



**HOW TO PLAY Shape Card Games**

**Math children are practicing**

- Naming shapes
- Recognizing shape attributes
- Recognizing numerals
- Shifting rules, keeping track (working memory), regulating themselves during game play (executive functions)

**Materials**

- 2 decks of Shape Cards

| <b>10 Different Shape Card Games</b>                  |  |
|---|--|
| <b>Game</b>   | <b>Suggested cards to use</b>  |
| <b>Match Numbers</b><br><i>About age 3 and up</i>     | <b>When you first play</b><br>-Circles 1-5 & Squares 1-5<br><b>Later games</b><br>-Use cards with larger numbers<br>-Play with 4 shapes instead of 2<br>-Play with 6 shapes        |
| <b>Match Shapes</b><br><i>About age 3 and up</i>      | <b>When you first play</b><br>Circles 1-2, Squares 1-2, Triangles 1-2, Rectangles 1-2<br><b>Later games</b><br>-Use 3 & 4 cards<br>-Use rhombus & hexagon cards                    |
| <b>Memory (Numbers)</b><br><i>About age 4 and up</i>  | <b>When you first play</b><br>Circles 1-5 & Squares 1-5<br><b>Later games</b><br>-Use cards with larger numbers<br>-Use triangle & rectangle cards<br>-Use rhombus & hexagon cards |
| <b>Memory (Shapes)</b><br><i>About age 4 and up</i>   | <b>When you first play</b><br>Circles 1-2, Squares 1-2, Triangles 1-2, Rectangles 1-2<br><b>Later games</b><br>-Use rhombus & hexagon cards<br>-Use 3 & 4 cards                    |
| <b>Go Fish (Numbers)</b><br><i>About age 4 and up</i> | <b>When you first play</b><br>Circles 1-10, Squares 1-10, Triangles 1-10, Rectangles 1-10<br><b>Later games</b><br>-Use the entire deck  |
| <b>Go Fish (Shapes)</b><br><i>About age 4 and up</i>  | <b>When you first play</b><br>Circles 1-4, Squares 1-4, Triangles 1-4, Rectangles 1-4, Rhombus 1-4, & Hexagons 1-4<br><b>Later games</b><br>-Use the entire deck                   |



Games for Young Mathematicians  
**Shape Card Games**



|   |   |
|---|---|
| <p><b>Top It! (also known as War)</b><br/> <i>About age 4 and up</i></p>            | <p><b>When you first play</b><br/>           Circles 1-6, Squares 1-6<br/> <b>Later games</b><br/>           -Use the entire deck</p>   |
| <p><b>Snap! (also known as Slap Jack)</b><br/> <i>About age 4 and up</i></p>        | <p><b>When you first play</b><br/>           Circles 1-10, Squares 1-10<br/> <b>Later games</b><br/>           -Use the entire deck</p>   |
| <p><b>One Card Left (also known as Old Maid)</b><br/> <i>About age 4 and up</i></p> | <p><b>When you first play</b><br/>           1 Wild Shapes card, Circles 1-10 &amp; Squares 1-10<br/> <b>Later games</b><br/>           -Use triangle and rectangle cards<br/>           -Use the entire deck</p>   |
| <p><b>Wild Shapes (also known as Crazy 8s)</b><br/> <i>About age 5 and up</i></p>   | <p><b>When you first play</b><br/>           4 Wild Shapes cards, Circles 1-6, Squares 1-6, Triangles 1-6, Rectangles 1-6<br/> <b>Later games</b><br/>           -Use cards with larger numbers<br/>           -Play with 4 shapes instead of 2<br/>           -Use the entire deck (and up to 6 players)</p> |

**Tips from the classroom:**

- Many children will not have had experience playing card games. They will need to learn how to handle the cards carefully (to try not to rip or bend them). They will need practice learning how to hold the cards in their hands. Be patient in teaching these skills, they can be hard for many children.
- Tips for holding cards:
  - **Place them face up on the table or floor instead.** Have children place cards in front of them and players can help each other.
  - **Use a shoe box (or another container).** Children can keep their cards in a shoebox (without a top) so other players can't see.
  - **Model and practice.** For children who have the fine motor skills, model for them how to hold the cards and have them practice.
- Games like *Snap* and *Wild Shapes* are particular hard for children because they require them to keep two rules in mind—the match on number rule and the match on shape rule. Often children are only able to focus on one of those rules at a time, not both. This is great practice for their executive function skills.

