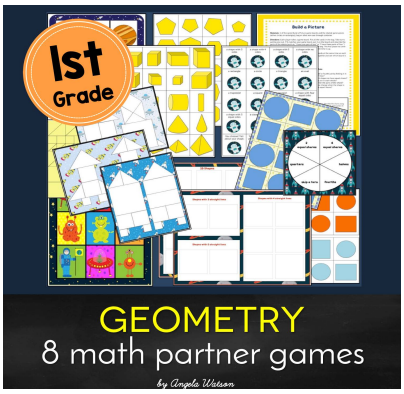
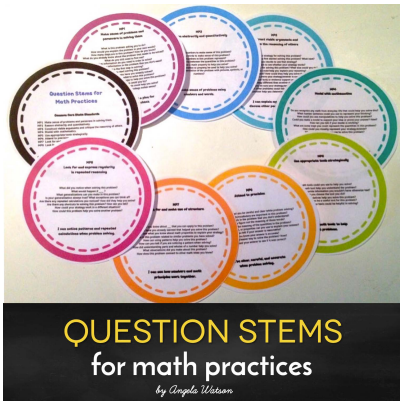
GEOMETRY

8 math partner games

by Angela Watson

Check out the complete product line for 1st grade math!





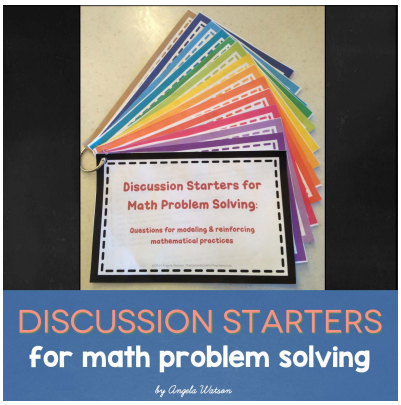


Table of Contents

Shape Sort

Materials: 2 of the same game board for Shape Sort, 2D and 3D Shape cards, Shape Sort Game cards (with aliens and "Take Me to Your Leader" on them)

Directions: Give each player one game board. Mix up the 2D and 3D cards with the Shape Sort cards and put them all in one face down stack. Take turns flipping over a card and deciding where it belongs on your game board. If a card does not belong anywhere on the board, put it in the discard pile. Cards with aliens on them are "wild cards" that can go anywhere on your board, and cards with "Take Me to Your Leader" mean you skip a turn. The first player to fill their game board wins! You can play again until time is up.

Challenge: Choose a different game board than your partner and see which board gets completed first! Or, use the blank game boards. Decide with your partner which attributes you would like to use during game play and label the game boards yourselves!

Math Talk:

How did you decide where to place your cards on the board?
How can you check (or prove) your answers?
What attributes do all the shapes in a section have in common?
How are the shapes within a section different from each other?
In what other ways can shapes be sorted?

CCSS: Reason with shapes and their attributes.

1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes; build and draw shapes to possess defining attributes.

I can classify shapes by their attributes.

Geometry Go Fish

Materials: 2D Shape cards (or the 3D Shape cards)

Directions: Deal 7 cards to each player, but don't look at each other's cards. Put the extra cards in a face down stack. Each player looks at his or her own cards and tries to match two of the same shape. Lay down each of your matches face up for your partner to check and explain why you think they are matches (for example, "Both these is little and one is big, but they are both triangles because they both h sides.")

Once you have laid down all your pairs, it's time for Geometry Go Fish partner for the type of shape you need. If your partner has it, th it to you, and you can lay down the match for them to check. If they say, "Geometry Go Fish" and you must draw a card from the first player to run out of cards wins the game! Keep playing until time

Challenge: Play the game using 2D and 3D shapes tog Or, make the game even more challenging by describing a shape's a when asking the other player for a match, instead of just naming the sh as, "Do you have a shape that is round like a ball(?").

Math Talk:

How can you tell if two cards have the same shape?
How do two shapes have the same name but look different?
What are the attributes that make a shape?
What attributes do not make a shape?
In what ways are all 2D shapes alike?
In what ways are all 3D shapes alike?

CCSS: Reason with shapes and their attributes.

I can identify attributes that make a shape.
I can identify attributes that do not make the shape.

Shape Sort

Materials: 2 of the same game board for Shape Sort, 2D and 3D Shape cards, Shape Sort Game cards (with aliens and "Take Me to Your Leader" on them)

Directions: Give each player one game board. Mix up the 2D and 3D cards with the Shape Sort cards and put them all in one face down stack. Take turns flipping over a card and deciding where it belongs on your game board. If a card does not belong anywhere on the board, put it in the discard pile. Cards with aliens on them are "wild cards" that can go anywhere on your board, and cards with "Take Me to Your Leader" mean you skip a turn. The first player to fill their game board wins! You can play again until time is up.

