



# ST Math<sup>®</sup>

## Family Guide to Supporting Pre-K and Kindergarten Students Learning From Home



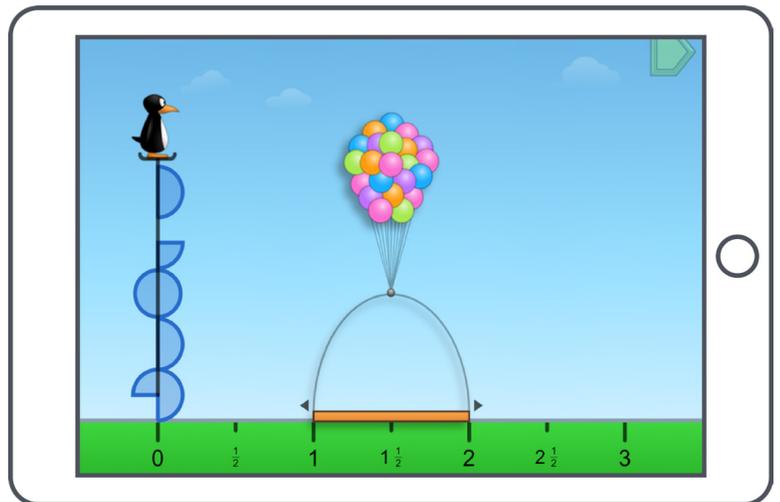
Dear Families,

Welcome to ST Math! We believe your child has the potential to deeply understand, and truly love math. At MIND Education, our mission is to ensure that all students are mathematically equipped to solve the world's most challenging problems. We have designed some resources in this guide that are designed to support your child's math learning at home. Check out the three types of activities included in this guide.

**ST Math Program:** ST Math is a PreK-8 visual instructional program that leverages the brain's innate spatial-temporal reasoning ability to solve mathematical problems. ST Math games include challenging puzzles that help your child deepen their mathematics understanding. If you need more information on ST Math, please visit [stmath.com](http://stmath.com).

**Hands-On Math Activities:** The Hands-On Math Activities focus on specific math concepts within a grade level. Each activity is designed to engage your child in hands-on learning and promote understanding of the concept. These activities are fun for children and families to do math at home. Each activity includes clear directions, vocabulary words, and questions families can ask to support their children during the activity.

**Table Games:** Number Sense is an area that is critical to mathematics learning. It includes mathematical concepts like counting, addition, subtraction, multiplication, division, fractions, place value, estimation, and many others. In this packet, there are games that families can play at home with their children to build number sense and practice those critical skills in a fun and engaging way through gameplay.



# Contents

## **ST Math 4-9**

Resources to support, monitor, and assess your child's learning while they play ST Math.

## **Math Content Focused Activities 10-19**

A collection of hands-on, grade-band activities focused on practicing and exploring math concepts. (Children will not get on ST Math for these activities.)

## **Building Number Sense Activities**

Hands-on games designed to support children in building number sense. (Children will not get on ST Math for these activities.)

**21-36**

# Tips to make the most of ST Math

Resources to support, monitor, and assess children learning while they play ST Math.

Your child will work independently on ST Math and track their usage on the ST Math **calendar** (page 6). Recommended usage time is 20 to 30 minutes, 3 times a week. Work with your child to set goals and monitor their progress toward achieving their goals. This is a great opportunity to help your child see that they can achieve their goals.

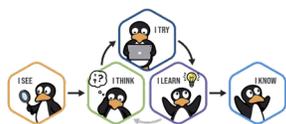


If possible, take time to sit with your child and ask them to **explain** to you what they are learning with ST Math. ST Math puzzles provide a great foundation for math discourse.

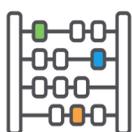
A fun way to **share** learning together is to have your child “teach” a family member how to play one of the ST Math games. They can share the mathematics in the game.



Encourage your child to use the **Problem Solving Process** to help problem solve through the puzzle. We’ve designed a bookmark (pages 7-8) that you can use with your child.



If your child gets **stuck** playing the ST Math puzzles, you can also use the questions on the Facilitating Questions poster (page 9) to help your child problem solve through the ST Math games.



If your child is struggling, use some at home **math tools** which you can find around the house or that you can make in the house. Some ideas include using pastas, dried beans, dice, playing cards, coins, beads, buttons, egg cartons, legos, index cards, etc.





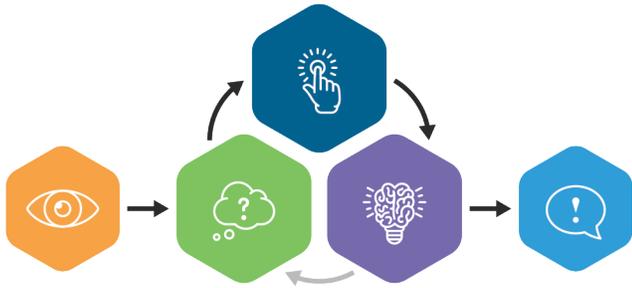
# ST Math® Usage Calendar

Mark your progress every time you use ST Math. Try to play at least 30 minutes. Color the box each day that shows the number of minutes you played. Fill in how many puzzles you completed in ST Math.

**STUDENT NAME:** \_\_\_\_\_

MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY		
DATE:														
10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:		
DATE:			DATE:			DATE:			DATE:			DATE:		
10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:		
DATE:			DATE:			DATE:			DATE:			DATE:		
10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:		
DATE:			DATE:			DATE:			DATE:			DATE:		
10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:			Number of Puzzles I Completed:		

