School's Out for the Summer!

A comprehensive list of math activities to keep your child's brain in the game!

Madison Public Schools

Grades K-6

2018

Dear Parents and Families,

Summertime is a great time to help children investigate mathematical concepts in a variety of exciting ways. Playing games, telling math stories, solving real world problems, and using technology are just a few fun ways to help our students retain their number sense and to further develop their computational fluency.

In Madison Public Schools, we are placing emphasis on how children understand mathematical problems and strategies, rather than memorization of rules, algorithms, and formulas. In this packet, you will find descriptions of many of the strategies your child is learning in school to develop fluency in computation. We encourage you to refer to these strategies while playing games at home with your child.

Jo Boaler, professor at Stanford University, writes, "It is really important to communicate 'growth mindset' messages to students… the latest research is telling us that students can reach any levels in math because of the incredible plasticity of the brain." Our goal is to help your children believe in themselves and speak the language of mathematics more fluently. This packet provides many ideas for how to develop your child's numeracy skills through fun and engaging math games and activities this summer. Attached are activity menus for each grade level with a variety of ways your child can engage in math activities this summer. Each child is asked to try to complete any 10 squares on the menu for the grade level they are entering in the fall over the course of the summer. Squares can be colored in or circled to indicate which activities were completed. Please return the menu to your teacher at the beginning of the 2018-2019 school year.

Happy Learning! Best wishes for a safe, fun-filled, mathematical summer!
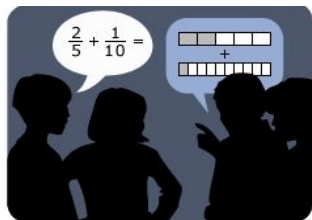

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QUESTIONS TO ASK TO HELP YOUR CHILD TO BECOME MATHEMATICALLY PROFICIENT

1 Make sense of problems and persevere in solving them.	• How would you describe the problem **in your own words**? • What do you know that is **not stated** in the problem? • Would it help to create a diagram? Make a table? Draw a picture? • Can you plan a way to solve this problem and stick through it?
2 Reason abstractly and quantitatively.	• What does it mean when… • Can you use pictures and words to describe numbers? • Can you use numbers to describe pictures and words?
3 Construct viable arguments and critique the reasoning of others.	• What do you think about what _____ said? • Do you agree? Why/why not? • Can you explain what _____ is saying? • Can you explain why his/her strategy works? • How is your strategy similar to _____'s? • Can you convince the rest of us that your answer makes sense?
4 Model with mathematics.	• What number sentence represents your drawing/picture? • How could we use symbols to represent what's happening?
5 Use appropriate tools strategically.	• How did using that tool help you solve the problem? • If we didn't have access to that tool, what other one would you have chosen? • What might be the best tool to help us solve this problem? Why?
6 Attend to precision.	• Can you tell me why that is true? • How did you reach your conclusion? • How does your answer connect to the question? Does it make sense? • Can you make a model to show that? • Can you convince the rest of us that your answer makes sense? • What new words did you use today? How did you use them?
7 Look for and make use of structure.	• How do you know your rule/equation will always work? • Are there patterns that help us understand these numbers? Shapes?
8 Look for and express regularity in repeated reasoning.	• Is there a shortcut / algorithm you could use? • Do the solutions have anything in common?

Math DOs and DON'Ts

Do	Don't
All Ages: ✔ Ask "How did you get that?" "Can you show me another way to do that?" "Remember how you did ____, see if you can use that same strategy." ✔ Ask your children to explain how they came up with the answer. It is great practice to have them verbalize strategies that they used to figure out the answer to a problem. ✔ Help foster a positive attitude about math. ✔ Play games and talk about math in the real world	✔ Try not to tell your child how to figure something out; he or she will learn much more by figuring it out for him or herself. You can always say, "Show me how you figured that out." Then wait and listen and say, "Oh, that's interesting. Here's how I figured it out."
Entering 1st Grade ✔ Count with your child whenever possible. Practice counting up and practice counting down. Count small groups of items and play games that reinforce counting, which includes everything from Chutes & Ladders and dominoes to Parcheesi. ✔ Have your child practice estimating. Show them small groups of items and ask them to estimate how many are in the group. Then count them and check your estimates.	✔ Don't teach your child to do standard addition, subtraction, multiplication, and division algorithms. Research has shown that if children memorize a way of solving a problem before they develop the understanding it actually makes learning the ideas more difficult.
Entering 2nd Grade ✔ Reinforce addition and subtraction facts for the numbers 1 through 10. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. And don't try to lose: your child will beat you soon enough! Have fun together.	✔ Please, do not introduce the "carrying" addition algorithm. It is a quick and efficient way to add, and all of us learned to add that way, but children who are introduced to this algorithm too soon lose all sense of the base ten number system and have a hard time telling if their answer makes sense.

✔ Practice estimating to develop measurement sense: Try estimating the number of windows in your house, then count and see. How about pairs of shoes? Can you make an "educated guess"? Do you have personal benchmarks to help you decide when something is about an inch or a foot long? How many pounds is that watermelon? How heavy is your dog?

✔ Please, do not introduce the "borrowing" subtraction algorithm. It is a quick and efficient way to subtract, and we all learned to subtract that way, but children who are introduced to this algorithm too soon have a much harder time understanding other subtraction strategies and truly understanding what happens during subtraction. Don't worry, they will be introduced to the algorithm in 3rd grade, but not until they have llearned what subtraction is all about!

Entering 3rd Grade

✔ Reinforce addition and subtraction facts for the numbers 1 through 20. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. And don't try to lose: your child will beat you soon enough! Have fun together.

✔ Reinforce the addition and subtraction strategies they learned in second grade in the context of story problems that you can have fun making up.

✔ Practice estimating to develop measurement sense: Try estimating the size of the crowd if you go to a concert or stadium together. Do you have personal benchmarks to help you decide when something is about an inch or a foot long? How many pounds is that watermelon?

✔ Please, do not try to teach the standard algorithms for any of the operations. It truly makes it harder for them to develop a solid conceptual understanding of the relationships between operations.They will be introduced to the standard algorithm for addition and subtraction later in the year.

Entering 4th grade:

✔ Reinforce basic addition, subtraction, multiplication and division facts. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and

✔ Please, do not teach your child the standard algorithm for multiplication and long division. They will learn the algorithms in 5th & 6th grade after they have had a chance to develop a better conceptual sense of multiplication and

grown-ups are playing together. There are hundreds of games online.

✔ Reinforce the addition and subtraction strategies they learned in third grade in the context of story problems that you can have fun making up.

✔ Practice estimating to develop measurement sense: Compare metric and standard units. How much would you weigh on the moon?

division and have learned to divide a much easier way!

Entering 5th grade:

✔ Reinforce basic addition, subtraction, multiplication and division facts. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. There are hundreds of games online.

✔ Make your child aware of fractions and decimals in their world while at the grocery store, using money, weighing themselves, dividing a pie or pan of brownies.

✔ Please, do not teach your child the standard algorithm for multiplication and long division. They will learn the algorithms in 5th & 6th grade after they have had a chance to develop a better conceptual sense of multiplication and division and have learned to divide a much easier way!

✔ Please, do not teach your child how to multiply or divide fractions without embedding the problem in a word problem and without using a visual model. Students will 'discover' efficient methods of multiplying and dividing fractions in grade 5 and 6. This discovery leads to greater conceptual understanding than when students are given a procedure.

Entering 6th grade:

✔ Reinforce basic addition, subtraction, multiplication and division facts. The MOST effective way to do this is through games, not flash cards or workbooks. The games work best when kids and grown-ups are playing together. There are hundreds of games online.

✔ Go grocery shopping and compare prices per pound, count change, bake and cook, measure and sew, calculate miles per gallon when you buy gasoline, determine batting averages.

