Engaging Students, Teachers, and Families to Increase Access and Equity in Mathematics

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Mathematics Support Teachers
Howard County Public School System

April 4, 2019

@HCPSSElemMath

Math Board Games that Support Student Learning

***Indicates games that are available to play this evening**

Math board games that support strategy, logic, multi-step problem solving and spatial reasoning.

ALL		
Rubik's Cube*	Connect 4*	BLINK
Sorry*	Hoppers*	Blokus*
Tangoes*	Qwirkle*	Zangles*
Chess	Checkers	Pahrcheesi*
Mastermind*	Block by Block*	Logix*
Pentomino Puzzles*		
PRIMARY		
Rush Hour Junior	Candyland*	Set Jr.
Qwitch*		
INTERMEDIATE		
Battleship	Izzi*	SET
Sweet Logic		

Math board games that support number sense, strategy and fluency.

ALL		
Headband*	Head Full of Numbers*	4 Way Countdown
Sumoku	Tenzi*	7 Ate 9
Shut the Box	UNO*	Mathopoly
Money Bags		
PRIMARY		
Number Hunt	Sum Swamp	I Sea 10!
Tiny Polka Dot*	Chutes and Ladders*	Hi Ho Cherry-O*

Your Numbers Up	Sequence Numbers	
INTERMEDIATE		
24 Game	Farkle	Flip 4
Clumsy Thief*	Roll and Multiply	Make 7
Phase 10	Yahtzee*	Equate
Prime Climb*	Bump*	

Math websites that support strategy, logic, multi-step problem solving, spatial reasoning, number sense, strategies and fluency.

ALL		
Thinking Blocks	http://gameaboutsquares.com/	https://www.setgame.com/set/puzzle
https://gregtangmath.com/	Threes	https://talkingmathwithkids.com/
http://bedtimemath.org/	2024	https://mathbeforebed.com/
http://www.dreambox.com/teachertools		
PRIMARY		
Thinking Blocks Jr.	https://pbskids.org/peg/games	
INTERMEDIATE		
http://solveme.edc.org/mobiles/	http://www.between2numbers.com/	

Many games are available at local retailers such as Target, Barnes & Noble, Walmart and available online @
https://www.amazon.com
www.fatbraintoys.com
https://www.enasco.com/c/Education-Supplies/Math
https://www.setgame.com/
https://www.smartgames.eu/uk
https://www.thinkfun.com/

Attention Staff!!!!

The week of April 1st is Math Spirit Week

I hope that everyone will participate and encourage their students to do so! Put this info on the board, in your phone & on your Canvas page.

Please take pictures/video each day and send it to me or tweet @HCPSSElemMath, #mathliveshere

Math Spirit Week

- **Monday, April 1st - <u>Wear a shirt w/Numbers</u>** to show that you love math
  - Great questions/prompts for discussion:
    - How is your number the same/different than your partner's/neighbor's?
    - Which number is greater/less than yours? or Find a number that is greater/less than yours.
    - How could you represent your number? (base ten, place value disks, fraction models, money, etc…)?
    - What does your number remind you of in real life? (If someone is wearing a 5 it could remind them of the number of players on a basketball team; 10 could be their age, etc…)
    - Can you order yourself from least to greatest? What would be a number in between (pick 2 students standing next to each other)?
- **Tuesday, April 2nd - <u>Wear a funky patterned</u>** outfit or socks because we use patterns in math
  - Great questions/prompts for discussion:
    - How is your pattern the same/different than your partner's/neighbor's?
    - What units is your pattern based on? (shapes, numbers, etc…)
    - Does your pattern repeat or grow?
    - What would be the next unit in your pattern?