**General tips for card games**

- **Play!** Young children learn best through play and conversation. Keep the games fun and interesting. You can change the rules and help each other as much as you would like.
- **Learning takes time and practice.** Children might want to play the same game over and over again, that's great! Young children learn through repetition; they are gaining practice.



## Shape Card Games



- **Mistakes are part of learning.** Children might make the same mistake many times. That's okay. Help them fix the mistake without getting frustrated and they'll be learning.
- **Be positive.** Express good thoughts about math and how fun it can be. Children are likely to take on your beliefs.
- **Ask questions.** Rather than tell children what to do next, make observations and ask questions. Say, "You need a card that matches. Do you have a card that matches on number or on shape?"
- **Think out loud.** To help children learn strategy and how to think about games, talk about what you are thinking on your turn. Say, "I just turned over a 3. I remember that there was a 3 over there on my last turn. I'm going to turn over that card."
- **Game playing skills.** Young children are still learning how to take turns and be patient. They are also learning how to win or lose graciously and respectfully. These are important skills for life and school.
- **Cheating.** Young children are notorious for cheating at games. It's normal. It shows that they understand the rules and strategies of the game, so it shows that they are learning. Be patient in explaining that the rules are there so everyone gets a fair chance. In time, they will learn this too!

### ***Praising the process:***

- I noticed you are...
- You're working hard!
- Good idea!
- Keep trying!
- I like how you took your time and worked hard on that.



| <b>Match Numbers (Cards face up), Ages 3+</b>   |   |
|---|---|
| <b>When you first play</b><br>-Circles 1-5 & Squares 1-5  | <b>Later games</b><br>-Use cards with larger numbers<br>-Play with 4 shapes instead of 2<br>-Play with 6 shapes |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Lay out the cards face up in rows so that all the players can see.</li> <li>3. Take turns matching pairs with the same number. Demonstrate to children how to do this first.</li> <li>4. Say the name of the number that matched on the 2 cards. This is important to give children practice matching the spoken name with the written numeral.</li> <li>5. <i>To make it easier:</i> Only use circles 1-3 and squares 1-3, so there are only 3 pairs to find.</li> <li>6. <i>The game ends when all cards are matched.</i> Children can count up how many pairs they made.</li> </ol>   |   |
| <p><b>About the learning in this game.</b> The <i>Number Match</i> game works on numeral recognition and introduces children to the first of two matching rules used in several of the later games. In the <i>Number Match</i> game, children are focused on one rule—matching by numeral. Later they will match by numeral and shape.</p> <p>Children are still learning how to play games and here they are practicing skills like taking turns, finding pairs or matches, keeping track of and counting up cards. These skills are important in and of themselves because they allow children to access other opportunities for card games such as <i>Crazy 8s</i>, <i>Uno</i>, <i>Go Fish</i>, and <i>Top It (War)</i>. These card games have mathematical elements including numeral recognition, comparing numbers, logic, strategy, rule shifting, and classification that are worthwhile and can extend children’s learning outside of school. For most children, learning game-playing skills takes time, patience, and explicit support to develop.</p> |   |

| <b>Match Shapes (Cards face up), Ages 3+</b>  |  |
|---|--|
| <b>When you first play</b><br>Circles 1-2, Squares 1-2, Triangles 1-2, Rectangles 1-2   | <b>Later games</b><br>-Use 3 & 4 cards<br>-Use rhombus & hexagon cards |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Lay out the cards face up in rows so that all the players can see.</li> <li>3. Take turns matching pairs with the same shape. Demonstrate to children how to do this first.</li> <li>4. Say the name of the shape that matched on the 2 cards. This is important to give children practice using the shape name.</li> <li>5. <i>The game ends when all cards are matched.</i> Children can count up how many pairs they made.</li> </ol> |  |
| <p><b>About the learning in this game.</b> The <i>Shape Match</i> game works on shape recognition and introduces children to a second matching rule—matching on shape.</p>  |  |



**Shape Card Games**

Children are still learning how to play games and here they are practicing skills like taking turns, finding pairs or matches, and keeping track of and counting up cards. These skills are important in and of themselves because they allow children to access other opportunities for card games such as *Crazy 8s*, *Uno*, *Go Fish*, and *Top It (War)*. Many card games have mathematical elements including numeral recognition, comparing numbers, logic, strategy, rule shifting, and classification that are worthwhile and can extend children's learning outside of school. For most children, the game playing skills take time, patience, and explicit support to develop.