✔ Please, do not teach your child how to multiply or divide fractions without embedding the problem in a word problem and without using a visual model. Students will 'discover' efficient methods of multiplying and dividing fractions in grade 5 and 6. This discovery leads to greater conceptual understanding than when students are given a procedure.

Real World Math Fun to Create at Home

Order Dinner Out for Your Family

Choose a local restaurant from which you can order dinner.

- Using a menu from the restaurant, determine what you would order for each family member. Keep in mind that it should be a balanced, healthy meal.
- Determine the total cost to order those items.

Plan a Fun Day for your Family

Choose what you will do for the day and plan a time schedule.

- Figure out if there is a cost associated with any of the activities you have planned. Calculate the total cost.
- If you need to travel, figure out the route you will take and the amount of time it will take you to travel.
- Plan for meals.

Geometry Fun!

Go on a scavenger hunt around the house and collect 2-D and 3-D shapes.

- Build something with them listing all of the shapes you used.
- Sort them by attribute
- Build some 3-D shapes using mini-marshmallows or playdough and toothpicks!
- How many corners does your shape have? How many edges?

Design a Garden

Create a plan for a garden in your yard.

- Decide on the size and shape of the garden.
- How big is the garden - calculate its area. How much fencing would be needed to keep out the deer - calculate the perimeter.
- Plan out what plants you will include in your garden, where you will place them in the garden, and how they should be spaced.
- How much mulch do you need to order if you want to put it down 3" thick in your flower beds?
- How much mulch do you need to order if you want to put it down 3" thick in your flower beds?
- What is the weight of that prize-winning tomato or pumpkin? How many peppers are on the pepper plant? If you need to keep your bean plants 3 inches apart, how many plants will grow on a 12 foot row? How many seeds should you plant?
- Go to the supermarket or farmer's market and find out the cost of fresh vegetables you can grow at home. How much money will you save if you grow it yourself?

Create an Obstacle Course

Create a number (5-10) of fun stations to get you up and moving this summer!

- For example: long jump, skip count jump rope, find hidden objects in a pool/sandbox/ball pit, squeeze a soggy sponge into a measuring cup…be creative!
- For extra math emphasis, add flags to each event that need to be grabbed. Have a fact or problem written on each flag that needs to be solved in order to pass to the next station.
- Use a timer to see how quickly you and your friends can get through the course. You could graph your results and try it more than once to see if you get faster with practice!

Take me out to the ballgame!

Take in a summer baseball game – either at the ballpark or on TV. Baseball's a natural place to see math in action – from a pitcher's ERA to a hitter's on-base percentage.

- Record the events of the game using a scorecard. To find out all about how to keep score, go to Patrick McGovern's fantastic website: The Baseball Scorecard. Then, calculate some statistics about your favorite players! If you really like baseball, run your own team!

Observing Nature

You can do this at the beach or in your backyard! Tally up how many birds, bugs, flowers, trees you see. Can you add them up? Make a bar graph? Try to make up word problems with the data you collected!

Calculate the Amount of Gas Used by the Family Car

When filling the car up at the gas station, it's a great time to begin discussing how many miles the car drives per gallon of gas. Keep track of the number of miles traveled for each tank of gas and how many gallons the car used. Together figure out how many miles the car traveled per gallon of gas. Investigate whether this changes when driving more on the highway versus around town.

Plan a Trip Using Public Transportation

Choose a means of transportation such as Shoreline East Train or Metro North. (You might plan a trip from Madison to Pizza Works in Old Saybrook or from Madison to New Haven to visit Yale Art Museum.)

- Decide where you will begin your trip and where you will end.
- Find a time schedule for the chosen transportation and determine when you will need to leave, how long it will take, how long you will remain at your destination and when you will return home.

You can get really creative with this type of project and give yourself an imaginary amount of money and plan a trip to a place you need to fly to. Then, look into flight schedules and costs.

How Long Did You Read?

Here's a way to practice your reading and your time skills. Look at the clock before you begin a book. Write down the time you started. When you finish reading, look at the clock to see what time you finished.

Can you read the hour and minute? Can you figure out the number of minutes you read?

Take a Vacation!

Before you take off on that family trip, help your parents and get in on the planning! Here are a few examples of where math can be used when taking that family trip:

- Use an atlas and figure out how many miles you'll be driving – the scale of miles is a great example of proportion and measurement used in real life!
- What's your car's fuel efficiency? Add to find out the total cost to fill up the tank throughout your trip; divide to calculate the miles driven per gallon of gas; multiply to determine the cost of a fill-up based on your expected travel distance… is it time to purchase a hybrid vehicle?
- How fast did you get there? Use the car's trip odometer to find out how many miles you've driven, and determine your average speed.

Take a trip to the grocery store!

- Estimate the total bill based on prices of what you are purchasing.
- How much does that bunch of bananas weigh? How much will it cost?
- What is the unit price of your favorite box of cereal? What is the unit of measurement, and how much is the total cost of that box?

In the kitchen – cook up some math!

- Measure all of the ingredients (especially the liquids in the glass measuring cups).
- Challenge yourself to double the recipe or cut the recipe in half – fractions are everywhere!

Back-To-School

- You've gotten that list of needed school supplies from the Brown School website… how much will that cost! Use the advertisements in the Sunday newspapers to find the best deals… and calculate how much you'll spend to get set for the new school year. The costs add up… do you really need that new backpack that won't fit in your locker, or will what you had last year still work for you
- A new wardrobe? At what cost? We know you grew… corn isn't the only thing that grows during the summer! But can you look just as chic with clothes from the outlets as with clothes from the mall?

Summer Math Incentive Programs

Connecticut Summer Math Challenge: The Summer Math Challenge is a free math skills maintenance program based on the Connecticut Core Standards for Mathematics. The program is targeted to students who have just completed 1st through 8th grades and is designed to help kids retain math skills learned during the previous school year. It runs from 6/18/18 to 7/27/18. Go to quantiles.com/summer-math to register.

Greg Tang Summer Math Challenge: During the break, students can go to gregtangmath.com/summer to complete a series of activities found on a grade level appropriate game board. After your child completes a game board, be sure to enter them on the Greg Tang site for a chance to win a prize.

Math Apps

Number Sense (Grade K-1)

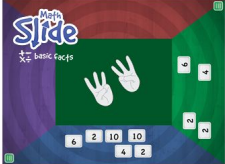| Subitize Tree	NCTM's Concentration	NCTM's Okta's Rescue	Number Flash	Park Math

Number Sense/ Place Value (Grade 1 - 3)

Greg Tang's Ten Frame Mania	Greg Tang's Math Limbo	Zap Zap Math	Marble Math Jr	Electric Sums

Free Apps from the Math Learning Center, the publisher of Bridges in Mathematics

Geoboard	Number Frames	Number Rack	Pattern Shapes	Money Pieces
Math Vocabulary Cards	Number Line	Number Pieces	Number Pieces Basic	Fractions

Addition & Subtraction Fact Fluency

Math Tappers Addition	Math Lines	Make Ten Plus	Hungry Fish	Franklin's Friends of Ten
Math Run Panda	Math Slide Addition and Subtraction	NCTM's Deep Sea Duel	Sushi Monster- Addition/ Subtraction	Kakooma Addition

Multiplication & Division Fact Fluency

Fruit Plate Math	Math Tappers Multiples	Crazy Times Tables	Yatzy Addict	Wuzzit Trouble

Logic/Spatial Math Reasoning

Qwirkle	NCTM KenKen	2048	Thinking Blocks	Name That Number
Twelve A Dozen	Slice Fractions	Solitaire	Flow	Unblock Me