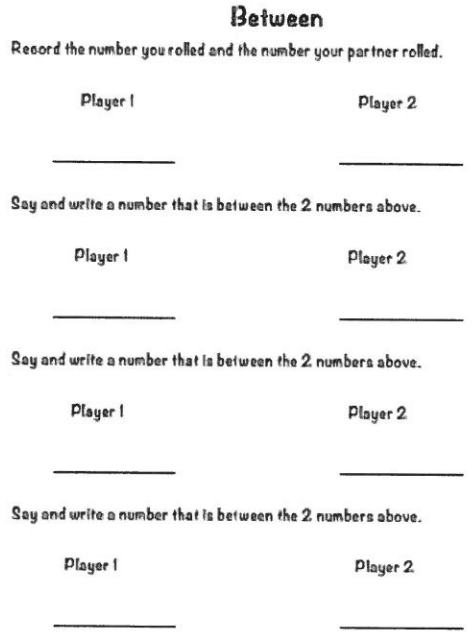
- **Wednesday, April 3rd - <u>Wear a college/school shirt</u>** to show that you love & will continue learning math
  - Great questions/prompts for discussion:
    - How is your school shirt the same/different than your partner's/neighbor's?
    - Where is the school located?
    - What do you like about it?
    - Who do you know that attends that school?
    - What would you like to study if you attend that school?

- **Thursday, April 4th - <u>Wear something you can count</u>**...polka dots, stripes, animals, bracelets, etc…
  - Great questions/prompts for discussion:
    - How is your counting shirt the same/different than your partner's/neighbor's?
    - What object(s) can you count on your shirt? How many are there? How did you count/figure that out?
    - Can you write/represent how you figures out how many?
    - Who has more objects on their shirt?
    - If you could design a counting shirt, what would be on it and how many of it? Why?
    - Can you order yourself from least to greatest objects?
    - Whose shirt is easiest to count? Why?
- **Friday, April 5th - <u>Wear your favorite Team Jersey/shirt</u>** to show that math is about teamwork and collaboration
  - Great questions/prompts for discussion:
    - How is your team shirt the same/different than your partner's/neighbor's?
    - Why do you like this team?
    - How does the team collaborate?
    - How do you collaborate in math?

- **These prompts/questions are great for community circle time (but you must decide as a team so that they aren't repeated), routines, part of independent work time, filler/transition time and or end of the day circles.**
- **Please take pictures/video each day and send it to me or tweet @HCPSSElemMath, #mathliveshere**

Between – Grades 5 and 2

- Play with 2 players
- Each person rolls 3 dice and makes a 3 digit number
  - For example if you roll a 3, 7 and a 5 you can make 357 or 537, 735, etc. Write your number and your partner's number.
  - After each person has made their number, each person then says a number between the two numbers rolled and writes it down.
  - Next say and record a number between the two numbers that you and your partner just said and recorded.
  - Keep playing until you and your partner both say the same number.



Between

Record the number you rolled and the number your partner rolled.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

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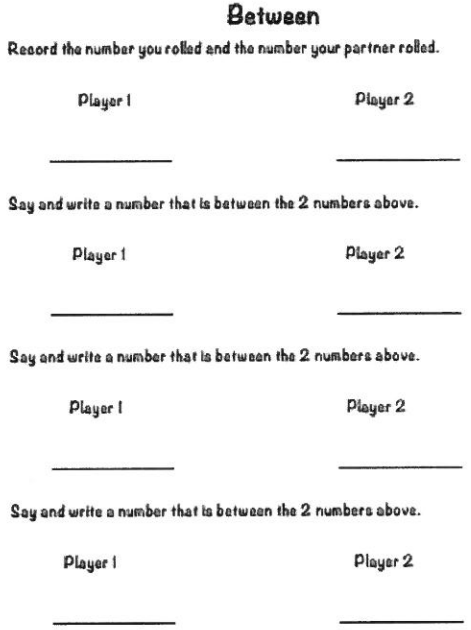
Between – Grades 3 and Kindergarten

- Play with 2 players
- Each person rolls two dice and makes a 2 digit number with the smaller number in the ones place and the larger number in the tens place
- For example if you roll a 3 and a 5 you can make 35
- Write your number and your partner's number.
- After each person has made their number, each person then says a number between the two numbers rolled and writes it down
- Next say and record a number between the two numbers that you and your partner just said and recorded
- Keep playing until you and your partner both say the same number