# ST Math.



## PROBLEM SOLVING PROCESS

Name \_\_\_\_\_



I SEE



I THINK



I TRY

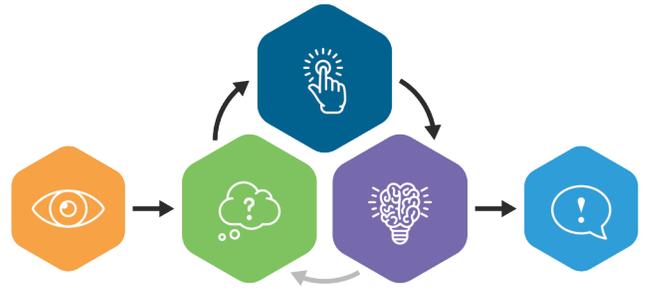


I LEARN



I KNOW

# ST Math.



## PROBLEM SOLVING PROCESS

Name \_\_\_\_\_



I SEE



I THINK



I TRY



I LEARN



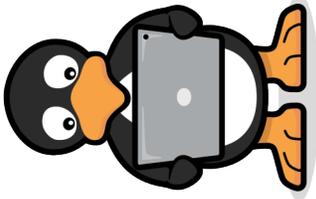
I KNOW



**I SEE**



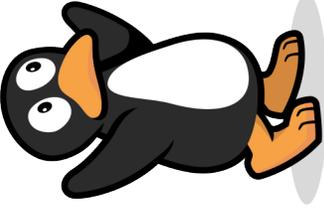
**I THINK**



**I TRY**



**I LEARN**



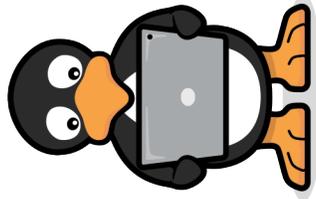
**I KNOW**



**I SEE**



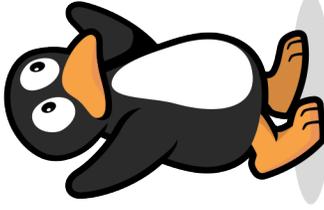
**I THINK**



**I TRY**



**I LEARN**



**I KNOW**



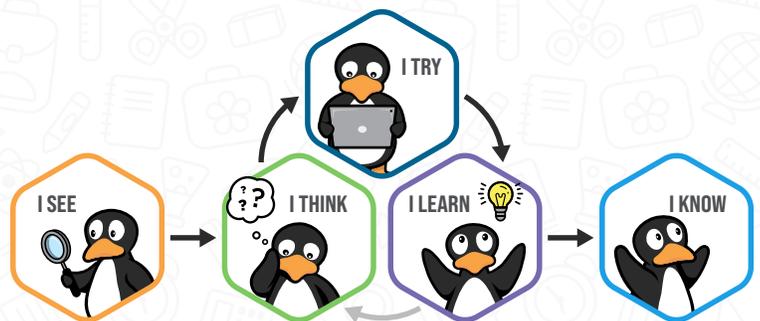
# Facilitating Questions

In ST Math®, the puzzles start off simple and then get more challenging as your student progresses. If they encounter a difficult puzzle, they may ask you for your help. Don't feel like you have to give your student the right answer. Allow them to experience productive struggle.

Here are some questions that you can ask your student to help them stay motivated. These questions can be used in the classroom or at home:

- Describe what you **see** on the screen.
- What have you **tried** to do to solve the puzzle?
- What do you **think** you need to do to solve the puzzle?
- Describe the strategy that you are going to **try**.
- What do you think is going to happen when you click the Go Button?
- Describe what you see after you try your strategy. Was it what you expected?
- How does this compare to what you thought would happen?
- What did you **learn** from the animated feedback?
- What do you **know** now to help you with future puzzles?

*If they continue to struggle and do not know what to do, have them play a previous level. Then ask them, "What did you learn from the previous level that can help you in this new level?" followed by, "Why do you think it worked?" Or suggest using some math tools they can find around the house.*



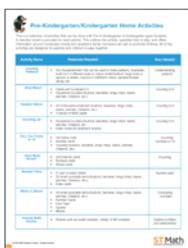
# Hands-On Math Activities

*A collection of hands-on, grade-band activities focused on practicing and exploring math concepts.*

## Tips for doing these activities at home:

- These are great activities for you to do with your child. Family members can use the questions and ideas provided to promote math conversations.
- Once your child finishes the activity, have them write a 5-sentence summary or draw a picture of what they learned. They should also list any questions they have for their teacher.

## Resources Included in This Family Guide



**Math Activity Guide:** This guide outlines activities, their related materials, and math concepts.



**Math Activity Sheets:** These activity sheets include directions, vocabulary words, sample questions, and extension ideas. The activities are designed so that your child can do it at home with your family.



# Pre-Kindergarten/Kindergarten Home Activities

This is a collection of activities that can be done with pre-kindergarten & kindergarten aged students. A direction sheet is provided for each activity. This outlines the activity, specifies how to play, and offers information around vocabulary words and questions family members can ask to promote thinking. All of the activities are designed for families and children to play together.

Activity Name	Materials Needed	Key Idea(s)
<b>Creating Patterns</b>	<ul style="list-style-type: none"><li>Any household item that can be used to make patterns. Examples: buttons in 3 different sizes or colors; small / medium / large forks or spoons or plates; crayons in 3 different colors; pennies / nickels / dimes; etc.</li></ul>	Understanding patterns
<b>How Many?</b>	<ul style="list-style-type: none"><li>Cards with numerals 0 - 5</li><li>Household counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li></ul>	Counting to 5
<b>Number Match</b>	<ul style="list-style-type: none"><li>40 of the same small item (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li><li>3 pieces of blank paper</li></ul>	Counting to 5
<b>Counting Jar</b>	<ul style="list-style-type: none"><li>Household counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li><li>Index Cards (for extension activity)</li></ul>	Counting to 5
<b>Fill a Ten Frame to 10</b>	<ul style="list-style-type: none"><li>Ten frame mats</li><li>Number cards</li><li>Household counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li></ul>	Counting numbers to 10
<b>How Many Shoes?</b>	<ul style="list-style-type: none"><li>JiJi's friends cards</li><li>Numeral cards</li><li>Shoes cards</li></ul>	Counting
<b>Number Pairs</b>	<ul style="list-style-type: none"><li>8 cups or paper plates</li><li>20 small countable items (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li><li>Index cards</li></ul>	Number pairs
<b>Which is More?</b>	<ul style="list-style-type: none"><li>20 small countable items (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li><li>Number Cards</li><li>Duct Tape</li><li>Quarter</li><li>Marker</li></ul>	Comparing numbers
<b>Yummy Math Stories</b>	<ul style="list-style-type: none"><li>Snacks such as oyster crackers, cereal, or fish crackers</li></ul>	Explore numbers and relationships



# Creating Patterns

Activity for Pre-K/Kindergarten age children

This game focuses on helping children explore ABC, ABB, and AAB patterns.

Examples of these patterns include: ABC - red, green, blue, ABB - small, large, large, AAB - ball, ball, bat

## Directions:

- Gather 10-12 each of at least three household items.
- Line up the items to make an ABC pattern for your child, such as red crayon, blue crayon, green crayon.
- Help your child “read” the pattern by pointing to and naming each item.
- Encourage your child to copy the pattern you created.
- Repeat the steps above with ABB and AAB pattern.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>Pattern</b> <b>Copy</b> <b>Same</b> <b>Repeat</b></p>	<ul style="list-style-type: none"> <li>• Any household item that can be used to make patterns. Some examples include: buttons in 3 different sizes or colors; small / medium / large forks or spoons or plates; crayons in 3 different colors; pennies / nickels / dimes; etc.</li> </ul>	<ul style="list-style-type: none"> <li>• How would you describe the pattern?</li> <li>• Repeat part of the pattern. What comes next? How do you know?</li> <li>• Can you make a pattern that is different than the one we just did? Can you make a pattern that is the same, using different items?</li> <li>• Repeat the pattern with a mistake in it. Is this pattern correct? Why or why not?</li> </ul>

## Ideas for extending the learning:

- Have your child create a pattern based on your description as an ABC, ABB, or AAB pattern.
- Have your child create patterns using features of items like size, color, or orientation.
- Find patterns in the world around you — striped shirts, wrapping paper, or tiled floors work great.