**Memory Numbers, Ages 4+****When you first play**

Circles 1-5 &amp; Squares 1-5

**Later games**

- Use cards with larger numbers
- Use triangle & rectangle cards
- Use rhombus & hexagon cards

1. Shuffle the cards.
2. Lay out the cards face down in rows so that all the players can see.
3. Take turns turning over two cards. If the cards match on number, keep them and go again. If not, turn the cards face down and your turn ends.
4. *The game ends when all cards are matched.* Children can count up how many pairs they made.

**About the learning in this game.** This game is also called Concentration. It's a great game for practicing and strengthening attention and memory skills. At first, some children will have a hard time remembering that they can only turn over two cards at once. Children may also need practice paying attention when other children are turning cards over. You may have to remind them that if they pay attention when it's not their turn, they will be able to make more matches when it is their turn.

**Memory Shapes, Ages 4+****When you first play**

Circles 1-2, Squares 1-2, Triangles 1-2, Rectangles 1-2

**Later games**

- Use rhombus & hexagon cards
- Use 3 & 4 cards

1. Shuffle the cards.
2. Lay out the cards face down in rows so that all the players can see.
3. Take turns turning over two cards. If the cards match on shape, keep them and go again. If not, turn the cards face down and your turn ends.
4. *The game ends when all cards are matched.* Children can count up how many pairs they made.

**About the learning in this game.** Just like the previous memory game that matches on number, this game is great for practicing attention and memory skills. At first, some children will have a hard time remembering that they can only turn over two cards at once. Children may also need practice paying attention when other children are turning cards over. You may have to remind them that if they pay attention when it's not their turn, they will be able to make more matches when it is their turn.

**Shape Card Games**



| <b>Go Fish (Numbers), Ages 4+</b>  |  |
|--|--|
| <b>When you first play</b><br>Circles 1-10, Squares 1-10, Triangles 1-10, Rectangles 1-10  | <b>Later games</b><br>-Use the entire deck |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal 5 cards to each player. Place remaining cards face down in the middle.</li> <li>3. On your turn, ask another player if they have a number that matches a number in your hand. If they have a card of that number, they must give it to you. If they don't, they say "go fish" and you draw a card from the pile in the middle.</li> <li>4. If the card you draw makes a match, place that pair of cards down and go again.</li> <li>5. If you do not make a match, it's the next players turn.</li> <li>6. The game ends when one player runs out of cards OR that player can choose to draw from the "go fish" pile to keep playing.</li> </ol> |  |
| <p><b>About the learning in this game.</b> Children are practicing skills like taking turns, finding pairs or matches, keeping track of and counting up cards. These skills are important in and of themselves because they allow children to access other opportunities for card games. Many card games have mathematical elements including numeral recognition, comparing numbers, logic, strategy, rule shifting, and classification that are worthwhile and can extend children's learning outside of school. For most children, the game playing skills take time and patient and explicit support to develop.</p>   |  |

| <b>Go Fish (Shapes), Ages 4+</b>   |  |
|--|--|
| <b>When you first play</b><br>Circles 1-4, Squares 1-4, Triangles 1-4, Rectangles 1-4, Rhombus 1-4, & Hexagons 1-4   | <b>Later games</b><br>-Use the entire deck |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal 5 cards to each player. Place remaining cards face down in the middle.</li> <li>3. On your turn, ask another player if they have a shape that matches a shape in your hand. If they have a card of that number, they must give it to you. If they don't, they say "go fish" and you draw a card from the pile in the middle.</li> <li>4. If the card you draw makes a match, place that pair of cards down and go again.</li> <li>5. If you do not make a match, it's the next players turn.</li> <li>6. The game ends when one player runs out of cards OR that player can choose to draw from the "go fish" pile to keep playing.</li> </ol> |  |
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## Shape Card Games