Between

Record the number you rolled and the number your partner rolled.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

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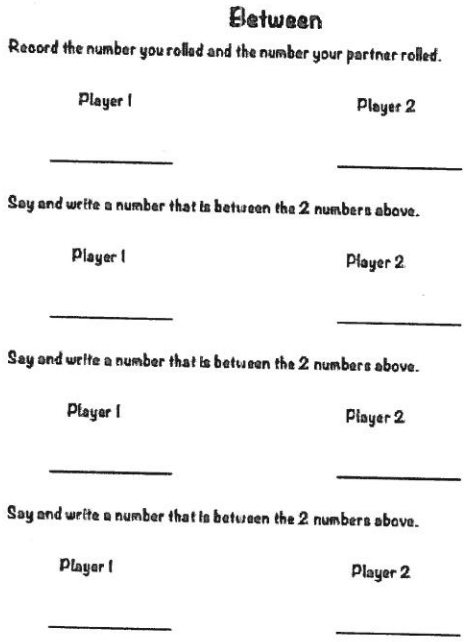
Between – Grades 4 and 1

- Play with 2 players
- Each person rolls 2 dice and makes a 2 digit number
  - For example if you roll a 3 and a 7 you can make 37 or 73.
- Write your number and your partner's number.
- After each person has made their number, each person then says a number between the two numbers rolled and writes it down
- Next say and record a number between the two numbers that you and your partner just said and recorded
- Keep playing until you and your partner both say the same number



Between

Record the number you rolled and the number your partner rolled.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

Say and write a number that is between the 2 numbers above.

Player 1 _____ Player 2 _____

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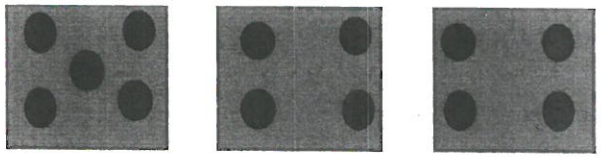
Eleven – 2nd Grade and 5th Grade 11:10 – 11:40

- Roll 3 dice
- Use addition and subtraction to make a number as close to 11 as possible



Which should you choose?

$5 + 4 + 9 = 13$

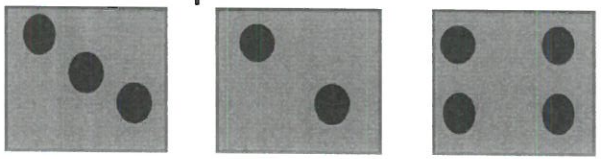
$5 + 4 - 4 = 5$

- If you can make 11 by using addition and subtraction and all 3 dice you get 2 points
- If no one has 11 dots, the person who is closer to 11 gets 1 point
- Repeat

Roll	My equation	My points (circle)
1		0 1 2
2		0 1 2
3		0 1 2
4		0 1 2
5		0 1 2
6		0 1 2
7		0 1 2
8		0 1 2
9		0 1 2
10		0 1 2
My total points		

Eleven – Kindergarten and 3rd Grade 9:40 – 10:10

- Roll 3 dice with dots
- Count the dots
- For example:



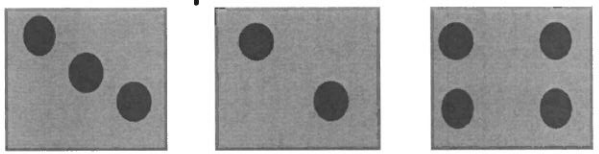
Is 9 dots

- If you have exactly 11 dots you get 2 points
- If no one has 11 dots, the person who is closer to 11 gets 1 point
- Repeat

Roll	My total dots	My points (circle)
1		0 1 2
2		0 1 2
3		0 1 2
4		0 1 2
5		0 1 2
6		0 1 2
7		0 1 2
8		0 1 2
9		0 1 2
10		0 1 2
My total points		