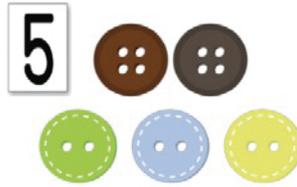
# How Many?

Activity for Pre-K/Kindergarten age children

This game focuses on helping children develop the ability to recognize numerals and to relate the numerals to their corresponding quantities.

## Directions:

- Shuffle the cards.
- Place them face down in a pile.
- Have your child draw a card and read the number to you.
- Have your child use the household counters to represent the number on the card. They should count them out loud to prove the number on the card is the same as the number of counters.
- Repeat steps 3 and 4 by drawing a new card.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<b>Counting</b> <b>Total</b> <b>One</b> <b>Two</b> <b>Three</b> <b>Four</b> <b>Five</b>	<ul style="list-style-type: none"> <li>• Cards with numerals 0 - 5</li> <li>• Household counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• What is the number on the card?</li> <li>• How many counters do you have?</li> <li>• How do you know the number of counters you have matches the number on the card?</li> <li>• Can you tell me how many counters you need to have one more than the number on the card? One fewer?</li> </ul>

## Ideas for extending the learning:

- Have your child repeat the activity using two different items to represent the number. For example, if the number is 5, your child may use 2 buttons and 3 pennies to represent 5. Ask them to compare the numbers.
- Take turns with your child drawing a card and representing the number with the counters. Once you both take a turn, ask your child who has more. Have them count the items to prove it.
- Place all the cards face up on the table. Have students get a handful of counters. Once they count them, have them select the number card that they feel represents the number of items they have.



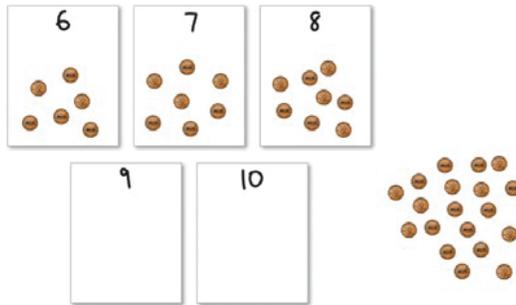
# Number Match

Activity for Pre-K/Kindergarten age children

This game focuses on helping children explore numbers 6 - 10. Children will practice recognizing the numerals 6, 7, 8, 9, and 10. They will also practice counting up to ten.

## Directions:

- Cut three pieces of paper into halves to create 5 cards.
- Write the number 6, 7, 8, 9 or 10 on each card.
- Give your child 40 of the same small items.
- Have your child count out six pennies (or beans, etc.) and place them on the card that says 6.
- Repeat with the other cards.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>Six, seven, eight, nine, ten</b>  <b>Count</b>  <b>Amount</b>  <b>More</b>  <b>Less</b>  <b>Most</b>  <b>Least</b></p>	<ul style="list-style-type: none"> <li>• 40 of the same small item (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> <li>• 3 pieces of blank paper</li> </ul>	<ul style="list-style-type: none"> <li>• Point to a card. How many things are on this card?</li> <li>• Point to two cards. Which card has more? Which card has fewer? How do you know?</li> <li>• Which card has the most out of all the cards? How can you tell?</li> </ul>

## Ideas for extending the learning:

- Place the cards face up in a row above the items. Give the child between 6 and 10 items. Ask them to select the card that represents the number of items you gave them. Repeat this several times.
- Repeat the activity, this time with the cards face up and not in order. Once your child has placed the items on all the cards, have them place the cards in the correct order.



# Counting Jar

Activity for Pre-K/Kindergarten age children

This game focuses on giving children practice exploring numbers 0 - 5. They need to practice recognizing numerals 0, 1, 2, 3, 4, and 5. They need to understand that the number 0 means zero objects, 1 means one object, and so on.

## Directions:

- Work with your child to collect 20 small items for hands-on counting. When collecting, try to get 4 or 5 different small items such as pennies, buttons, beads, toy cars, etc. Collect a different number of each item. Two of the items could have the same number so you can discuss numbers that are the “same” or equal.
- Place the items in a container like a jar or a bag.
- Have your child remove the items from the container, sort, and count them.
- Talk to them about the number of each type of item they have. Have them count to prove their answer.
- Help your child compare the amounts of the different items.



Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>One, two, three, four, five</b>  <b>Count</b>  <b>Amount</b>  <b>More</b>  <b>Less</b></p>	<ul style="list-style-type: none"> <li>• Household counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> <li>• Index Cards (for extension activity)</li> </ul>	<ul style="list-style-type: none"> <li>• How many of each item do you have?</li> <li>• Which items do you only have 3 of? 4? 5?</li> <li>• Which items do you have the most of? The least?</li> <li>• Compare two items. How many more/less of this item do you have compared to that one?</li> <li>• Point to two items. Which is more/less? How do you know?</li> </ul>

## Ideas for extending the learning:

- Place the cards face up in a row above the items. Give the child between 6 and 10 items. Ask them to select the card that represents the number of items you gave them. Repeat this several times.
- How many of each item do you have?
- Which items do you only have 3 of? 4? 5?
- Which items do you have the most of? The least?
- Compare two items. How many more/less of this item do you have compared to that one?
- Point to two items. Which is more/less? How do you know?



# Fill a Ten Frame to 10

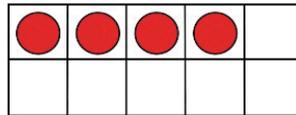
Activity for Pre-K/Kindergarten age children

This game focuses on giving children experience using ten frames to help them build number sense. A ten frame is a visual tool used to represent numbers 0 - 10. It allows us to represent the quantity of a number and helps with understanding ten and exploring the relationship of numbers.

A ten frame needs to be filled in consecutively, by placing one object at a time in one square and working up a column. You can have your child use it by filling up one column before going to the other to help them see, for example, that 6 is one more than 5 and 9 is one less than 10. To explore doubles and even/odd numbers, the ten-frame can be filled up using both columns at the same time.

## Directions:

- Give your child a ten frame. You should have one, too.
- Give students one counter and have them place it on the ten frame. Have them say the number one and show one on their mat.
- Pick a number card. Have students represent that number with the counters on their ten frame. You should do this as well by drawing your own card.
- Have your child say the numeral name on the card and then count to show they have that number represented on their ten frame.
- Have your child check your ten frame to make sure the counters on your ten frame correctly represent the number card you selected.