Challenge: Choose a different game board than your partner and play until both boards gets completed first! Or, use the blank game boards. Decide with your partner which attributes you would like to use during game play and label the boards yourselves!

Math Talk:

How did you decide where to place your cards on the board?
How did you check (or prove) your answers?
What attributes do all the shapes in a section have in common?
How are the shapes within a section different from each other?
In what other ways can shapes be sorted?

CCSS: Reason with shapes and their attributes.

I can distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes; build and draw shapes to possess defining attributes.
I can classify shapes by their attributes.

One Shape Two Ways

Materials: One Shape Two Ways cards, 2D shape manipulatives, pencils, paper or math journals

Directions: Put the cards in a face down pile. Take turns picking a card from the One player uses manipulatives to show the shape on the card and the other draws (or traces) the shape. Check each other's answers to see if you're correct each player one point for each right answer. Now switch roles so you're drawing and using manipulatives to make the shape on the card. with the most points wins!

Challenge: See if you can draw or build TWO different exa the shape on your card! You can earn a point for each correctly drawn

Math Talk:

Are some ... harder to draw than others? Why?
Can a sha... in more than one way? How and why?
How is you... alike and different from your partner's shape?
How would this game be different if we used 3D shapes?
How are 3D shapes different from 2D shapes?

CCSS: ... with shapes and their attributes.

I can distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes; build and draw shapes to possess defining attributes.

I can build shapes to show attributes.
I can draw shapes to show attributes.

Shape Show Off

Materials: 2D Shape cards and 2D manipulatives (or use 3D cards and manipulatives)

Directions: Put all the cards in a face down pile. Each player picks 5 cards without letting their partner see, and makes a design (builds a composite) that uses the shapes on their cards. When both players are done, show the new shapes to each other and try to guess the shapes that were on each other's cards. Earn one point for each shape you guess correctly. Earn an extra point for finding any new shapes that were made (such as two rectangles put together to make a square.) Keep playing until you run out of cards or time is up. The person with the most points wins!

Challenge: See if you can make a design using 8 cards, or even 10! You can also choose your own shapes. See if your partner can name all the shapes you used!

Math Talk:

How are your original shapes and your composite shape alike?
How are they different?
Can the same shapes be used to make more than one composite shape? How and why?
How did you use what you know about attributes to guess what shapes were on your partner's cards?
How is your composite shape alike and different from your partner's?

CCSS: Reason with shapes and their attributes.

1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half- circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
I can recognize that shapes can be composed and decomposed to make new shapes.
I can describe attributes of original and composite shapes (combined shapes).
I can determine how the original and created composite shapes are alike and different.
I can create composite shapes.
I can compose new shapes from a composite shape.

Rocket Race

Materials: One Rocket Race Game Board for both partners to share, Rocket Race Manipulatives in a bag or other non-see-through container

Directions: Each player chooses one rocket on the game board. Take turns reaching into the bag and pulling out a piece. See if you can lay it on a matching space on your rocket. If you can't, put it back in the bag. The first person to finish their rocket wins the game! Play again until time is up.

Challenge: Are there other shapes that can fit on your board? For example, you could try placing two triangles together instead of one square. But be careful, once you lay a piece down on your board, you can't put it back later, so think carefully about the shapes you choose to use! You can also play with a ... game board to yourself. Race to fill up both of your rockets before your partner fills his or her rockets!

Math Talk:

Which small shapes can be put together to equal one large shape?
Do the attributes of a shape change when you turn it? Why or why not?
What new shapes can you create when building your rockets?
How are the shapes in your rocket different from your partner's?
How are they alike?
In what other ways can shapes be composed to make new shapes?

CCSS: Reason with shapes and their attributes.

1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half- circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
I can recognize that shapes can be composed and decomposed to make new shapes.
I can describe attributes of original and composite shapes (combined shapes).
I can determine how the original and created composite shapes are alike and different.
I can create composite shapes.
I can compose new shapes from a composite shape.

Equal Shares Challenge

Materials: Two game boards for the Equal Shares Challenge (placed in page protectors), Vis-à-Vis markers, felt squares or other erasers for the page protectors, spinner

Directions: Each player takes one game board. Take turns spinning the spinner dividing a shape on your board into the number of equal parts shown. Use words to tell what you are doing (like "I spun fourths, so I am going to m... equal parts in this rectangle.") The first player to divide all the shapes on t... wins! Play again until time is up.

Challenge: Each time you divide a shape, describe what you ... using different words than the spinner shows. For example, if the ... says "2 equal parts", you would say, "I am dividing my shape into halves."

Math Talk:

What does it mean to divide or partition a shape?
What strategies do you use to partition your shapes?
Which are harder to divide into equal shares, rectangles or circles? Why do you think that is?
Are there ways to divide your shape equally? How?
How can you tell if a shape is divided into equal shares?
Is it important that the shares are equal?
Do two pieces of equal shares need to have the same shape? Why or why not?