Recommended Websites

http://illuminations.nctm.org/	National Council of Teachers of Mathematics official site for interactive Math games in all areas of number and operations; algebra; geometry; measurement; and data analysis and probability. Some of our favorites include: **Gr. K-2**: Okta's Rescue, Ten Frames, Grouping and Grazing, Concentration, How Many Under the Shell. **Gr. 3 -5**: Deep Sea Duel, the Factor Game, the Product Game, Daily KenKen.
http://www.gregtangmath.com https://gregtangmath.com/summer	Games that have high *math density* where every moment is spent calculating and thinking mathematically, not doing unrelated activities often found in other games. Great computational and abstract thinking skills needed for higher math. We especially recommend NumTanga, Ten Frame Mania, Mqth Limbo, Coin Bubble, Kakooma, Break Apart and Satisfraction. See the "Summer" hyperlink for a challenge and submit your gameboard by September 15th to be entered to win a prize!
http://bedtimemath.org/	A nightly math problem to get kids fired up about math in their everyday lives. There is also an app version.
http://www.mathplayground.com	There are so many great games on this website. The games are broken down by topic: addition, subtraction, multiplication, division, fractions, and even geometry. Be sure to try the Thinking Blocks activity. It is a great way to practice word problems. Older students can practice skills like measuring angles, working with fractions, and creating congruent or similar shapes using transformations.
http://sheppardsoftware.com/math.htm	Again, this website has hundreds of games divided up by topic including the ones mentioned above in addition to: measurement, rounding, decimals, money, time and place value! Some of the kids favorites include: Monkey Drive & Fruit Splat.
http://www.fuelthebrain.com/	Browse by category. This website offers some great models for topics such as adding and subtracting on a number line, building numbers with base ten blocks and dividing with an area model.
https://www.mathlearningcenter.org/resources/apps	This link provides you with a list of all of the free APPS provided by the Math Learning Center, the publisher of Bridges in Mathematics, that your children are using at school.
http://www.mathlearningcenter.org/resources/families	This page provides you with a link to an Amazon virtual library with a list of math books for kids. In addition to the links we have provided, it gives a list of online activities by grade level.
http://www.coolmath-games.com/	This site has an array of different math games including our favorites Math Lines and Number Twins.
http://www.mrnussbaum.com	An academic amusement park, where practice, assessment, standards, competition, reinforcement blend together.
http://www.abcya.com	Grade level specific interactive activities. Gr 1& 2: Try 100 Number Chart, 100 Number Grid, Base Ten Fun Gr 3 & 4: Try Place Value Hockey, Fraction Fling

Multiplication.com	This site has some great games to play by alone or against other kids online! Brown Student favorites include Penguin Jump and Multiplication Grand Prix
Partial Quotients	Quotien Cafe helps make partial quotient division come alive.
Quadrilaterals Shape Shoot	Use your knowledge of quadrilaterals to identify shapes in the game.
Factors and Multiples Jeopardy:	Remember the difference between factors and multiples with this fun on-line game!
Math Maven's Mysteries	For fun logic games
Math Hunt:	Fun with math in science, social studies, and finance.
Simple Maze Game	Simple Maze Game lets you navigate through a coordinate plane mindfield.
Pan Balance Game	Build algabraic thinking by balancing shapes
HoodaMath, Johnnie's Math Page, Rush Hour, and Set Game and Math Warehouse.	Favorite sites recommended by Brown School students.

Great Board, Card, and Dice Games for Practicing Math Skills

I Sea 10!	Pop for Addition & Subtraction	Math Dice Jr.	Sum Swamp
Sumoku	**Albert's Insomnia**	**Mathological Liar**	**tri-FACTa Multiplication**
Free Range Fractions	**Qwirkle**	**Shape Logic**	**Latice Game Board**
Monopoly	**Blokus**	**Battleship**	**7 Ate 9**

For basic operations: Life, Payday, S'Math, Tripoly

Dice games: <u>Marilyn Burns' Favorite Dice Games</u>

Card games: <u>Educational Card Games to Teach Math</u> and Close to 1000: A fun game with cards 1-10 (here's a <u>scoresheet and the directions</u>)

Strategy Games: Mancala, Othello, Connect 4, Chess, Checkers

Patterns and Geometry: Sequence and Geoshaps

Logical Reasoning: Clue, Stratego, SuDoKu
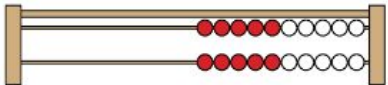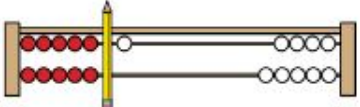
Math Books

Combine summer reading with some of these mathematically rich choices.

Greg Tang

- Math Fables
- Math Fables Too
- Math For All Seasons
- Math-terpieces
- The Grapes of Math
- Math Appeal
- The Best of Times
- Math Potatoes

Cindy Neuschwander

- Patterns in Peru: An Adventure in Patterning
- Pastry School in Paris: An Adventure in Capacity
- Mummy Math: An Adventure in Geometry
- Sir Cumference and the Isle of Immeter
- Sir Cumference and the Great Knight of Angleland
- Sir Cumference and the First Round Table

Stuart J. Murphy

- ...AND 63 OTHER TITLES!
- Lemonade for Sale
- The Penny Pot
- Divide and Ride
- Shark Swimathon
- Safari Park
- Give Me Half
- Less Than Zero
- Elevator Magic
- Game Time
- More or Less

Mitsumasa Anno

- Anno's Magic Seeds
- Anno's Mysterious Multiplying Jar
- Anno's Counting Book

David Schwartz

- If You Hopped Like a Frog
- If You Made a Million
- G is for Google: A Math Alphabet Book
- How Much is a Million
- Millions to Measure
- On Beyond a Million: An Amazing Math Journey
- If Dogs Were Dinosaurs

Marilyn Burns

- The Greedy Triangle
- The I Hate Mathematics! Book
- Math for Smarty Pants
- Brown Paper School Book: Math for Smarty Pants
- This Book Is about Time
- Spaghetti and Meatballs for All
- Amanda Bean's Amazing Dream
- The $1.00 Word Riddle Book

Various Other Authors

- The Number Devil By Hans Magnus
- Math Curse By Jon Scieszka
- Janice Van Cleave's Geometry for Every Kid: Easy Activities That Make Learning Geometry Fun By Janice Pratt Van Cleave
- Math for Kids and Other People, Too! By Theoni Pappas
- Janice Van Cleave's Math for Every Kid: Easy Activities That Make Learning Math Fun By Janice Pratt Van Cleave
- A Wrinkle in Time By Madeleine L'Engle
- The Phantom Tollbooth by Norton Juster

Addition Fact Strategies

Counts All	This is the earliest stage of understanding addition. Children count from one to find the sum. They often use manipulatives or count on their fingers. For 5 + 2, a child will count, "1, 2, 3, 4, 5, 6, 7."	
Counts On	Students understand that it is faster to start with the larger addend and count on.	3 + 6 = 6, 7, 8, 9
Zeros & Ones	Children understand that when you add any number to zero, the sum stays the same. When adding one, the sum grows by 1.	5 + 0= 5 5 + 1 = 6
Doubles	Students come to recognize doubles facts as 'numbers that have a partner' on the number rack, or you can see them in a mirror. They should also notice that sums are always even. Committing these facts to memory will aid in the next strategy.	3 + 3 = 6 7 + 7 = 14 8 + 8 = 16 9 + 9 = 18
Near Doubles (Doubles +/- 1)	Once your child is confident with doubles facts, he/she can be led to recognize doubles plus or minus one facts as close neighbors.	 2+3 3+4 4+5 5+6 6+7 7+8 8+9
Make 10	Begin to recognize "partners" of numbers that make 10. Since our number system is based on 10, when children are good at recognizing the combinations (i.e. 2 + 8; 4 + 6) they can begin to apply this to larger computation (i.e. 12 + 38; 24 + 17)	1 + 9 2 + 8 3 + 7 4 + 6 5 + 5
Add Ten	Students recognize that adding a single digit number to 10 means 10 and some more. This understanding helps children to use strategies to add double digit numbers with ease by using methods that involve place value splitting.	6 + 10 = 16
Near Ten (Add 9)	Since adding 10 to any number is 'easy', students quickly become comfortable seeing 9 as a next-door neighbor to 10. They can add 10 and then take 1 away. Or he/she can choose to take 1 from the other addend to 'make the 9 into a 10'.	9 + 4 = 10 + 4 -1 = 13 **OR** **9 + 4 = 13** ①③
Use known facts / Break Apart	However, if a child has mastered ten facts, he or she could choose to manipulate other facts into ten facts.	8 + 5 = 8 +2 + 3 The 5 could be broken into 2 + 3. The 2 can be quickly added to 8 and now we have an easier fact: 10 + 3.