Math Words to Use:	Materials	Sample Questions to Ask:
<b>Numeral names</b> <b>0-10</b> <b>Ten frame</b> <b>Counting</b> <b>Total</b> <b>Add</b> <b>Take away</b>	<ul style="list-style-type: none"> <li>• Ten Frame Mats</li> <li>• Number Cards</li> <li>• Counters (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• How many counters are on your mat?</li> <li>• How many counters are on my mat?</li> <li>• Who has more counters? Who has fewer?</li> <li>• Who has the bigger number? Smaller number?</li> <li>• Make a mistake on your ten frame by putting too many/few...Is my ten frame right or wrong? Why? How many do I need to add/take away?</li> </ul>

## Ideas for extending the learning:

- Shuffle the number cards and place them face down. Draw a card and have your child draw a card. Do not let the other see what the number is. Use the counters to represent the number on the ten frame. Show each other the number cards that were drawn. Have your child determine who has the bigger/smaller number. Use the counters on the ten frames to prove the answer. You can also ask them to compare the numbers and tell you how many more or how many less.
- Create a number on your ten frame. Hide the ten frame, but tell your child the number. Have them build a number on their ten frame that is bigger/smaller than your number. Show them your ten frame and compare.



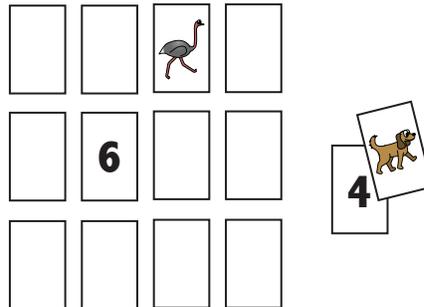
# How Many Shoes?

Activity for Pre-K/Kindergarten age children

This game focuses on providing children opportunities to match different ways to represent numbers. Children will first determine how many the number represents and then will match it with other ways to show that number.

## Directions:

- This game uses two sets of cards. Choose from JiJi's friends cards, numeral cards, or shoes cards.
- Shuffle the cards as one large deck and place them face down on the table spread out for the matching game.
- Have children flip two cards over and determine if they represent the same quantity.
- If they do match, your child should explain why and then remove that pair and place them in their personal pile (face up beside them).
- If the cards do not match, your child will flip them back over so they are face down and it will be your turn to flip two cards over. Take turns until all the cards are removed. Each person should count up their matches. Whoever has the most cards wins.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>Match Same</b>  <b>Numeral names</b>  <b>0-10</b>  <b>More</b>  <b>Less</b></p>	<ul style="list-style-type: none"> <li>• JiJi's friends cards</li> <li>• Numeral cards</li> <li>• Shoes cards</li> </ul> <p>Download cards <a href="#">here</a></p>	<ul style="list-style-type: none"> <li>• What is the number represented on your card?</li> <li>• Compare the two cards that you flipped over. How are they the same/different?</li> <li>• If you could change one of your cards to make it match the other, what change would you make and why?</li> </ul>

## Ideas for extending the learning:

- Mix all three sets of cards together into one large deck. Make sure it is shuffled. Pick a target number between 2 and 10. Write that number on a piece of paper and place it on the table. Deal 4 cards for yourself and your child. (Can play with up to 3 people, or make an extra set for each type of card.) Place the remaining cards, face down in a pile in the middle of the table. Looking at the cards in your hand, try to make the target number. You can use one card or a combination of cards. If you can make that target number, place those cards on the table. (For example, the target number is 7. I can put down a dog with 4 legs, the number 2, and a 1 shoe card. This will give me 7 altogether.) Once you have played cards from your hand, draw additional cards so that you have 4 cards in your hand at all times. If you can't play any cards from your hand you can trade up to 2 cards from you hand with new cards from the deck. Game play continues with the same target number until one person is able to play all the cards in their hand or no one has playable cards.



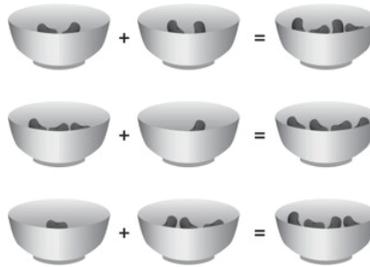
# Number Pairs

Activity for Pre-K/Kindergarten age children

This game focuses on giving children the opportunity to explore different ways to compose numbers up to five. Children are learning to combine two numbers to represent a third. For example, the number four can be represented as three plus one ( $4 = 3 + 1$ ) or two plus two ( $4 = 2 + 2$ ).

## Directions:

- Prepare 8 empty cups or paper plates and 20 beans or small countable items.
- Place 1 - 5 beans in each cup or on each paper plate.
- Use number cards 1 - 5. Shuffle the cards and put them face down on the table.
- Draw a card and have your child read the number on the card.
- Have them show which two cups or paper plates have enough items on them that can be used to represent the number on the card. For example, if the number on the card was 5, a child may select a cup with 3 beans and a cup with 2 beans to represent 5 things.
- Have the child find all possible pairs.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<b>Numeral names</b> <b>1-5</b> <b>Pair</b> <b>Addition</b> <b>Subtraction</b> <b>Counting</b> <b>Total</b>	<ul style="list-style-type: none"> <li>• 8 cups or paper plates</li> <li>• 20 small countable items (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> <li>• Index cards</li> </ul>	<ul style="list-style-type: none"> <li>• Which two bowls can I use to make 2? 3? 4? 5?</li> <li>• How are you figuring out the pairs to make?</li> <li>• Can you find all possible pairs?</li> </ul>

## Ideas for varying the activity:

- For a fun twist on this activity, use skittles or M & M's. As the child makes pairs, they get to eat the candy in the dish.
- Repeat the activity, but focus on creating number pairs that make ten.



# Which is More?

Activity for Pre-K/Kindergarten age children

This game focuses on having children explore number relationships. Children will identify items that are greater than or less than a given number.

## Directions:

- Gather 20 small countable items (beans, buttons, pennies, barrettes, etc.).
- Tape a small piece of duct tape to the front and to the back of a quarter. On one side write MORE and on the other side write FEWER.
- Shuffle the number cards and place them face down in a pile on the table.
- Have your child select a card from the pile and turn it over.
- Flip the coin to determine if your child should use the counters to represent a number that is MORE or FEWER. For example, if the card chosen from the pile is 8 and the coin flip reveals MORE, the child should use the counters to represent a number that is more than 8.
- Have your child prove that they are correct.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>More</b> <b>Less</b> <b>Fewer</b> <b>Total</b> <b>Numeral names</b> <b>0-10</b></p>	<ul style="list-style-type: none"> <li>• 20 small countable items (buttons, barrettes, bingo chips, beans, pennies, Cheerios, etc.)</li> <li>• Two sets of Number Cards</li> <li>• Duct Tape</li> <li>• Quarter</li> <li>• Marker</li> </ul>	<ul style="list-style-type: none"> <li>• What number did you represent? Why?</li> <li>• Are there other numbers that you could have represented? Which ones?</li> <li>• Compare the two amounts. How much bigger/smaller is one over the other?</li> </ul>

## Ideas for varying the activity:

- Put 10 of the countable items in a bowl and leave the other 10 on the table. Have your child grab a handful of the countable items from the bowl. Have them count to determine the number of items they have. Place the Number Cards in a pile face down on the table. Have your child flip one over and tell you if it is MORE or LESS than the items they counted. They can use the counters to show they are correct.



