be used once. Be sure to use parentheses if needed. For example, if the target number is 50, you could use 6,4,25,10, and 11 cards and write (6x4)+(25-10)+11=50.

When you're done, have your partner check your work and explain your partner's work. You can each earn 5 points for each correct expression you make. After checking your partner's work, see if you can change his or her cards to create a different expression that makes the target number. You can earn 5 points for doing so! Play as many rounds as time is up. The person with the most points wins!

Challenge: After making one expression, see if you can find different expressions that create with your cards! 5 points for each one.

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 could you tell when parentheses or brackets were needed?
How did mental math strategies help you play this game?
How did you use order of operations rules to help you play?

CCSS: Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

I can use order of operations including parenthesis, brackets, or braces.
I can evaluate expressions using the order of operations with parenthesis, brackets, or braces.

Expression Go Fish

Materials: Expression cards, expression description cards

Directions: Deal 7 cards to each player, being sure not to look at each other's cards. Put the extra cards in a face down stack. Each player looks at his or her cards and tries to find matches (equivalent expressions.) Place each of your matches face up for your partner to check.

Once you've laid down all your matches, it's time for Expression Go Fish! Ask your partner for the exact amount you need (24, 32, etc.) If your partner has the card you ask for, they must give that card to you, and you must show your partner the match to check. If they don't have it, they say "Expression Go Fish" and you must draw a card from the pile. The first player to [illegible] wins the game! Keep playing until time is up.

Challenge: Make your own expression cards on blank cards! Be sure to have your partner check what you write before the game begins to make sure your matches.

Math Talk:

What strategies did you use for evaluating the expressions?
Were there times when you interpreted expressions without evaluating them? How did you do it?
How can you check (or prove) your answers?
What other expressions could be equivalent?

CCSS: Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

I can use order of operations including parenthesis, brackets, or braces.
I can evaluate expressions using the order of operations with parenthesis, brackets, or braces.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

I can describe the relationship between expressions without calculating them.
I can write numerical expressions for numbers with operation words.
I can interpret numerical expressions without evaluating them.

The Candy Machine

Materials: The Candy Machine game boards in plastic page protectors, Vis-à-Vis markers, paper towels, rules 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 there's room to 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 [illegible] on your card blank. This time, your partner must guess the rule AND fill in the last part of the pattern! Another idea is to form ordered pairs and graph them on a coordinate plane. Instead of showing your partner your candy machine, show him or her your graph and challenge your partner to guess the rule!

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 could you form ordered pairs based on the pattern?
How would represent the ordered pairs on a graph?
How can finding patterns help you solve real world problems?

CCSS: Analyze patterns and relationships.

5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

I can generate two numerical patterns using two given rules.
I can form ordered pairs consisting of corresponding terms for the two patterns.
I can graph ordered pairs on a coordinate plane in first quadrant.
I can explain the relationship between corresponding terms in the two numerical patterns.

Biggie

Materials: Biggie game board for each player, expressions cards

Directions: Turn all the cards face down and deal them equally between players. On the count of three, both players flip over their top card, place it on the game board, and read both expressions. The person with the greatest expression says "Biggie" and gets to keep both cards. (So, if your partner's card reads 8+2+3 and your card reads 10+14, your expression would be greater and you would keep both cards.) Continue playing until there are no cards left. The person with the most cards wins! You can play again until time is up.

Challenge: You can also play the game as "Tiggie" where the person with the smallest expression gets to keep the cards. Or, add an expression description cards to make the game even more challenging (for example, have an equal expression on their cards, keep playing, and the next round gets to [illegible] cards.

Math Talk:

What strategies helped you evaluate the expressions?
Did you use mental math when playing this game?
How did the parentheses help you compare expressions?
How could you tell which person had the greater expression?
How could you prove your answer?

CCSS: Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

I can use order of operations including parenthesis, brackets, or braces.
I can evaluate expressions using the order of operations with parenthesis, brackets, or braces.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

I can describe the relationship between expressions without calculating them.
I can write numerical expressions for numbers with operation words.
I can interpret numerical expressions without evaluating them.