Fact Fluency Games: Addition

Dice Combinations:
Materials: dice and calculators

Use two dice. Roll the dice and say how many dots are on each die just by looking. Then add the number of dots. Enter the number into your calculator to keep progressive scores. The first person to reach a given number such as 100 wins. Variation: include three dice or dice of varying numbers, like a 4-9 die.

The Game of Pig:
Materials: a pair of dice

Use two dice. Roll dice <u>as many times as you like</u>, adding the dots on the dice and keep a running total of the sum of your rolls. <u>However,</u> if you roll a 1 on one of the dice, your turn is over and 0 is scored for that round. If 1s come up on both dice, your turn is over and your total for the game thus far becomes 0. The first person to reach 100 wins.

Addition War
Materials: a deck of cards

Deal out the deck of cards evenly between players. Face cards can be 10s or removed from the deck. Each player turns over the top two cards and adds them. The player with the larger sum takes all four cards. Variation: each player draws 1, player to announce sum first wins the match. **Variation for subtraction:** the player with the larger number takes the two cards. They will also take as many beans or counters as the difference between the two numbers turned over (Ex: 6 and 4 are turned over, the player who turned over the 6 gets to take 2 beans). **Add difficulty:** have each player turn over two cards each turn and add the sum of the cards.

Addition "Go Fish":
Materials: a deck of cards

Use Aces as 1s and 2 – 9 from a deck of cards. Deal out 7 cards to each player. Place the remaining cards face down in the middle. Begin by players looking through their hands to see if they have matches, or combinations of 2 cards that will add to 10. Play begins as players take turns asking others for numbers they need to make a ten. **Variation:** use flashcards or index cards with addition facts written but no answers. Matches/pairs are made by matching sums. (i.e. 3+ 2 and 4 +1 are a match). Players ask another for a sum for a card they have in their hand.

Addition Memory:
Materials: flashcards/index cards with addition facts w/o answers

Place the cards face down on a table or the floor in an orderly fashion. On each player's turn, he or she turns over two cards and determines the sum on each card. If the sums are equal, the player has made a match and keeps the cards. (Thus, 8+1 and 3+6 can be a match.) If the sums are not equal, the two cards are turned back over and left in their same place.

Sum Cross Out:
Materials: *2 dice and paper*

Each player writes 15 numbers using the numbers 1 - 9. Numbers may be used multiple times and not all numbers need to be used. The dice are rolled and the sum of the dice is determined. All players cross that sum out in any way possible on their lists. Thus, if you have the numbers, 1, 1, 1, 1, 2, 2, 2, 3, 3,5, 5, 5, 5, 6, 6 written on your paper and you roll a 7, you can cross out any combinations equaling 7. You could cross out 2 and 5; or 1, 3, and 3; or 6 and 1; etc. The game ends when one player crosses out all of his or her numbers <u>or</u> when no one can cross out a combination on their sheets.

Subtraction Strategies

Zero Facts	When you subtract 0 from any number, the difference is always the number you started with. 9 – 0 = 9
Count Back	When subtracting 1 or 2, you can count back. 8 – 2 ➡ 8, 7, 6 ➡ 8 – 2 = 6
Take All	Any number minus itself is always 0. 7 – 7 = 0
Use Addition	You can think about a subtraction problem in terms of addition. 8 – 5 ➡ 5 + ? = 8 ➡ 5 + **3** = 8 ➡ 8 – 5 = **3**
Use Double Facts (Take Half)	You can recognize double facts in subtraction problems. 16 – 8 ➡ 8 + 8 = 16 ➡ 16 – 8 = 8
Neighbor Facts	The difference between two numbers that live next door to each other is always 1. 10 – 9 = 1 6 – 5 = 1
Use Make 10 Facts	Use addition combinations of 10 to solve subtraction problems from 10. 10 – 6 ➡ 6 + ? = 10 ➡ 6 + **4** = 10 ➡ 10 – 6 = **4**
Up to 10 and More Facts	Add to the smaller number to make ten. Then add more to reach the larger number. The total amount you add is the difference. 15 – 8 ➡ 8 + **2** = 10, 10 + **5** = 15 ➡ 2 + 5 = 7 ➡ 15 – 8 = 7

Games to Practice Subtraction Facts

Subtraction War: Materials: a deck of cards and small objects such as kidney beans or small blocks

Deal out the entire deck of cards evenly between two players. Face cards can be viewed as the number 10 or can be removed from the deck for the game. Each player turns over the top card from his or her deck. The player with the larger number takes the two cards and as many beans or counters as the difference between the two numbers turned over. Thus, if 6 and 4 are turned over, the player who turned over the 6 gets to take 2 bean because 6-4 = 2. If the same card is turned over by each player, two more cards are turned over and the player with the larger number takes all of the cards and the difference between the larger and smaller number in beans. The game is over when one player has no cards left. The winner is the player with the most beans.

This game can be varied to increase the difficulty by having each player turn over two cards on his or her turn and adding the sum of the cards. The player with the larger sum takes all four cards and the number of beans determined by the difference between the two sums. Thus, if player A turns over a 4 and 6 and player B turns over a 2 and 5, player A takes the cards because 10 is greater than 7. He also takes 3 beans because 10 – 7 = 3.

Subtraction "Go Fish":

Materials: Flashcards or index cards with subtraction facts written on them but no answers

Each player is dealt 7 cards. Matches or pairs are made by matching differences. Thus 12 - 9 and 8 - 5 can be a match. On a player's turn, he or she asks another player for a difference that would make a match with a card in his or her hand. Thus if the player has 18 -9 in his hand, he would ask another player for a 9. If that player has 12 - 3 or any other card equaling 9, a match has been made. Otherwise, the player is told to "Go Fish."

Make a Subtraction Problem: Materials: A deck of playing cards

Place 7 cards face side up between the players. The object is to use any 3 cards to make a subtraction problem on your turn. If you are unable to make a problem on your turn, you can remove 3 cards and replace them. Keep taking turns making problems until the cards have all been used or you can no longer make any problems.
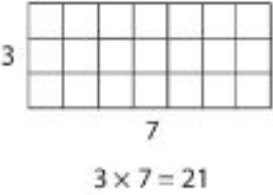
X-Ray Vision: Materials: A paper bag, 2 dice, a number of 12 - 15 objects, paper

Player 1 rolls the dice, adds the numbers and takes that many objects out of the bag. Player 1 tries to figure out what is left in the bag. Both players look in the bag to check. Players than record an equation to match what they just did such as 15 - 9 = 6. Then, player 1 places the objects back in the bag and player 2 goes. Continue switching roles until you have recorded 10 equations.

Race to Zero: Materials: A die, paper

Both players start at 100. Player 1 rolls the die, decides whether to use the number as a ten or as a one and subtracts the number from 100. (Example: a 3 can be 30 or 3). Player 2 repeats the same steps. Play continues until each player has rolled seven times. The player closer to zero after the seventh round is the winner. If a player reaches zero before the seventh round, the game is over and the other player wins.