| <b>Top it! (e.g. War), Ages 4+</b>  |  |
|---|--|
| <b>When you first play</b><br>Circles 1-6 & Squares 1-6   | <b>Later games</b><br>-Use the entire deck |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal out all the cards in equal piles for each player.</li> <li>3. Each player turns over the top card in their pile. Whoever has the highest number keeps all the cards from that round. If there is a tie, the tied players turn over their next card. Whoever has the highest then wins all the cards from both rounds.</li> <li>4. The game ends when one player has all the cards.</li> </ol> |  |
| <p><b>About the learning in this game.</b> In this game, children are practicing recognizing the numerals and knowing to whether two or more numbers are more, less, the same. These are important skills for developing their number sense.</p>  |  |

| <b>Snap!, Ages 4+</b>  |  |
|--|--|
| <b>When you first play</b><br>Circles 1-6 & Squares 1-6  | <b>Later games</b><br>-Use cards with larger numbers<br>-Play with 4 shapes instead of 2<br>-Use the entire deck<br>-With the entire deck, you can have up to 6 players. |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal cards out face down into equal piles for each player.</li> <li>3. Players take turns turning over their top card and placing it face-up in a central pile on top of the previous card.</li> <li>4. If two cards placed consecutively on the pile match by shape or number, the first player to say <i>SNAP</i> and place their hand on top of the central pile takes the pile of cards and adds them to the bottom of their stack.</li> <li>5. Player who accumulates all the cards wins.</li> <li>6. <i>Winning:</i> The player who accumulates all the cards.</li> <li>7. <i>Easier variation:</i> Only match by number or only match by shape.</li> <li>8. <i>Instead of placing hand on the central pile:</i> Player can clap their hands and say SNAP. Or players can touch the side of the table and say SNAP.</li> <li>9. <i>If the game is too long.</i> You can always decide to stop the game early. You could just decide that the player with the most cards wins or call it a draw and have a rematch another day.</li> </ol> |  |
| <p><b>About the learning in this game.</b> In this game, children are practicing their shape and numeral recognition, but their brains are working on a lot more than that. They have to pay careful attention to the cards other players put down and to keeping both matching rules in their head. Sometimes the cards will match number, and sometimes on shape.</p> <p>As we wrote above, children are practicing skills like taking turns, finding pairs or matches, keeping track of and counting up cards. These skills are important in and of themselves</p>  |  |



**Shape Card Games**



because they allow children to access other opportunities for card games. Many card games have mathematical elements including numeral recognition, comparing numbers, logic, strategy, rule shifting, and classification that are worthwhile and can extend children’s learning outside of school. For most children, the game playing skills take time, patience, and explicit support to develop.

| <b>One Card Left, Ages 4+</b>  |   |
|--|---|
| <b>When you first play</b><br>1 Wild Shapes card, Circles 1-10 & Squares 1-10  | <b>Later games</b><br>-Use triangle and rectangle cards<br>-Use the entire deck |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal cards out face down into equal piles for each player.</li> <li>3. Place down any 2 cards in your hand that match on number.</li> <li>4. Offer your hand of cards, face down to the player on your left. That person takes one card and adds it to their hand. Then it’s that players turn. If they have any matches, they place those down then offer their hand to the next player on their left.</li> <li>5. Continue taking one card from each player’s hand and placing down pairs of matches.</li> <li>6. The game ends when only one player has one card--the Wild Shapes card!</li> </ol> |   |
| <p><b>About the learning in this game.</b> In this game, children are practicing recognizing and matching numerals. Children have to focus on matching numerals and inhibit matching shapes. You can start children playing with fewer cards—just two different shapes. When they are ready to be challenged with more cards, you can add two more shapes. Remember to always add 2 additional shapes so that the children can make pairs. For example, there needs to be two cards of number 3 in the deck to make a pair, or four cards of number 3 in the deck to make two pairs.</p>   |   |