CCSS: Reason with shapes and their attributes.

1.G.3 Partition circles and rectangles into two and four equal shares; describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
I can identify when shares (parts) are equal.
I can identify two and four equal shares (parts).
I can describe equal shares (parts) using vocabulary.
I can describe the whole as two of two or four of four equal shares (parts).
I can justify why dividing (decomposing) a circle or rectangle into more equal shares (parts) creates smaller pieces.

Build a Picture

Materials: 2 of the same Build a Picture game boards and the related game pieces (either circles or rectangles), bag or other non-see-through container

Directions: Each player takes a game board. Put all the cards in the bag. Take turns pulling one out. If it matches your game board, put it on the board and describe parts of the whole (such as, "I have one part of two" or "I have three parts of ... If you can't use a card on your board, put it back in the bag. The first player to ... their whole game board wins the game! Play again until time is up.

Challenge: Play with the rectangle and circle game boards at the ... so each player has two boards! Put all the pieces in the bag together ... each board is covered first.

Math Talk:

Could you tell if a piece ... half or fourth just by feeling it in the bag? How?
What are some different ... each shape can have equal shares?
How many equal parts are in each whole?
Are there ways to describe the parts of the whole?
How does the size of each piece change when the shape is divided into more equal shares?

CCSS: Reason with shapes and their attributes.

1.G.3 Partition circles and rectangles into two and four equal shares; describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
I can identify when shares (parts) are equal.
I can identify two and four equal shares (parts).
I can describe equal shares (parts) using vocabulary.
I can describe the whole as two of two or four of four equal shares (parts).
I can justify why dividing (decomposing) a circle or rectangle into more equal shares (parts) creates smaller pieces.

Equal Shares Match Up

Materials: Spinner, Equal Shares Match Up paper (cut in half, one half for each partner), pencils, scissors

Directions: Take turns spinning the spinner. For each spin, both players partition a shape on their papers into that amount of equal shares. Be sure to check each other's work and explain your thinking!

When you're done, cut apart the cards you made, mix them up, and ... face down. Take turns flipping over two cards at a time to try to find ... you get a match, keep the cards. If you don't, flip them back over and ... player take a turn. The person with the most matches wins! You can ... with the same cards until time is up.

Challenge: Try creating more cards so that there are even more matches to find! As you find matches, tell your partner why the cards ... (such as, "These cards both have 4 equal shares.")

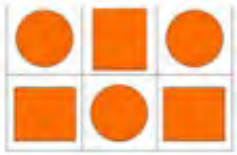
Math Talk:

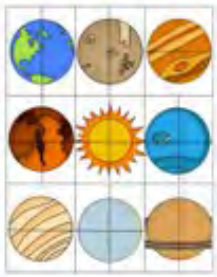
Why is it important ... shapes are divided into *equal* shares?
How else can a shape be divided into equal shares?
Do two pictures ... equal shares need to have the same shape? Why or why not?
How many equal parts are in the whole?
How does the size of each piece change when you divide a shape into more equal shares?

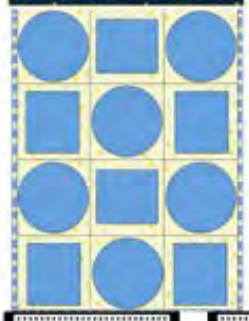
CCSS: Reason with shapes and their attributes.

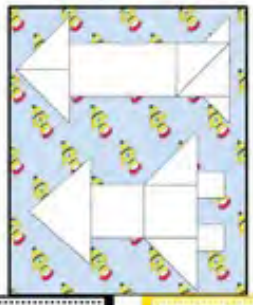
1.G.3 Partition circles and rectangles into two and four equal shares; describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
I can identify when shares (parts) are equal.
I can identify two and four equal shares (parts).
I can describe equal shares (parts) using vocabulary.
I can describe the whole as two of two or four of four equal shares (parts).
I can justify why dividing (decomposing) a circle or rectangle into more equal shares (parts) creates smaller pieces.


2 equal shares
4 equal shares
quarters
halves
skip a turn
fourths










Math Partner Games:
1st Grade Geometry


Build a Picture


Shape Sort


Dot Pixels
Player 1
Player 2


Geometry On Path


Equal Shares Match Up

One Shape Two Ways

Picture Puzzle

Math Partner Games:
1st Grade Geometry

Equal Shares Challenge

Shape Show Off!