Multiplication Fact Strategies

Repeated Addition		As students begin learning multiplication, they see the connection between multiplication and repeated addition.	3 x 4 = 4 + 4 + 4 6 x 5 = 5 + 5 + 5 + 5 + 5 + 5
Visualizing Arrays		The array provides a visual model for multiplication. The numbers being multiplied correspond to the dimensions of the rectangle and the product of those numbers correspond to the area of the rectangle.	 3 × 7 = 21
x 0	Zero Property	The product of any number and 0 is 0.	4 x 0 = 0 0 x 65 = 0
x 1	Identity Property	The product of any number and 1 is that number.	5 x 1 = 5 1 x 43 = 43
x 10	Times Ten	Focus on the base ten aspect of our number system. Discuss moving a place.	6 x 10 = 60 45 x 10 = 450
x 5	Half Ten	To multiply by 5, multiply by 10 and then divide the result in half. 5 = 10 ÷ 2	5 x 3= (10 x 3) ÷ 2 = 30 ÷ 2 = 15 5 x 18 = (10 x 18) ÷2= 180÷2=90
x 2	Doubles	To multiply by 2, double the other number or think of the addition doubles.	2 x 5 = 5 + 5 = 10 14 x 2 = 14 + 14 = 28

x 4	Double-Double	To multiply by 4, double the other number and then double the result. 4 = 2 + 2	$4 \times 6 = 2 \times (2 \times 6) = 2 \times 12 = 24$ $4 \times 24 = 2 \times (2 \times 24) = 2 \times 48 = 96$
x 8	Double-Double-Double	To multiply by 8, double the other number, double the result and double it again. 8 = 2 x 2 x 2	$8 \times 6 = ((6 \times 2) \times 2) \times 2 =$ $(12 \times 2) \times 2 = 24 \times 2 = 48$ $8 \times 43 = ((43 \times 2) \times 2) \times 2 =$ $(86 \times 2) \times 2 = 172 \times 2 = 344$
x 9	Ten Minus a Set	To multiply by 9, multiply the number first by ten and then subtract a set of that number. 9 = 10 - 1	$9 \times 6 = (10 \times 6) - 6 = 60 - 6 = 54$ $9 \times 45 = (10 \times 45) - 45 =$ $450 - 45 = 405$
x 3	Double Plus a Set	To multiply by 3, double the other number than add one more set of that number. 3 = 2 + 1	$3 \times 6 = (2 \times 6) + 6$ $3 \times 15 = (2 \times 15) + 15$
x 6	Half Ten Plus a Set	To multiply by 6, carry out the steps for multiplying by 5 and then add a set. 6 = 5 + 1	$6 \times 7 = ((10 \times 7) \div 2) + 7 = 42$ $6 \times 42 = ((10 \times 42) \div 2) + 42 =$ $(420 \div 2) + 42 = 210 + 42 = 252$

Fact Fluency Games: Multiplication

Multiplication War:

As with War and Addition War, each player turns over the top two cards from his or her deck and multiplies them. The player with the larger product takes all four cards.

Multiplication "Go Fish":

Matches or pairs are made by matching products. On a player's turn, he or she asks another player for a product that would make a match with a card in his or her hand. Otherwise, the player is told to "Go Fish."

Multiplication "Memory":

As with other Memory games, players take turns flipping two cards. If the products are equal, the player has made a match and keeps the cards. If products are not equal, the cards are turned back over.

Array Games:

Materials: graph paper

Make rectangular arrays for the multiplication facts, and cut them out. Then, label the dimensions on one side and the answer on the other side. For example:

Front: **Back:**
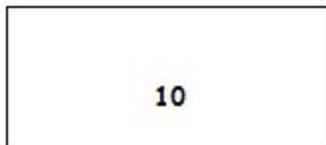
You can then use the arrays to look at the dimensions and give the total or, given the total, state the dimensions. Another variation could be a game of "big array, small array" in which you lay 5 large arrays out for each player. Take turns finding two arrays that can cover a big array completely for a "match".

Draw the Array Game:

Materials: graph paper, pair of dice

Each player gets a piece of graph paper. On a player's turn, he rolls the dice. The dice will tell the player the dimensions of a rectangle to draw on the graph paper. So, if the player rolls a 3 and a 4, the player draws a 3 by 4 rectangle on the graph paper. Inside the rectangle, the player records 3 X 4 = 12. Then, the next player rolls. Play continues until one of the players can't place a rectangle on the graph paper because there is no room left. Each player figures out the total number of squares covered on the graph paper. The winner has covered the most squares.

Multiplication Baseball

Materials: pair of dice, coins or small markers to use as players around the bases.

Decide who will be up to bat first. The other player will be the pitcher. The pitcher rolls the dice. The player up to bat must find the product of the dice rolled. Use the following game board to move your game pieces around the bases. After 3 outs, players switch rolls.

Baseball Multiplication Record Sheet
(Game Master 5)

Scoreboard

Inning	1	2	3	4	5	6	7
Team 1							
Team 2							

Runs and Outs Table

Team 1		Team 2	
Runs	Outs	Runs	Outs

Scoring Chart
(for regular dice)

```
      36 = Home run (score a run)
   26-35 = Triple (go to 3rd base)
   16-25 = Double (go to 2nd base)
    6-15 = Single (go to 1st base)
5 or less = Out (record an out)
```

2nd Base

3rd Base   1st Base

Home
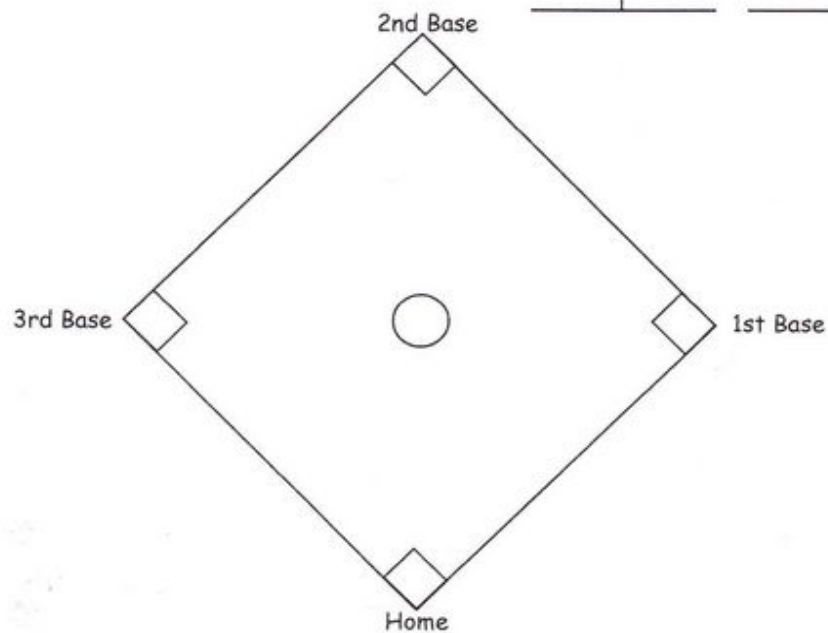
Division Strategies	
Zero Property (Dividing 0 by a number)	When you divide 0 by a number, the quotient is always 0. $0 \div 4 = 0$
Identity Property (Dividing by 1)	When you divide a number by 1, the quotient is that number. $6 \div 1 = 6$
Dividing a Number by Itself	When you divide a number by itself, the quotient is always 1. $7 \div 7 = 1$
Use Double Facts (Dividing by 2)	When dividing by 2, you break the number in half. $18 \div 2$ ➡ half of 18 is 9 because $9 \times 2 = 18$
Use Double Double Facts (Dividing by 4)	When dividing by 4, you can break the number in half and then half again. $24 \div 4$ ➡ $24 \div 2 = 12$ ➡ $12 \div 2 = 6$
Use Double Double Double Facts (Dividing by 8)	When dividing by 8, you can break the number in half, then half again and then half again. $64 \div 8$ ➡ $64 \div 2 = 32$ ➡ $32 \div 2 = 16$ ➡ $16 \div 2 = 8$
Use Half Facts	Look for the doubles multiplication facts in division problems. The quotient is always 2. $18 \div 9 = 2$ $14 \div 7 = 2$
Five is Half of Ten	$60 \div 5$ Think $60 \div 10 = 6$; half as many groups means twice as many in each group. So $60 \div 5 = 12$
Think Multiplication	You can think about a division problem in terms of multiplication. $24 \div 6$ ➡ $6 \times ? = 24$ ➡ $6 \times 4 = 24$