Eleven –1st Grade and 4th Grade 9:30 – 10:00

- Roll 3 dice with dots
- Add the dots
- For example:



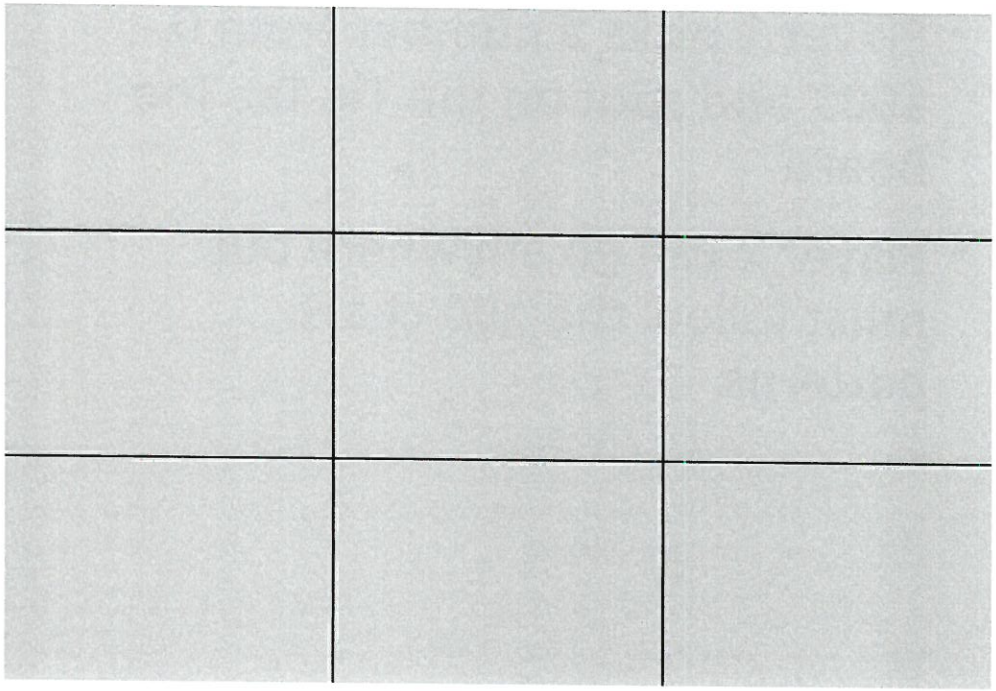
3 + 2 + 4 = 9

- If you have exactly 11 dots you get 2 points
- If no one has 11 dots, the person who is closer to 11 gets 1 point
- Repeat

Roll	My equation	My points (circle)
1		0 1 2
2		0 1 2
3		0 1 2
4		0 1 2
5		0 1 2
6		0 1 2
7		0 1 2
8		0 1 2
9		0 1 2
10		0 1 2
My total points		

Let's Play Tic Tac Toe! Grades 3 and 1

- Player 1 picks a number from 0 - 100 and spot on the Tic Tac Toe Board
- Player 2 can go anywhere but must follow the 100 chart patterns