# Yummy Math Stories

Activity for Pre-K/Kindergarten age children

This game focuses on counting, addition, and subtraction. It is designed to encourage students to tell math stories. Storytelling uses a different part of our brain and helps make math more meaningful to children.

## Directions:

- Give the child 5 of the same snacks and explain what they represent. Select from:
- Alien spaceships (oyster crackers)
- Donuts (oat cereal such as Cheerios)
- Fish (fish crackers)
- Ask the child to count the number of snacks.
- Tell a story that a giant space monster (or hungry customer or big shark) has come along and zapped (or eaten) 3 spaceships. After the child eats 3 snacks, ask, “How many are there now?”
- Continue the story with snacks being added and eaten and asking how many snacks the child has now. Be sure to have your child eat all of them sometimes so the answer is zero.



## Notes for families:

Math Words to Use:	Materials	Sample Questions to Ask:
<p><b>Count</b> <b>Add</b> <b>Subtract</b></p>	<ul style="list-style-type: none"> <li>• Snacks such as oyster crackers, cereal, or fish crackers</li> </ul>	<ul style="list-style-type: none"> <li>• How many are there now?</li> <li>• If a customer wanted 8 donuts, how many more would have to be made?</li> <li>• If a shark wanted to eat 6 fish, how many more need to join the school?</li> <li>• The giant space monster ate some of the spaceships. How many did the monster eat? How many are left? Have your child count to say how many they are going to eat, count them, then eat them. Have them tell you how many are left.</li> <li>• Allow the child to tell some stories with the adults eating the snacks. What does your child say if you count incorrectly?</li> </ul>

# Table Games

*Hands-on games and math stories designed to support your child in building number sense.*

## Tips for families:

- Play the Table Games with your children. This is a great opportunity to strengthen their math skills and have fun at the same time.
- Some of the games in the packet include game boards. All of the game boards can easily be made by your child instead of printing them out.
- Consider making these games part of a fun family game night.
- Use the ST Math Creature Board to play the game target number. The directions to play the game are included in this guide.
- Challenge your children to create their own mathematical problems for you to solve.

## Resources Included in This Family Guide

*The resources in the table below are provided in the Family Guide to support your child as they learn at home.*



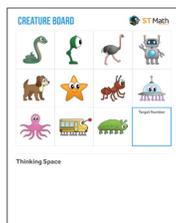
**Grade-Band Game Activity Guide:** This guide outlines games, their related materials, and math concepts.



**Game Directions:** Step-by-step directions on how to play the games. These games are focused on building number sense.



**ST Math Creature Mat Guide:** A guide of sample activities using the ST Math Creature Mat to build number sense.



**ST Math Creature Board:** A creature board highlighting some of the characters from the ST Math games. This board can be used to explore math concepts.



# Kindergarten to Second Grade Games to Play at Home

This is a collection of games that can be done with kindergarten to second grade aged students. A direction sheet is provided for each game. This outlines the games, specifies how to play, offers information around vocabulary words, and provides questions that family members can ask to promote thinking. All of the games are designed for families and children to play together.

Game Name	Materials Needed	Key Idea(s)
<b>Three Card Make 10</b>	<ul style="list-style-type: none"><li>Deck of cards with face cards removed. Ace equals 1.</li></ul>	Addition and subtraction to 20
<b>Addition War</b>	<ul style="list-style-type: none"><li>Deck of cards with face cards removed. Ace equals 1.</li></ul>	Addition to 20
<b>Pyramid Make Ten</b>	<ul style="list-style-type: none"><li>Deck of cards with face cards removed. Ace equals 1.</li></ul>	Addition pairs to make 10
<b>Number Line Race</b>	<ul style="list-style-type: none"><li>2 number or dot cubes</li><li>2 game pieces or markers</li><li>2 index cards</li><li>Paper bag</li><li>Number line 0 to 27. <b>You may print the number line provided or make your own.</b></li></ul>	Addition and subtraction to 27
<b>Make Ten Concentration</b>	<ul style="list-style-type: none"><li>2 Decks of JiJi Creature Cards. <b>These cards will need to be printed.</b> OR</li><li>Deck of cards with face cards and tens removed. Ace equals 1.</li></ul>	Addition pairs to make 10
<b>Number Line Bingo</b>	<ul style="list-style-type: none"><li>Deck of cards with face cards removed</li><li>Number line 0 to 20 for each player. <b>You may print the number line provided or make your own.</b></li><li>4 small markers for each player (e.g., beans)</li></ul>	Addition and subtraction to 20
<b>Tic-Tac-Ten</b>	<ul style="list-style-type: none"><li>Ace to 10 cards from a deck of cards or a dot cube</li><li>Tic-Tack-Ten board. <b>This may be printed or you can make your own.</b></li><li>Small game pieces or markers</li></ul>	Numbers and addition to ten
<b>Addition Connect Four</b>	<ul style="list-style-type: none"><li>Two paper clips</li><li>Two different color chips or game pieces</li><li>Game Board. <b>This must be printed.</b></li></ul>	Addition to 20
<b>Sudoku</b>	<ul style="list-style-type: none"><li>JiJi Sudoku board and cut out JiJi cards</li><li>Sudoku boards with numbers</li><li><b>These game boards and JiJi cards must be printed.</b></li></ul>	Problem solving

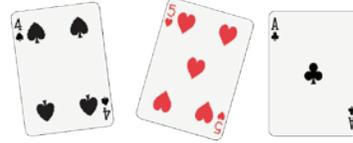


## Three Cards Make Ten

### For 2 to 4 Players

#### Supplies:

- Deck of Cards, face cards removed



Ace = 1  
2-10 = face value

#### How to Play:

1. Shuffle the cards and deal three cards to each player. Place the rest of the cards in the center face down.
2. Players add and/or subtract their three cards to make ten. Players take turns showing how ten was made using their 3 cards. If the cards make ten, they put those cards down and pick 3 more cards from the deck.
3. If a player cannot make ten, they pick a card from the deck and their turn ends.
4. Play continues until all of the cards are gone from the center deck and there are no other plays. The winner is the player with the most cards.

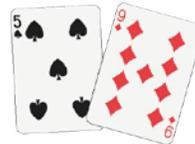


## Addition War

### For 2 Players

#### Supplies:

- Deck of Cards, face cards removed



Ace = 1  
2-10 = face value

#### How to Play:

1. Shuffle the cards. Deal all of the cards to the two players and leave them in a stack, face down.
2. The players put their top two cards face up in front of them.
3. Each player adds his or her cards.
4. The player with the greatest sum gets all 4 cards.
5. If both sums are equal, the play continues until there is a greater sum. The player with the greater sum takes all of the cards played in that round.
6. The winner is the player with the most cards at the end of the game.