Fact Fluency Games: Division

Division "Go Fish"

Materials: Flashcards or index cards with division facts written on them but no answers

Matches or pairs are made by matching quotients. (16 ÷ 4 and 8 ÷ 2 are a match) Players ask another for a quotient that would make a match with a card in his or her hand. Thus if the player has 12 ÷ 3 in his hand, he would ask another player for a 4. If that player has 24 ÷ 6 or any other card equaling 4, a match has been made, or "go fish".

Division Memory: **Materials**: division flashcards/index cards with division facts written w/o answers

Place cards face down on a table or the floor. On each player's turn, he or she turns over two cards and determines the quotient on each. If the quotients are equal, the player has made a match and keeps the cards. (Thus, 24 ÷ 8 and 6 ÷ 2 can be a match.) If the quotients are not equal, the two cards are turned back over and left in their place. The game ends when all matches are made. The winner is the player with the most matches.

Get Seven: **Materials:** 48 cards with one of the following written:

4 ÷ 1	8 ÷ 2	12 ÷ 3	16 ÷ 4	20 ÷ 5	24 ÷ 6
5 ÷ 1	10 ÷ 2	15 ÷ 3	20 ÷ 4	25 ÷ 5	30 ÷ 6
6 ÷ 1	12 ÷ 2	18 ÷ 3	24 ÷ 4	30 ÷ 5	36 ÷ 6
7 ÷ 1	14 ÷ 2	21 ÷ 3	28 ÷ 4	35 ÷ 5	42 ÷ 6
28 ÷ 7	32 ÷ 8	36 ÷ 9	40 ÷ 10	44 ÷ 11	48 ÷ 12
35 ÷ 7	40 ÷ 8	45 ÷ 9	50 ÷ 5	55 ÷ 11	60 ÷ 12
42 ÷ 7	48 ÷ 8	54 ÷ 9	60 ÷ 10	66 ÷ 11	72 ÷ 12
49 ÷ 7	56 ÷ 8	63 ÷ 9	70 ÷ 7	77 ÷ 11	84 ÷ 12

Lay cards face down. Each player draws seven cards, hiding cards from the other players. The remaining cards are removed except for one which remains face down. The first player chooses one he does not want and places it face down in front of the player to his left, and then picks up the extra card left on the table. Play rotates clockwise. Each player passes an unwanted card face down to the player on his/her left and then picks up the one given by the player on the right. The objective is to get seven cards with the same quotient. The game continues with players always placing one card on the table before picking up the next one.

What's Up?   **Materials:** Cards: 1, 3, 5, 7, 7, 9. Cards: 1, 2, 4, 6, 6, 8. List on lined paper 10-81.

Players take turns, rotating clockwise. To start, a player crosses out any unused number on the numbered list. All players use the same numbered list. He or she then choose one of the two sets of index cards and chooses one. Next, the player divides the number on the index card into the number he or she just crossed out and finds the remainder. The remainder for the division problem is the player's score for that round. Players keep a cumulative sum of their scores from round to round.A player who notices another player make a mistake acquires that player's score for the turn.The game ends when all of the numbers on the list have been crossed out. The player with the largest cumulative score at the end of the game wins. **To shorten:** use numbers between 20 and 60.

Place Value Games

Place Value Game   *2-3 players*

Materials: 2 dice & Score Sheet

Students will roll a number cube 3 times. The student will use the numbers rolled to form a 3-digit number. They must decide where to place the first number rolled (ones, tens, hundreds) before rolling the next number, etc. A student may re-roll a number ONE time during the GAME. The player with the highest number per round wins that round and gets a point. Continue for 4 rounds. (print 2 score sheets) The player with the most points wins.

Player 1_____ | Player 2_____

hundreds	tens	ones
_____	_____	_____

_____ trash can

hundreds	tens	ones
_____	_____	_____

_____ trash can

hundreds	tens	ones
_____	_____	_____

_____ trash can

hundreds	tens	ones
_____	_____	_____

_____ trash can

Pinch a Ten

Materials: Kidney beans
          Paper and pencil

1.   Students predict how many times they can pinch (grab) exactly 10 beans.
2.   Students predict how many times they think they can pinch 10 beans in 10 tries.
3.   Students create a table to keep a tally of their results.

Less Than 10	10	More Than 10

4.   Have students repeat the activity to see if they can improve their results. Students may use popcorn or other objects instead. They may even add up the total amount of beans that they pinched after ten tries.

Pick a Path

Materials: 2 dice
               Game board

Directions:

⇒   The object of this thinking game is to work together to fill in the game board with numbers in the range of 11 to 66, going from the smallest to largest number.

⇒   Discuss with students that they will be using the dots on the dice to represent digits and they'll use these to create two-digit numbers. For example, if they roll a 2 and a three, they can make the number 23 or 32.

⇒   Students begin by recording the number 11 in the first circle and the number 66 in the last circle.

⇒   Students roll the dice and write the two possible two-digit numbers on a piece of paper. They then decide which number to add to the board and where to place it.

⇒   Play continues until all circles are filled. However, if students roll two digits that do not create a number that can be placed on the board, then the game ends and they have to start over again.