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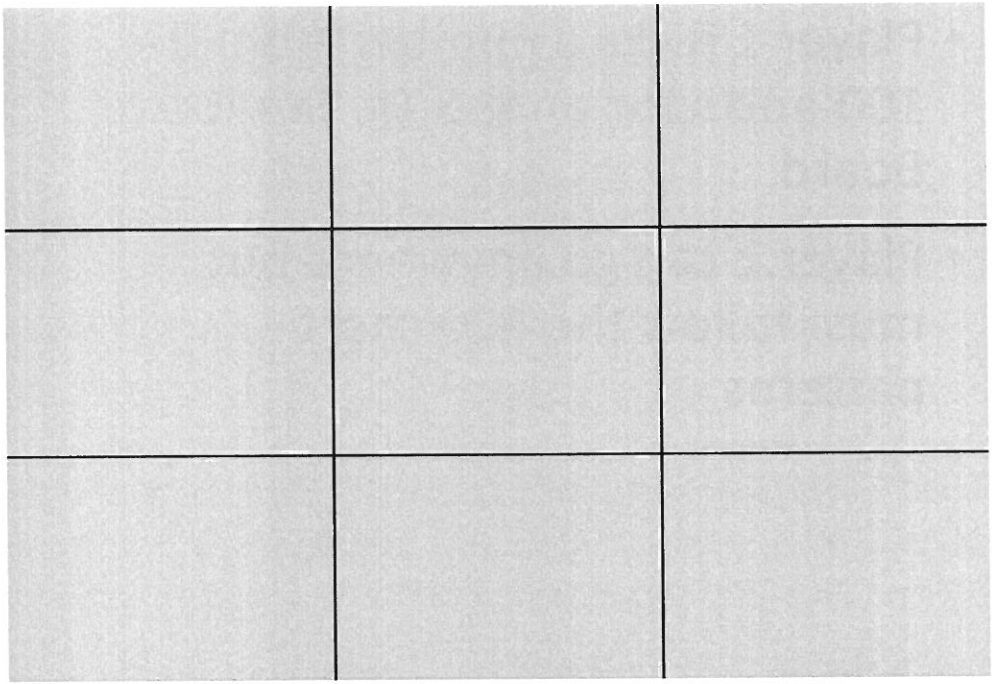
Let's Play Tic Tac Toe! Grades 4 and 2

- Player 1 picks a number from 0 - 1000 and spot on the Tic Tac Toe Board
- Player 2 can go anywhere but must follow the 100 chart patterns



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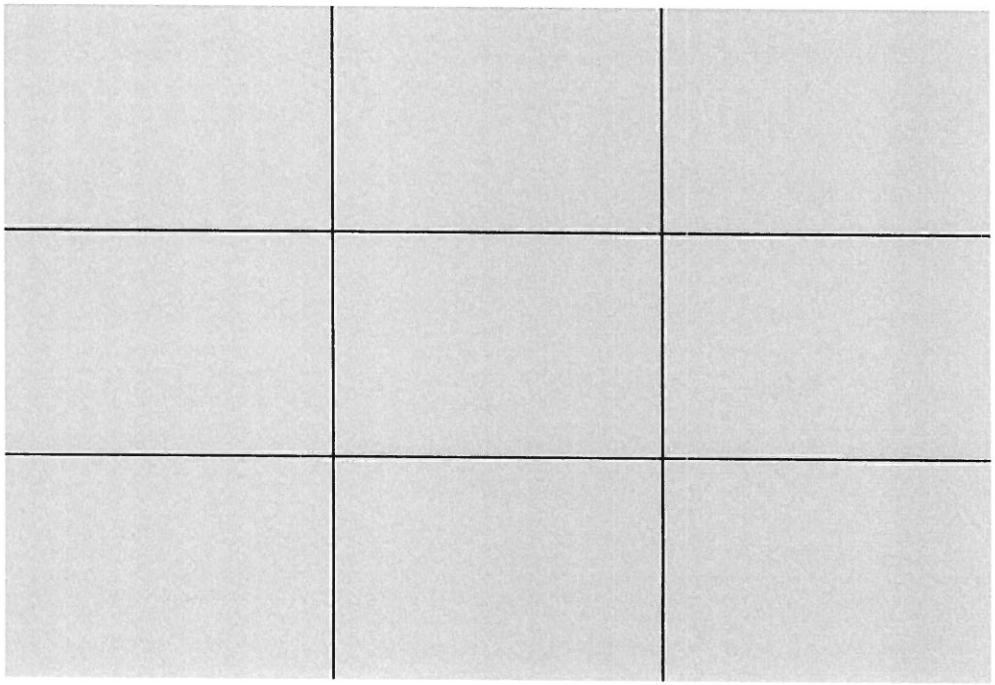
Let's Play Tic Tac Toe! Grades 5 & K