# Pyramid Make Ten

**For 1 Player or 2 Players as partners**

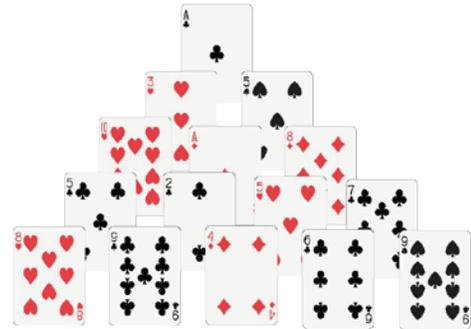
Ace = 1  
2-10 = face value

**Supplies:**

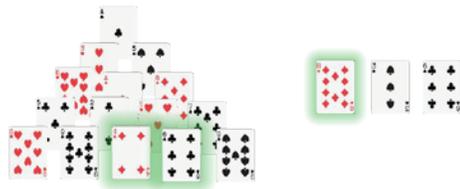
- Deck of cards with face cards removed

**How to Play:**

1. Shuffle the cards.
2. Deal cards into a pyramid (see diagram).
3. Form a pyramid of cards beginning at the top with one card so that each new level partially covers the level above it.
4. Place three cards face up beside the pyramid.
5. Remove any uncovered ten card or any two uncovered cards that add up to ten.
6. If there are no cards that can be removed, place three new cards face-up on top of the three cards.
7. Play continues until there are no cards that can be removed and there are no more cards in the deck.
8. The object of the game is to remove all of the cards in the pyramid.



- In this example, the 10 card can be removed and one of the 6 cards and 4 card can be removed.
- If the 6 card in the bottom row and the 4 card in the bottom row are removed, the 5 card in the second row will be uncovered and playable.
- The 7 and 3 cannot be removed because the 7 is partially covered by the 9 card.





# Number Line Race

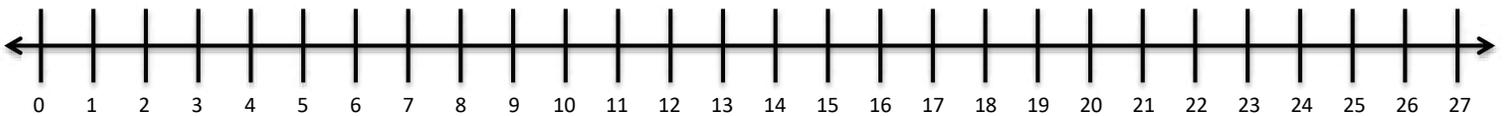
## For 2 Players

### Supplies:

- 2 number or dot cubes
- 2 game pieces
- 2 index cards. Draw a + sign on one and a - sign on the other.
- Paper bag
- Number line 0-27 (use this one or make your own)

### How to Play:

1. Decide who goes first. Take turns playing.
2. Put the index cards in a bag.
3. Player 1 rolls the dot cube and selects an index card from the bag.
4. They move the number of places rolled on the number line.
5. Plus (+) moves right to left on the number line. Minus (-) moves left to right on the number line.
6. If they cannot move the number of spaces rolled, they lose their turn.
7. The winner is the first person who reaches 27 on the number line.



# Make Ten Concentration

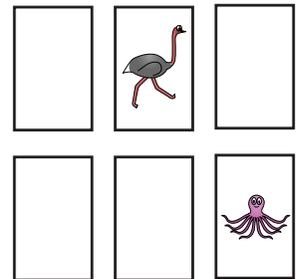
## For 2 to 4 Players

### Supplies:

- 2 decks of JiJi Creature Cards

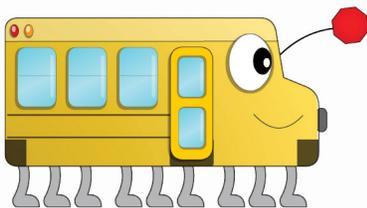
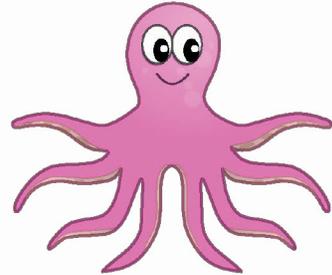
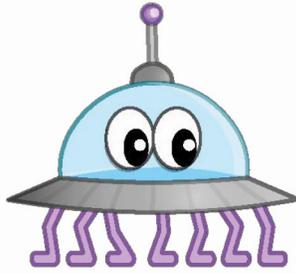
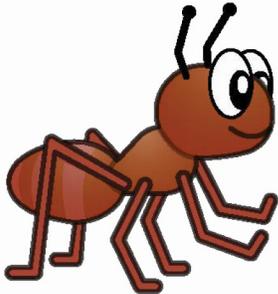
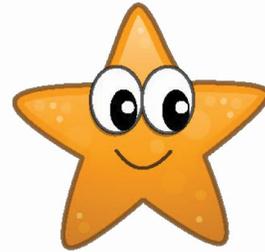
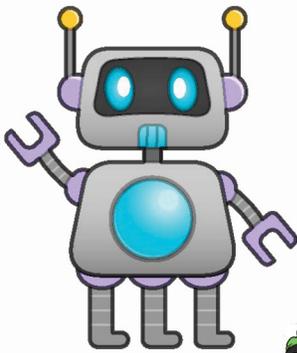
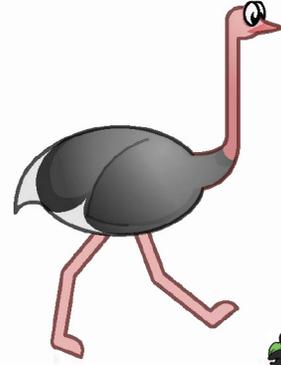
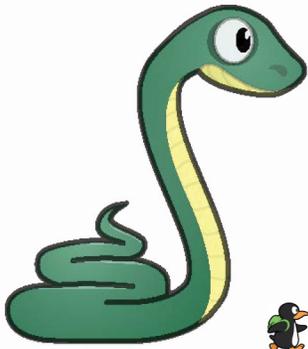
### How to Pla

1. Shuffle the cards and place them face down in an array.
2. Players take turns flipping two cards face up.
3. If the cards (number of feet) add up to 10, the player keeps those cards.
4. If the cards do not add up to 10, they are turned face down.
5. The player plays until they do not have a make-ten match.
6. Play continues until all cards are removed.
7. The winner is the player with the most cards.