Pick A Path
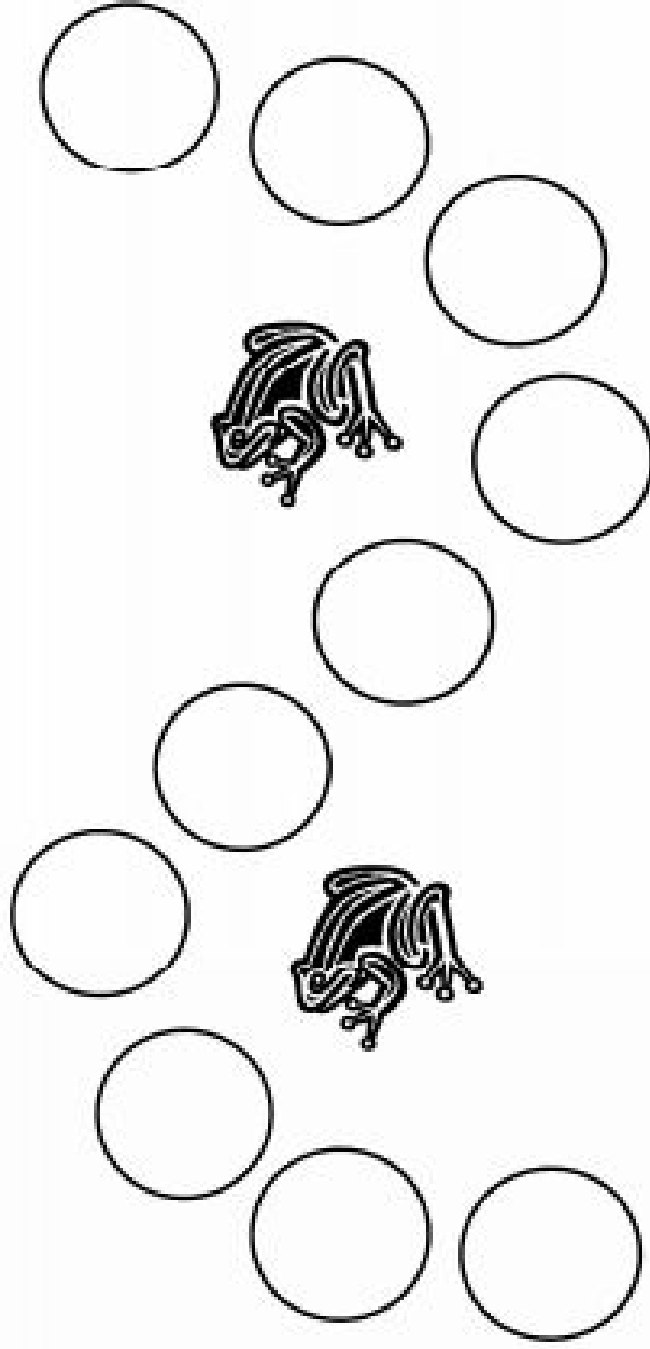
Digit Place

Materials: 2 players
                    Paper

1. One player picks a 2-digit number. (The digits should be different.)
2. The other person tries to guess the number.
3. For each guess, the first person tells how many digits in the guess
    are correct **and** how many of the correct digits are in the correct
    place.
4. A chart may help to keep track of guesses. Do not tell which digit
    is correct - just how many.

Guess	Digit	Place
27	0	0
13	1	1

5. Play again with the other player guessing this time. Can also use
    3-digit numbers.
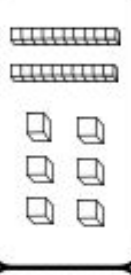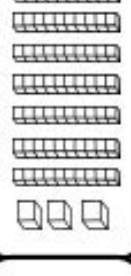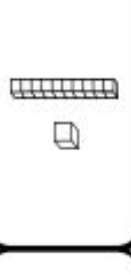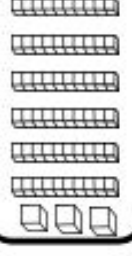
The Largest Number

Materials: 2 players
                    Deck of cards without face cards and without 10s (Ace=1)

1. Shuffle and deal the deck.
2. Players turn over three cards from their pile.
3. Players create the largest number possible with the three digits they
    have turned over.
4. The person with the largest number wins the 6 cards.
5. Continue play until one person wins all the cards or play for a
    specific amount of time.

Extension: Play the same game by forming 2-digit or 4-digit numbers.
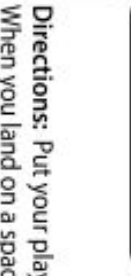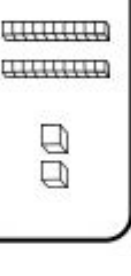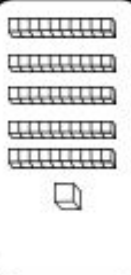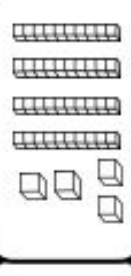
The Place Value Path

Game 2

Directions: Put your playing piece anywhere on the path. Move around the board using a die. When you land on a space, count by tens and ones to get the total number of squares. Find the number on your bingo board and cover or dot it. When you get 5 in a row, the game is over. Have fun!
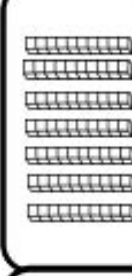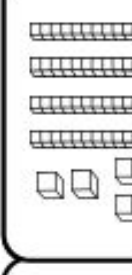
44	17	24	54	25
16	5	26	70	50
2	96	free	46	73
49	63	11	36	40
83	51	22	19	10

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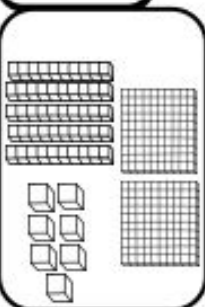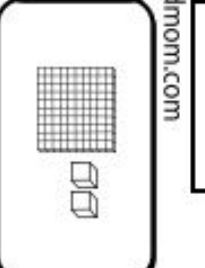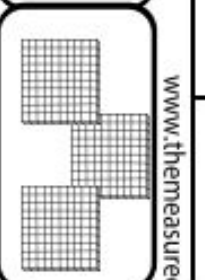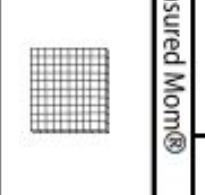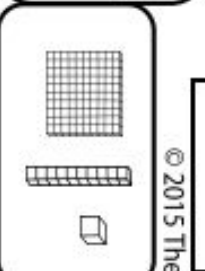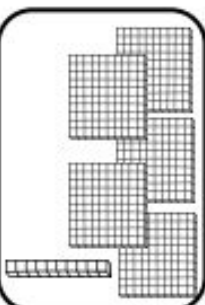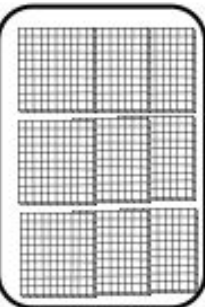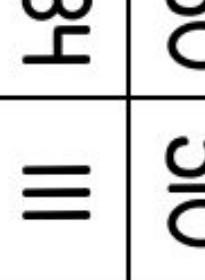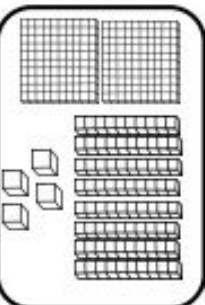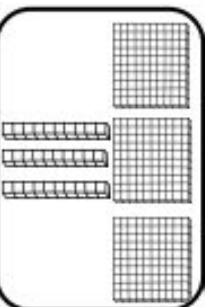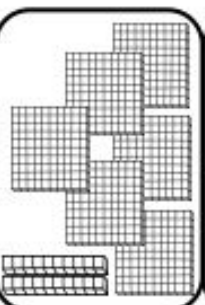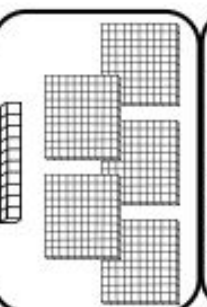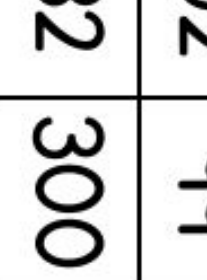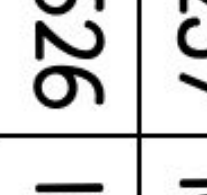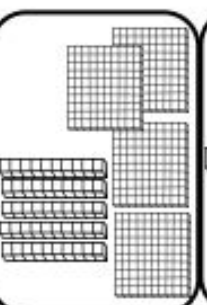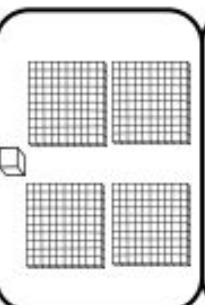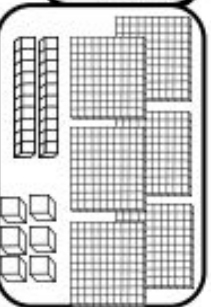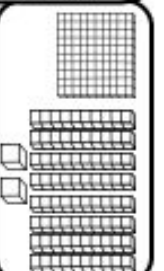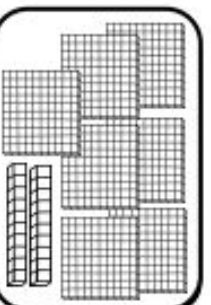
The Place Value Path

Game 3

Directions: Put your playing piece anywhere on the path. Move around the board using a die. When you land on a space, count hundreds, tens, and ones to get the total number of squares. Find the number on your bingo board and cover or dot it. When you get 5 in a row, the game is over.