- Player 1 picks a number and spot on the Tic Tac Toe Board
- Player 2 can go anywhere but must tell how their number compares to the number(s) around it



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March Family Math (3 - 5)

				1 Yellowstone National Park was established in 1872. Old Faithful, a geyser in the park erupts every 92 minutes, on average. About how many times does it erupt in one day?	2 Dr. Seuss was born on this day in 1904. His first book *And to Think That I Saw It on Mulberry Street,* was published in 1937. How old was Dr. Seuss when this book was published?	3 March became women's history month in the US in 1981. Is this more or less than 20 years ago?
4 Astronaut Ellen Ochoa has flown to space in 1993,1994, 1999, and 2002. How many years apart were her first and last flights?	5 In 1997, Violet Palmer became the first woman to officiate a National Basketball Association (NBA) game. She refs about 70 games per year. There are about 82 games in a season. How many games does she not ref?	6 Oreo cookies were sold for the first time in 1912. More than 123,000 tons of cream for Oreos are made in a year. Write 123,000 in expanded form.	7 Alexander Graham Bell invented the telephone in 1876. About how many years ago was the phone invented?	8 Popcorn lovers day A popcorn kernel can pop up to 3 feet in the air. Is that shorter or taller than you?	9 Pizza day - the average pizzeria uses 55 boxes per day. How many boxes would be used in a week?	10 Pack your lunch day If you have 6 cookies and you want to share them equally with 2 friends, what fraction of the cookies will each of you receive?
11 Daylight Savings We will move our clocks forward an hour. Will we lose an hour or gain an hour? How many hours will we actually have on this day?	12 Plant a flower day If there are 6 rows of flowers with 9 flowers in each row, how many flowers are there?	13 NCAA March Madness begins. Glen Rice holds the record for most points in a single tournament in 1989 with 184 points. Most baskets are worth 2 points; how many baskets did he make?	14 Pi day Draw a picture using only circles! It is harder than it sounds :-)	15 In 1997, the NCAA required that Final Four games be held in a dome stadium with a seating capacity of at least 40,000. In 2009, the capacity minimum was raised to 70,000. How many more seats were required in 2009?	16 The first NCAA Men's Basketball Tournament was held in 1939. Was this more or less than 100 years ago?	17 Basketball player Shaquille O'Neal is 7 feet 1 inch tall. There are 12 inches in a foot. How many inches tall is he?
18 The first space walk in 1965 lasted 729 seconds. Convert this to minutes and seconds. (Hint there are 60 seconds in a minute)	19 National Chocolate Caramel Day You have 56 chocolate caramels. You want to spilt them equally between you and three friends. How many chocolate caramels would each person get?	20 Spring Equinox There will be an equal number of daytime hours as nighttime hours. There are 24 hours in a day. How many hours of day and night will there be?	21 In 1971 the seasonal snowfall in Vermont totalled 132.2 inches. There are 12 inches in a foot. About how many feet of snow did Vermont have?	22 In 1972, Kareem Abdul-Jabbar was named NBA MVP. He is 7'2" tall. How much taller is he than you?	23 The first elevator was installed in New York in 1857. The fastest elevator today can travel 45 mph while the fastest runner can travel 28 mph. How much faster is the elevator?	24 The first settlers arrived in Maryland in 1634. Maryland became a state in 1788. Is this more or less than 100 years apart?
25 Waffle Day If a **square** waffle has 64 "holes" or impressions, how many rows and columns can it have?	26 In 1972, the LA Lakers broke the NBA record by winning 69 of 82 games. How many games did they lose?	27 In 1939, the first NCAA Men's Basketball Championship was held. The University of Oregon beat Ohio State 46-33. How many points did University of Oregon win by?	28 In 2017, the world's largest dinosaur footprint was discovered in Kimberley, Western Australia. It measured 1.7 meters long. There are 100 centimeters in a meter. About how many centimeters long is the footprint?	29 In 1996, the Cleveland Browns choose a new name, the Baltimore Ravens. About how many years ago was this?	30 The pencil with an eraser was patented in 1858. One pencil can draw a line 70 miles long. How many pencils are needed to draw a line 700 miles long?	31 Crayola Crayon Day The 1st box of 8 crayons cost $.05 in 1903. Today, that same box costs $1.25. How much has the price gone up since 1903?