# Creature Cards





# Number Line Bingo

## For 2 to 4 Players

### Supplies:

- 1 deck of cards with face cards removed
- Number line 0 to 20 for each player
- 4 centimeter cubes for each player

### How to Play:

1. Shuffle cards and place face down in the center.
2. Each player places their centimeter cubes on various numbers on their number line. (They can place more than one cube on the same number.)
3. Players take turns flipping over two cards at a time. Each player can decide to add or subtract the numbers on the cards. If their sum or difference is a number that they have a cube on, they get to remove the cube. If they have more than one cube on a number they can only remove one of the cubes.



# Tic-Tac-Ten

## For 2 Players

### Supplies:

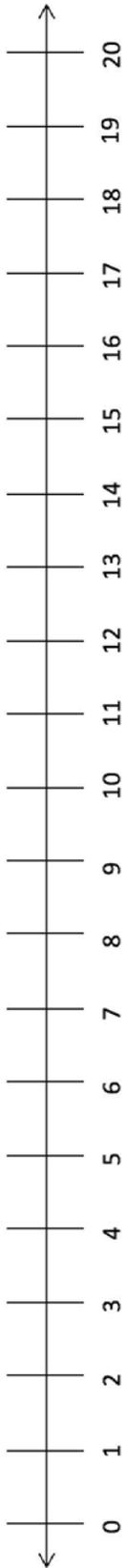
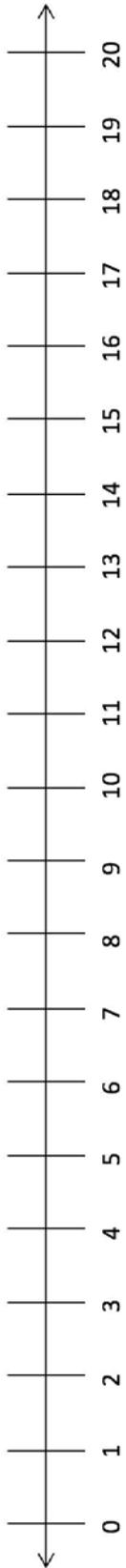
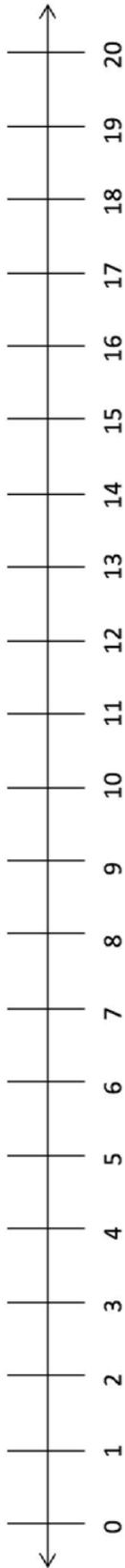
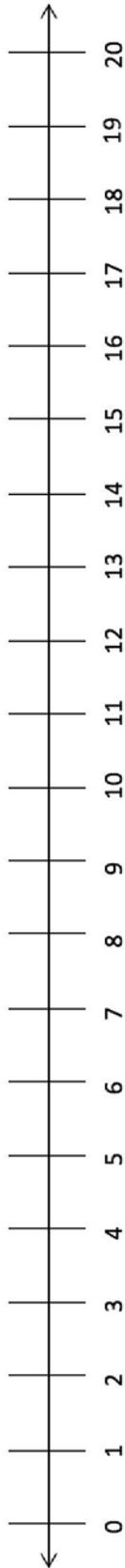
- Ace-10 cards from a deck of cards or a dot cube
- Tic-Tac-Ten board
- Small game pieces

### How to Play:

1. Take turns picking a card or throwing the dot cube. Place that number of dots in one of the ten frames on the board.
2. Put all of your dots in only one ten frame. You cannot split them up and you cannot have more than ten dots in a frame. You must use all of the dots.
3. The player who completes a ten frame puts a marker in that square.
4. If a player cannot place all of their dots in one frame, they lose their turn.
5. The winner is the player who has three markers in a row (across, up and down, or diagonal).

# Number Line Bingo

Cut out number lines



# Tic-Tac-Ten Game Board












# Addition Connect Four

## For 2 Players

### Supplies:

- Two paper clips
- Two different color chips or game pieces

### How to Play:

1. Player One places a paper clip on a number on the bottom strip.
2. Player Two places a paper clip on a number on the bottom strip, adds the two numbers, and places their piece on that number (sum) on the board.
3. Player One moves one paper clip, adds the two numbers, and places their piece on that number (sum) on the board.
4. Play continues until one player has 4 of their pieces in a row, on the board, without any of the opponent's markers in between their four markers (across, up and down, or diagonal).
5. The first player with four pieces in a row wins.

### Examples

12	15	20	16	7	●	20	15
13	18	10	20	15	●	19	9
11	8	17	13	18	●	10	16
10	6	14	11	9	●	●	19
13	16	4	●	●	●	●	●

12	15	20	16	●	9	20	15
13	18	10	●	●	12	19	9
11	8	●	●	●	14	10	16
10	●	●	●	●	10	15	19
13	●	●	●	●	20	12	5

12	15	20	16	7	9	20	15
13	18	10	20	15	12	19	9
11	8	17	13	18	14	10	16
10	●	●	●	●	10	15	19
●	●	●	●	●	20	12	5

### Non-Examples

12	15	20	16	7	●	20	15
13	18	10	20	●	●	19	9
11	8	17	●	●	●	10	16
10	6	●	●	●	●	15	19
13	●	●	●	●	●	12	5

12	15	20	16	7	9	20	15
13	18	10	20	15	12	19	9
11	8	●	13	18	14	10	16
●	●	●	●	●	10	15	19
●	●	●	●	●	20	12	5

12	15	20	16	7	9	20	15
13	18	●	20	15	12	19	9
11	●	●	13	18	14	10	16
●	●	●	●	9	10	15	19
●	●	●	●	17	20	12	5