Break It Down

Materials: Break It Down game boards in plastic page protectors, Vis-à-Vis markers, paper towels, number cards 20 and up

Directions: Turn all the number cards face down. Each player takes one and copies it onto his or her game board. Trade boards with your partner and break down the number into an expression. When you're both done, switch back and expand the expression even further, changing only one thing each time (see the example to the right.) Continue doing this until one player can no longer make a more complex expression for a number. Award the other player one point and erase your boards. Continue playing with different numbers until time is up. The person with the most points wins!

Challenge: Choose your own numbers and break them down into expressions!

Math Talk:

How did your knowledge of prime and composite numbers help you when playing the game?
What types of whole numbers did you notice as you played?
What strategies did you use to expand the expressions?
How did you use order of operations to create your expressions?

CCSS: Write and interpret numerical expressions.

5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

I can use order of operations including parenthesis, brackets, or braces.
I can evaluate expressions using the order of operations with parenthesis, brackets, or braces.

5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

I can describe the relationship between expressions without calculating them.
I can write numerical expressions for numbers with operation words.
I can interpret numerical expressions without evaluating them.

What's My Rule?

Materials: What's My Rule? game boards in plastic page protectors, Vis-à-Vis markers, paper towels, rules cards

Directions: Each player takes a game board and rules card. Complete the top ordered pairs portion of your board based on your rules card, but don't let your partner see your work or your card. When you and your partner have both finished this step, take turns reading the number patterns you created while the other graphs the numbers as ordered pairs at the bottom of their own game board. (So, you would read each pair of numbers to your partner while she or he plots them and then switch roles.) See if you can figure out your partner's rule! Be sure to have space on your graph for all the ordered pairs. Think carefully! You can earn 10 points for guessing the rule correctly on the first time, 9 points for guessing the second time, and 8 points for guessing the third time. If you're stumped, have your partner show you his or her card and see if you can guess the rule. If so, you can earn 5 points. Play as many rounds as you can, choose new cards, and play until time is up. The person with the most points wins!

Challenge: Create your own rules cards! Mix them up and trade with your partner has created.

Math Talk:

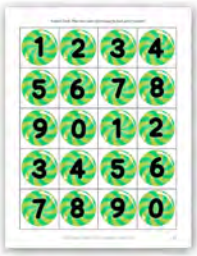
What are the first numbers in your ordered pairs related?
How are the second numbers in your ordered pairs related?
What patterns did you notice as you graphed the ordered pairs?
What strategies did you use to try to guess your partner's rule?
How would you describe the rule or pattern in your own words?
How could you continue the graph based on the pattern?

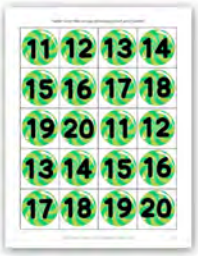
CCSS: Analyze patterns and relationships.

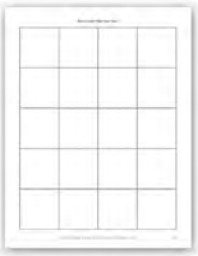
5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

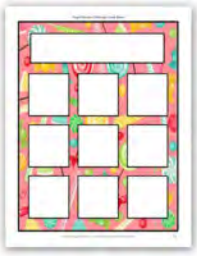
I can generate two numerical patterns using two given rules.
I can form ordered pairs consisting of corresponding terms for the two patterns.
I can graph ordered pairs on a coordinate plane in first quadrant.
I can explain the relationship between corresponding terms in the two numerical patterns.

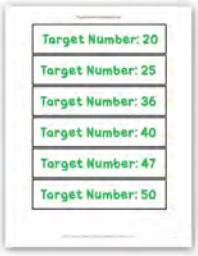
Game Resource Pages: Cards, Game Boards, Etc.