https://www.vertex42.com/calendars/blank-calendar.html

Blank Calendar Template © 2013 Vertex42 LLC

March Family Math (K - 2)

				1 Yellowstone National Park was established in 1872. Old Faithful, a geyser in the park erupts every 92 minutes, on average. About how many times does it erupt in one day?	2 Dr. Seuss was the author and illustrator of around 60 books. Find the number that is 10 more and the number that is 10 less than 60.	3 March became women's history month in the US in 1981. Is this more or less than 20 years ago?
4 Astronaut Ellen Ochoa has flown to space in 1993,1994, 1999, and 2002. How many times has she flown to space?	5 In 1997, Violet Palmer became the first woman to officiate a National Basketball Association (NBA) game. She refs about 70 games per year. There are about 82 games in a season. About how many games does she not ref?	6 Oreo cookies were sold for the first time in 1912. If each pack of Oreos has 3 rows of 15 cookies. How many cookies are there in a whole pack?	7 National Cereal Day How man pieces of cereal are you in your cereal bowl? More than 10? More than 50? More than 100?	8 Popcorn lovers day A popcorn kernel can pop up to 3 feet (36 inches) in the air. Is that shorter or taller than you?	9 Pizza day The average pizzeria uses 55 boxes per day. If boxes come in packs of 10, how many packs of pizza boxes does a pizzeria need to order each day?	10 Pack your lunch day If you have 6 cookies and you want to share with 2 friends, how many cookies would each of you get?
11 Daylight Savings We will move our clocks forward an hour. If the time was 8: 00, what would be 1 hour forward?	12 Plant a flower day - if there are 4 rows of flowers with 6 flowers in each row, how many flowers are there?	13 NCAA March Madness begins College basketball games are divided in to two halves which are 20 minutes each. How long is a whole college basketball game?	14 Pi day - Draw a picture using only circles! It is harder than it sounds :-)	15 Basketball player Shaquille O'Neal is 7 feet 1 inch tall. Would it be more efficient to measure him with a paper clip or a pencil?	16 Basketball games have 5 players from each team on the court at a time. How many total players are on a basketball court during a game?	17 A shamrock is a three-leafed plant. If you have 5 shamrocks, how many leaves would you have in all?
18 The first space walk in 1965 lasted 729 seconds. Draw a picture of this number with base ten blocks (sticks and dots).	19 National Chocolate Caramel Day You have 9 chocolate caramels. You want to spilt them equally with three friends. How many chocolate caramels would each person get?	20 Spring Equinox There will be an equal number of daytime hours as nighttime hours. There are 24 hours in a day. How many hours of day and night will there be?	21 Nutrition Month Children should eat about 5 vegetables and 2 fruits each day. Do you eat more or less than this? How much more or how much less?	22 What has hands but can't clap?	23 The first elevator was installed in New York in 1857. The fastest elevator today can travel 45 mph while the fastest runner can travel 28 mph. Which one is faster? How much faster is it?	24 March is the third month of the year. There are twelve months in one year. How many months are left in this year?
25 Waffle Day - If a **square** waffle has 16 "holes" or impressions, how many holes are in each row?	26 In 1972, the LA Lakers broke the NBA record by winning 69 of 82 games. How many games did they lose?	27 in 1939, the first NCAA Men's Basketball Championship was held. The University of Oregon beat Ohio State 46-33. How many points did University of Oregon win by?	28 Music in our schools month Does your favorite song have a rhythm that has a repeated pattern? Describe the pattern that you hear in the rhythm.	29 March is National Celery Month. Celery comes in bunches of about 10 stalks. If you make peanut butter and celery each day and use 2 stalks of celery, how many bunches of celery do you need to buy each week?	30 The pencil with an eraser was patented in 1858. If there are 24 students in your class and pencils come in packs of 10, how many packs of pencils does your teacher need to buy so everyone has a pencil?	31 Crayola Crayon Day - the 1st box of 8 crayons cost 5 cents in 1903. Today, that same box costs $1.25. Make $1.25 as many ways as you can with money at home.