## Addition Connect Four

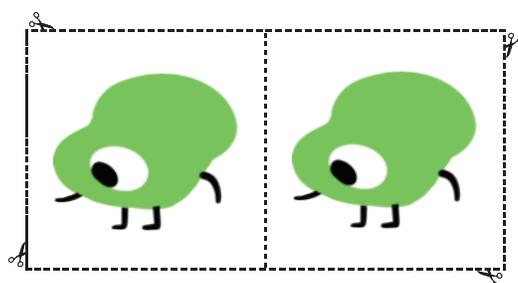
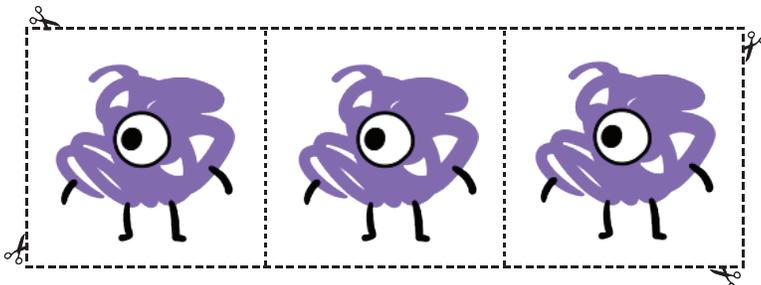
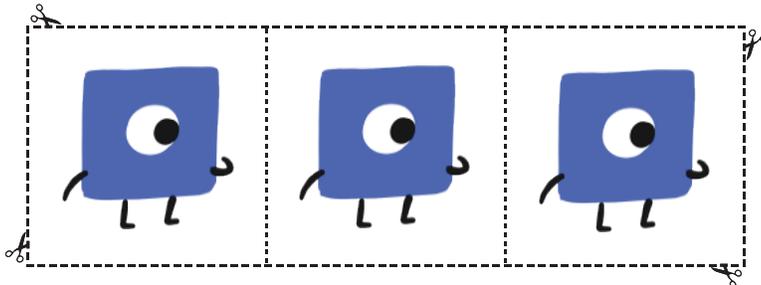
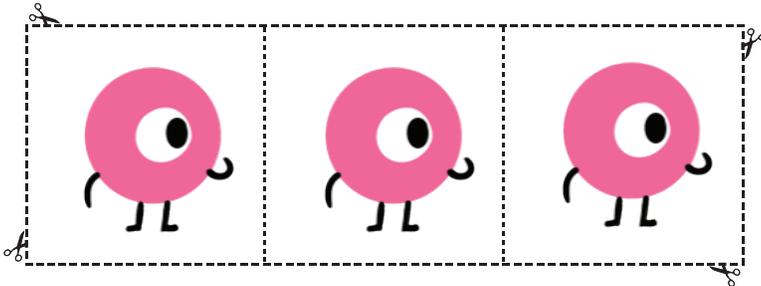
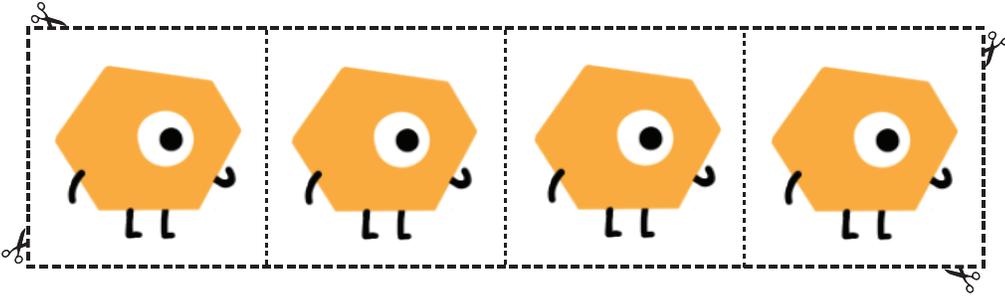
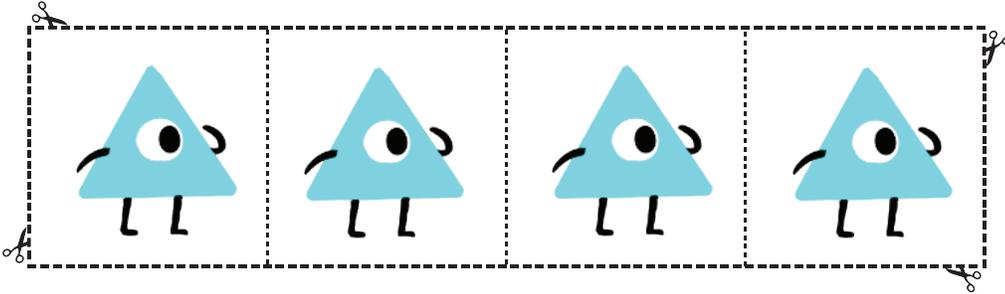
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13	18	10	20	15	12	19	9
11	8	17	13	18	14	10	16
10	6	14	11	9	10	15	19
13	16	4	8	17	20	12	5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
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# Sudoku

Difficulty Level: Easy

# Sudoku

Difficulty Level: Easy  
Puzzle pieces

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3			2
	4	1	
	3	2	
4			1

Beginner

2	3	4	1
3	4	1	2

Beginner

						9	2	6
2	6		9	1		5		
	5	4		3				
6			8		5		9	7
8								1
5	4		1		9			2
				2		1	6	
		2		9	6		3	5
3	8	6						

Easy

	9	3	1		5	6	4	
7								5
5		1	2		9	3		7
2								3
	3	6	9		7	5	2	
9								1
3		2	4		8	1		9
6								4
	4	7	3		2	8	5	

Easy



# Creature Target Number Game

Use the ST Math Creature Board to pose these questions to your children. This is a great way to help them practice their math skills.

## Directions:

- Give your child the ST Math Creature Board.
  - Children can make their own ST Math Creature Board. The challenge is to see how many shoes each creature can wear.
  - Snake = 0, Eyeball = 1, Ostrich = 2, Robot = 3, Dog = 4, Starfish = 5*
  - Ant = 6, Alien = 7, Octopus = 8, Bus = 9, Centipede = 10*
- Give your child a target number of shoes. (Choose any number 10, 24, 18, etc.)
- Have your child identify the creatures who can wear the same number of shoes as the target number.
- Your child may use any combination of creatures.
  - Example: Give a target number of 10. Children may choose one dog and one ant ( $4 + 6$ ) or one octopus and one ostrich ( $8 + 2$ ).
- Older children may use any operation to make a target number.
  - Give a target number of 18. Children may choose three ants ( $3 \times 6$ ) or four stars minus an ostrich ( $4 \times 5 - 2$ ).

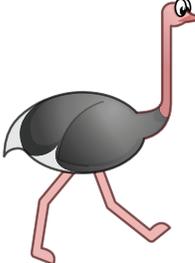
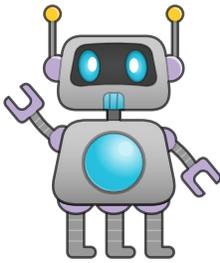
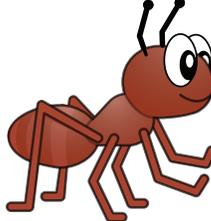
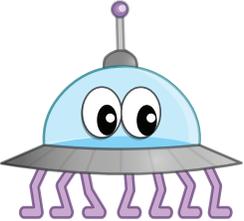
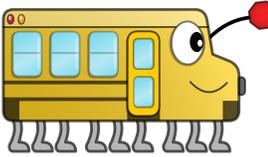
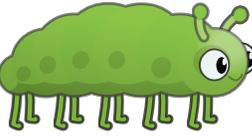
**ST Math**

CREATURE BOARD			
			
			
			Target Number

Thinking Space

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# CREATURE BOARD

			
			
			Target Number

## Thinking Space