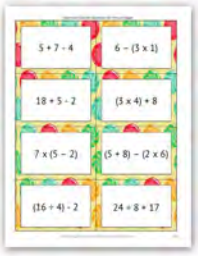


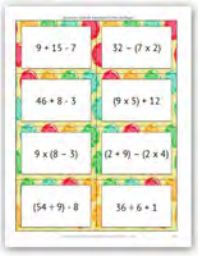


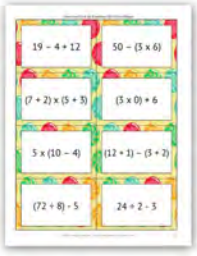


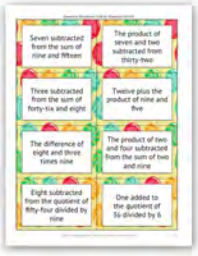


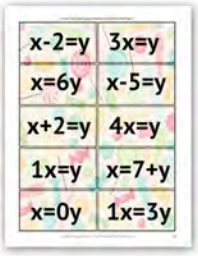


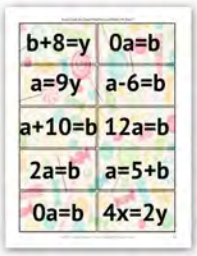












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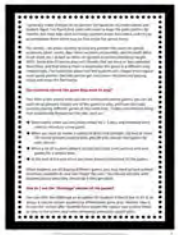

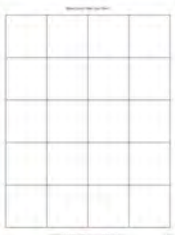

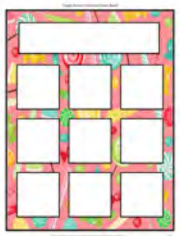

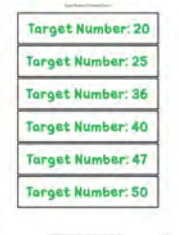

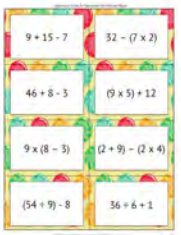

Table of Contents

List of Games and Skills Covered

Pg	Game Title	Main Skills	CCSS
20	Target Number Challenge	Using multiplication strategies; interpreting multiplication as a comparison	5.OA.A.1
21	Expression Go Fish	Using the four operations to solve problems; using multiplication strategies; interpreting multiplication as a comparison	5.OA.A.1 5.OA.A.2
22	Biggie	Using all four operations to solve one and two step word problems	5.OA.A.1 5.OA.A.2
23	Break It Down	Using all four operations to solve one and two step word problems	5.OA.A.1 5.OA.A.2
24	The Candy Machine	Identifying factors, multiples, and prime/ composite numbers	5.OA.B.3
25	What's My Rule?	Identifying factors, multiples, and prime/ composite numbers; generating, continuing, and analyzing patterns	5.OA.B.3

Notes About Materials

There are optional card organizers, work mats, and score keeping sheets to help students keep their materials organized during game play.

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)
- ❑ Class set of of Vis-à-Vis markers
- ❑ Class set of plastic page protectors

Game Assembly Instructions

Pg	Game	Materials
20	Target Number Challenge	Target Number Challenge game boards, Target Number Challenge cards, number cards 1-20, blank paper or math journals, pencils (print pgs 26-27, 31-33)
21	Expression Go Fish	Expression cards, expression description cards (print pgs 34-40)
22	Biggie	Biggie game board for each player, expressions cards (print pgs 34-36, 41)
23	Break It Down	Break It Down game boards in plastic page protectors, Vis-à-Vis markers, paper towels, number cards 20 and up (print pgs 28-29, 42)
24	The Candy Machine	The Candy Machine game boards in plastic page protectors, Vis-à-Vis markers, paper towels, rules cards (print pgs 43-47)
25	What's My Rule?	What's My Rule? game boards in plastic page protectors, Vis-à-Vis markers, paper towels, rules cards Provide graph paper if you want students to graph the largest numbers. (print pgs 44-48)

Math Partner Games: 5th Grade Operations & Algebraic Thinking

6 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 fifth grade math. There are at least two 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.

Math Game Partners

Partner 1	Partner 2
Gabriella	Fadlaine
Angel	Claritza
Rolando	Lucas
Mabelin	Ana Jennsy
Nickolas	Jerrell
Manny	Peterson
Amy	Keisha
Carlo	Anna
Isaiah	

6 Minute Solution Partners

	Partner 1	Partner 2
A	Gabriella	Angel
B	Claritza	Amy
C	Fadlaine	Keisha
D	Peterson	Manuel
E	Isaiah	
F	Rolando	Lucas
G	Nickolas	Mabelin

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 2's 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!

ANGELA WATSON'S
truth *for* teachers

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**) 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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