720	257	102	99	510
100	626	182	300	707
330	40	free	404	100
401	90	450	510	257
620	510	284	111	900

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Entering Grade 1 Summer Math Menu 2018

Play a board game	Play Greg Tang's Ten Frame Mania	Build shapes with Math Learning Center's Pattern Block App **(free)**	Count objects in nature (count shells at the beach, stones on a hike…)	Practice writing your numbers to 20
Play a game on abcya.com **(choose a K or gr 1 game)**	Play a card game	Create a picture using 11-20 objects	Check out bedtimemath.org to practice story problems	Make a favorite recipe with an adult
Count to 100 by 1's and 10's Then try counting backwards!	Get out and Exercise! **Count your hops, skips and jumps! How many kicks, baskets or goals can you make in a row?**	Grab & Count **grab a handful of objects (coins, cereal, beads). Sort them in piles of ten**	Read Greg Tang's book, *The Grapes of Math* **(Available to read for free at gregtangmath.com)**	Build a creation out of blocks or legos. What shapes do you see?
Complete a puzzle **or**	Create a summer calendar **Add the days of the week and number the days. Ask, What day comes before? What day comes after…? How many days until…**	Play an online game on **mathplayground.com** **(choose a grade 1 game)**	Complete a Dot-to-Dot	Estimate… **How many objects (pennies, books,…) can you stack before the tower falls? Then count how high you were able to make the tower.**

Entering Grade 2 Summer Math Menu 2018

Play a board game	Play Greg Tang's Coin Bubble	Build shapes with Math Learning Center's Pattern Block App **(free)**	Practice **addition** facts from the suggested list with an app, game or website	Practice telling time to the hour and half hour (ie. make a clock out of a paper plate or try an online game from abcya.com)
Play an online math game from the suggested list (choose a gr 1 or 2 game)	Play a card game	Grab a handful of coins Can you sort and name each coin?	Check out bedtimemath.org to practice story problems	Make a favorite recipe with an adult
Count to 120 by 1's and 10's Start at a non-decade number (6, 16,26...) Try it backwards!	Get out and Exercise! Count your hops, skips and jumps! How many kicks, baskets or goals can you make in a row?	Grab & Count grab two handfuls of objects (coins, cereal, beads). Can you add them together?	Read Greg Tang's book, *Matherpieces* (Available to read for free at gregtangmath.com)	Geometry Fun! Go on a scavenger hunt around the house and collect 2-D and 3-D shapes. Build something with them listing all of the shapes you used.
Complete a puzzle or	Create a summer calendar Add the days of the week and number the days. Ask, What day comes before? What day comes after...? How many days until...	Read a math book (see suggested list for ideas)	Free Choice	Play Illuminations Deep Sea Duel (online or app)
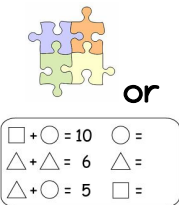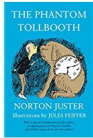
Entering Grade 3 Summer Math Menu 2018

Play a board game	Play Greg Tang's Num Tanga Levels 1, 2, & 3	Create designs with Math Learning Center's Geoboard App **(free)**	Choose an activity from the "Real World Math Fun" section	Practice **addition facts to 20** from the suggested list with an app, game or website
Play a game from the "Recommended Websites" list	Play a card game	**Create a book Log** Look at the clock before you begin a book. Write down the time you started. When you finish reading, look at the clock to record what time you finished.	Check out bedtimemath.org to practice story problems	Make a favorite recipe with an adult
Complete a puzzle or □ + ○ = 10 ○ = △ + △ = 6 △ = △ + ○ = 5 □ =	**Free Choice**	Play a place value game from the suggested activities	Read Greg Tang's book, *Math Appeal (Available to read for free at gregtangmath.com)*	Teach someone how to add two-digit numbers using a number line
Read a math book. *(see suggested list for ideas)*	Practice **subtraction facts to 20** from the suggested list with an app, game or website	Teach someone how to subtract two-digit numbers using a number line	Grab a handful of coins **Can you sort and name each coin? Can you count the total?**	**Estimate** how tall each member of your family is in inches and then actually measure them.

Entering Grade 4 Summer Math Menu 2018
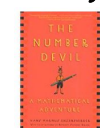
Play a board game	Play Greg Tang's Expresso Expert +/- Expresso	Check Out MLC's Fractions App **Create different fraction representations**	Choose an activity from the "Real World Math Fun" section	Practice **addition and subtraction facts to 20** from the suggested list with an app, game or website
Play a game from the "Recommended Websites" list	Play a card game	Teach someone all the strategies that you know for adding multi-digit numbers (i.e. number line, splitting, give & take...)	Check out bedtimemath.org to practice story problems **Bedtime Math**	Make a favorite recipe with an adult
Complete a puzzle **or** □ + ○ = 10 ○ = △ + △ = 6 △ = △ + ○ = 5 □ =	Practice multiplication facts with an app, a game or on a website	How Long Did You Read? Look at the clock before you begin a book. What time did you start? What time did you stop reading? Figure out the number of minutes you read.	Read Greg Tang's book, *Best of Times* (Available to read for free at gregtangmath.com)	Choose an activity from the "Real World Math Fun" section
Read a math book (see suggested list for ideas) **MATH CURSE**	Free Choice	Teach someone all the strategies you know for subtracting multi-digit numbers (i.e. number line, constant difference...)	Go on a **Quadrilateral Hunt.** Create a list of which quadrilaterals you found.	Estimate the weight of an object in grams. Weigh the object to check your estimate.

Entering Grade 5 Summer Math 2018

Play a board game	Play Greg Tang's Satisfraction	Teach someone all the strategies that you know for multiplying multi-digit numbers (i.e. area model, ratio table, partial products...)	Choose an activity from the "Real World Math Fun" section	Practice multiplication facts with an app, a game or on a website
Play a game from the "Recommended Websites" list	Play a card game	Practice division facts with an app, a game or on a website	Teach someone all the strategies that you know for dividing multi-digit numbers (i.e. area model, ratio table, partial quotients)	Make a favorite recipe with an adult
Choose an activity from the "Real World Math Fun" section	Complete a puzzle or	Free Choice	Read Greg Tang's book, *Math Potatoes* (Available to read for free at gregtangmath.com)	Check out Math Learning Center's fractions App Create different fraction representations
Read a math book (see suggested list for ideas)	Practice subtraction with regrouping using the standard algorithm.	Draw a picture using the geometry vocabulary you learned this year (i.e. ray, line, point, angle, perpendicular, parallel acute, obtuse...)	Elapsed Time: Record the start and end time for an activity you do this summer. Figure out the number of hours and minutes the activity took you.	Estimate the perimeter of a rectangular object in your home in inches or feet. Can you figure out the area of the object?

Entering Grade 6 Summer Math 2018

Play a board game	Play Greg Tang's Expresso Expert 4-numbers (+ – × ÷) or another game on the site.	Practice plotting points on a graph. Play Simple Maze Game website.	Choose an activity from the **"Real World Math Fun"** section	Practice division facts with an app, a game or on a website
Play a game from the "Recommended Websites" list	Play a card game	Estimate the product of 674 and 42. Then solve using the standard algorithm check your estimate.	Practice multiplication facts with an app, a game or on a website	Make a favorite recipe with an adult
Complete a puzzle or	Teach someone how to add fractions with unlike denominators using a model (i.e. number line, clock model, money model)	Free Choice	Practice division problems using the partial quotient strategy. You may want to solve problems using Quotient Cafe.	Play a geometry game such as Quadrilaterals Shape Shoot website.
Read a math book (see suggested list for ideas)	Practice subtraction with regrouping using the standard algorithm.	Choose an activity from the **"Real World Math Fun"** section	Find a shoebox. Measure the length, width and height. What is the volume?	Estimate the perimeter of a room in inches or feet. Can you figure out the area of the room?