List of Games and Skills Covered

Pg.	Game Title	Main Skills	CCSS
20	Geometry Go Fish	Identify shapes; identify attributes that do and not make a shape	1.G.1
21	Shape Sort	Classify shapes by their attributes	1.G.1
22	One Shape Two Ways	Build and draw shapes to show attributes	1.G.1
23	Shape Show Off	Compose and decompose shapes to create new shapes and composite shapes; analyze how the original and composite shapes are alike and different	1.G.2
24	Rocket Race	Compose and decompose shapes to create new shapes and composite shapes; analyze how the original and composite shapes are alike and different	1.G.2
24	Equal Shares Challenge	Identify when parts are equal; identify equal shares; describe equal shares; partition shapes into equal shares	1.G.3
25	Equal Shares Build a Picture	Identify equal shares; describe equal shares	1.G.3
26	Equal Shares Match Up	identify equal shares; describe equal shares; partition shapes into equal shares	1.G.3

Game Assembly Instructions

Pg	Game	Materials	Instructions
20	Geometry Go Fish	2D Shape cards (or the 3D Shape cards).	Print and cut apart pgs 28-32.
21	Shape Sort	2 of the same game board for Shape Sort, 2D and 3D Shape cards, Shape Sort Game cards (with aliens on them).	Print and cut apart pgs 28-40. Choose a game board type. Take out any cards you don't want students to use.
22	One Shape Two Ways	One Shape Two Ways cards, 2D shape manipulatives (such as Attribute Blocks), pencils, paper or math journals. Print pg 41.	Print and cut apart pg 41. You may also print the blank cards on page 28 to make your own cards.
23	Shape Show Off	2D Shape cards and 2D manipulatives (or use 3D cards and manipulatives)	Print and cut apart pgs 28-32.
24	Rocket Race	One Rocket Race Game Board for both partners to share, Rocket Race Manipulatives in a bag or other non-see through container	Print and cut apart pgs 47-51. Choose a game board. Put cards in an opaque container.
25	Equal Shares Challenge	Two game boards for the Equal Shares Challenge (placed in page protectors), Vis-à-Vis markers, felt squares or other erasers for the page protectors, spinner	Print pages 42 and either 53 or 54. Cut apart Assemble spinner.
26	Equal Shares Build a Picture	2 of the same Build a Picture game boards and the related game pieces (either circles or rectangles), bag or other non-see through container	Print pgs 43-44 or 45-46 and cut apart. Put the game pieces in the opaque container.
27	Equal Shares Match Up	Spinner, Equal Shares Match Up game board, pencils, scissors	Print pg 52 and cut apart so each partner has 1 of the boards. Print pg 53 or 54. Assemble spinner.

Notes About Materials

Several games have multiple board game options and spinner options. You can choose the ones that best meet your class' needs as a whole, or differentiate the games by selecting game supplies based on individual student needs. Each of the spinners is available in a large and a small version, so you can print whichever one you prefer.

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

Remove any 2D or 3D shape cards you do not want students to work with.

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 page protectors (or you can laminate items)
- ❑ Class set of Vis-à-Vis (or dry erase) markers for writing on page protectors
- ❑ Class set of felt squares, socks, or other "erasers" for page protectors
- ❑ Class set of pencils, crayons/colored pencils, and paper or math journals (or use individual dry erase boards)
- ❑ Class set of 2D shape manipulatives (such as attribute blocks)
- ❑ Class set of 3D shape manipulatives (optional)
- ❑ Class set of opaque bags, envelopes, or other containers to hold cards (half the class set for the Build a Picture game and half for Rocket Race)
- ❑ Half class set of clear spinner overlays, or paperclips to make your own spinners (directions here).

Please Note Before Purchasing:

These games are designed to be introduced and modeled by the teacher before releasing students to play on their own. **Because the games are rigorous and not basic matching/sorting activities, the directions will probably be too difficult for most 1st graders to read and follow independently if you have not previously shown them how to play.** Once you have modeled game play for your class (as explained in the beginning pages of this packet), your students will be able to play the games on their own. A sample page of the game directions can be found on the next page.

Also, please note that I have adapted each game concept to meet the level of rigor required at the corresponding grade level, and no two games are exactly alike. However, because there is some overlap in the geometry standards between grades 1-3, **some of the games and materials in the 1st, 2nd, and 3rd grade geometry products are very similar.** Please keep this in mind when considering whether to purchase games for multiple grade levels.

Math Partner Games: 1st Grade Geometry

8 Common Core-aligned games for teaching 2D and 3D shapes, composite shapes, and equal shares!

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 first grade math. There are 2-3 games for each of the geometry 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 are 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 2D shapes cards and one for the fractions/shares of a whole/equal shares 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, like the spinners. 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 and spinners 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.

Check out my other resources below:

PODCAST | COURSES | BOOKS

IN-PERSON PD | CURRICULUM | 40 HOUR WORKWEEK

Stay in touch and get new resources sent to you automatically via email!
I send a personal, uplifting message every Sunday night to over 95,000 educators.

GET THE FREE WEEKLY EMAIL