| <b>Wild Shapes, Ages 5+</b>   |   |
|---|---|
| <b>When you first play</b><br>4 Wild Shapes cards, Circles 1-6, Squares 1-6, Triangles 1-6, Rectangles 1-6.   | <b>Later games</b><br>-Use higher numbers<br>-Use entire deck<br>-Use the rule that if you don’t have a card that matches you have to draw cards until you do |
| <ol style="list-style-type: none"> <li>1. Shuffle the cards.</li> <li>2. Deal 5 cards face down to each player. Place remaining cards in a pile face down. Turn over the top card.</li> <li>3. Players have to match the top card—by shape or number—with a card in their hand. If a match can be made, the player puts the card on the top of the discard pile face up and says what the match is—i.e. “4” or “hexagons.” That card becomes the new top card and it’s the next players turn.</li> <li>4. However, if a player cannot make a match, but has a Wild Shapes card in her hand, she can play that card and name which shape and number* the next player has to play from.</li> <li>5. If players can’t make a match and doesn’t have a Wild Shapes card, they have to draw from the deck until they can make a match*. Keep playing until a player has no more cards. If you run out of cards in the deck, reshuffle the discard pile.</li> </ol> |   |



## Shape Card Games



6. As kids are learning the game, talk aloud about your possible moves. Support each child in turn by having children also talk through their options.
7. *Holding the cards in your hand so others can't see.* Demonstrate how to hold the cards in your hand so others can't see them. It may be difficult for some children, but something they can practice. You can also give children a shoebox or other small box where they can store their cards without having to hold them.
8. The game ends when one player has all the cards. You can also stop when the first player goes out of cards.
9. *\*Variations:*
  - a. When using a Wild Shapes card, the player puts down another card from their hand on top and the next player has to match on that card. This gives the next player a visual to match on and allows the player with the Wild Shapes card to discard two cards at once.
  - b. If a player cannot make a match and does not have a Wild Shapes card, instead of having players draw from the deck until they get a card they can play, have them just draw one card and then play moves on to the next person.
10. *If the game is too long.* You can always decide to stop the game early. You could just decide that the player with the most cards wins or call it a draw and have a rematch another day.

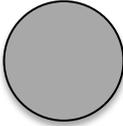
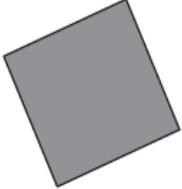
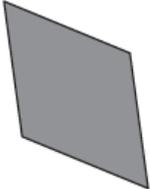
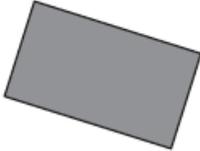
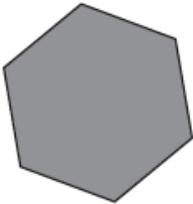
**About the learning in this game.** In this game, children are practicing their shape and numeral recognition, but their brains are working on a lot more than that. They have to pay attention to the cards in their hand and to the rule shifting. Sometimes they will want to match on number, and sometimes they will want to match on shape, depending on the cards in their hand and the top card in the discard pile. What the “best” move will be is constantly changing and they have to pay attention to their game play as well as the other players’.

As they get more experienced, they will start paying attention to strategy—which card will be easier or harder to get rid of? When should I play the wild card? What shape should I name when I play the wild card?

As we wrote above, children are practicing skills like taking turns, finding pairs or matches, keeping track of and counting up cards. These skills are important in and of themselves because they allow children to access other opportunities for card games such as *Crazy 8s*, *Uno*, *Go Fish*, and *Top It (War)*. Many card games have mathematical elements including numeral recognition, comparing numbers, logic, strategy, rule shifting, and classification that are worthwhile and can extend children’s learning outside of school. For most children, the game playing skills take time, patience, and explicit support to develop.

Games for Young Mathematicians  
**Shape Card Games**



| Shape   | Shape Name | Defining Attributes   |
|---|------------|---|
|    | Circle     | A shape made by drawing a curve that is always the same distance from a center point.   |
|    | Square     | A shape with 4 straight sides that are all the same length and 4 right angles (like the corners of piece of paper)  |
|    | Triangle   | A shape with exactly 3 straight sides.  |
|   | Rhombus    | A shape with 4 straight sides that are all the same length.   |
|  | Rectangle  | A shape with 4 right angles (like the corners of piece of paper) and 4 straight sides. Opposite sides are the same length and parallel (like train tracks). |
|  | Hexagon    | A shape with exactly 6 straight sides.  |