https://www.vertex42.com/calendars/blank-calendar.html Blank Calendar Template © 2013 Vertex42 LLC

Grade	Game	Checked out by
Kindergarten	Find it	
Kindergarten	Kindergarten Yahtzee	
Kindergarten	Tic Tac Ten Frame	
Kindergarten	Between	
Kindergarten	Quack Attack Shake and Spill	
Kindergarten	Ten Pin Limbo	
First Grade	Ten Frame Compare	
First Grade	Base Ten Concentration	
First Grade	Addition War	
First Grade	Tic Tac Tang	
First Grade	Uncover	
First Grade	Oh No 10!	
First Grade	Between (2 digit #s)	
First Grade	Ten Pin Limbo	
Second Grade	Addition War	
Second Grade	Meet the conditions	
Second Grade	Tic Tac Tang	
Second Grade	4 Sums in a Row	
Second Grade	Uncover	
Second Grade	Scattergories	
Second Grade	Oh No 20!	
Second Grade	Kakooma	
Third Grade	4 Sums in a Row	
Third Grade	Tic Tac Tang	
Third Grade	Addition War	
Third Grade	Close to 1000	
Third Grade	Scattergories	
Third Grade	Oh No 20!	
Third Grade	Kakooma	
Fourth Grade	Finding Fractions	
Fourth Grade	Multiplication 4 in a row	
Fourth Grade	Tic Tac Tang	
Fourth Grade	Close to 100,000	
Fourth Grade	Scattergories	

Fourth Grade	Place Value Yahtzee!	
Fourth Grade	Kakooma	
Fifth Grade	Finding Fractions	
Fifth Grade	Multiplication 4 in a row	
Fifth Grade	Tic Tac Tang	
Fifth Grade	Target 1	
Fifth Grade	Close to 100,000	
Fifth Grade	Yahtzee!	
Fifth Grade	Sink that Polygon	
Fifth Grade	Kakooma	

PreK

Two sided counters (20 per student)
Number lines 1 - 20

Kindergarten
Ten frames
Two sided counters (20 per student)
Number lines 1 - 30
120 chart
Plastic sleeve
Dry erase marker

First Grade
Ten frames
Two sided counters (20 per student)
Number lines 1 - 20
120 chart
Plastic sleeve
dry erase marker
base ten blocks (tens and ones) - maybe paper ones
HCPSS strategies pamphlet

Second Grade
Two sided counters (20 per student) Educatorsoulet.com soft counters 1000 for 20.99 approx. 1800 counters
Number lines 1 - 20
laminated sentence strip for open number line
laminated 1000 charts (we will shrink and copy charts onto one 2-sided copy)
plastic sleeve

dry erase marker
base ten blocks - maybe paper ones
HCPSS strategies pamphlet

Third Grade
Two sided counters (? per student) - for arrays
Laminated sentence strip for open number line
laminated 1000 chart
plastic sleeve
dry erase marker
base ten blocks
laminated grid paper
fraction squares/circles
HCPSS strategies pamphlet

Fourth Grade
Laminated Sentence strip for open number line
dry erase marker
base ten blocks
grid paper
plastic sleeve
dry erase marker
fraction squares/circles
HCPSS strategies pamphlet

Fifth grade
Laminated sentence strip for open number line
dry erase marker
base ten blocks (for decimals)
grid paper
plastic sleeve
dry erase marker
paper fraction squares/circles
HCPSS strategies pamphlet