



**THIRD SPACE
LEARNING**

12 Math Club Games & Activities

12 fun and interactive games
to use in an elementary school
math club

Grades 3-5

Contents

What to expect with these 12 Math Club Games & Activities	2
Dice Duo	3
Simple Subtraction	4
The Angle Activity	5
The Division Game	6
Fractions Of A Minute Game	7
Percentage Game	8
The Card Sort Game	9
Odd One Out	10
Graphic Organizers	11
Balloon Debates	12
Diceland	13
Snakes And Ladders	14

What to expect with these 12 Math Club Games & Activities

The idea of starting a math club is always great in theory, but in reality it can be a little more difficult to find the time with a very busy teaching schedule already in place. However, that's why we are here to help! In this resource you will find 12 ready to use math games and activities that are perfect for an after school math club!

There are activities and games that will help with all aspects of math including multiplication skills, reasoning, and organization, so there really is enough to keep your math club busy for weeks!

Don't have a math club? These games and activities can also be used in the classroom!

1 Dice Duo

This simple and fun activity is a fantastic way to teach your math club about probability and chance. Using something that can be found in every elementary classroom, two dice, students will be excited to race in an attempt to win the game while testing out their multiplication skills!

You will need

Two dice per pair of students

A whiteboard or notebook
for each child

How to run the activity:

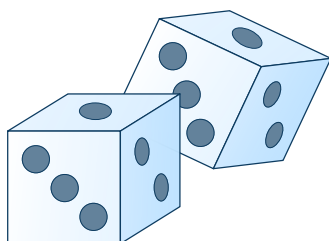
- 1 Separate your math club into pairs and give each pair two dice.
- 2 Take turns throwing both dice and then multiply the two numbers on the dice to get your score.
- 3 Record the score in a table.
- 4 The winner is the first player to reach 100 points.

Variations on the activity

Variation Number 1: Ask each student to throw both dice ten times and find their total score. They can then try this several times to see what their highest or lowest score is.

Variation Number 2: Each student starts with a score of 100 and has to subtract the product of their dice throws each time. The first person to reach zero wins!

Variation Number 3: For younger students, the activity can be played the same way using addition instead of multiplication.



2 Simple Subtraction

This is an activity which is quick to set up and requires minimal equipment, but is one that your students will love! The game is all about getting to the magic number of 27, but it may be trickier than first thought as tactical subtraction is involved!

How to run the activity:

You will need

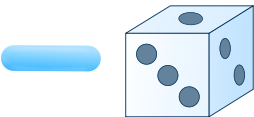
One die between everyone

Paper, whiteboards or notebooks to act as a scoresheet

- 1 Ask every student to draw a scoresheet that looks like this:

.....

- 2 Throw the die and ask all players to write the resulting number in one of their four boxes before the die is thrown again, noting that only one digit can be written in each box and that once a number is in a box it cannot be changed.
- 3 Continue like this, throwing the die until all four boxes are filled.
- 4 When all of the boxes have been filled, subtract the bottom 2-digit number from the one at the top.
- 5 If the bottom number is greater, then they score 0 points.
- 6 The winner is the player whose answer is closest to 27.
- 7 The winner of each round scores 4 points, the next closest 3 points and so on.
- 8 Begin the next round!



3 The Angle Activity

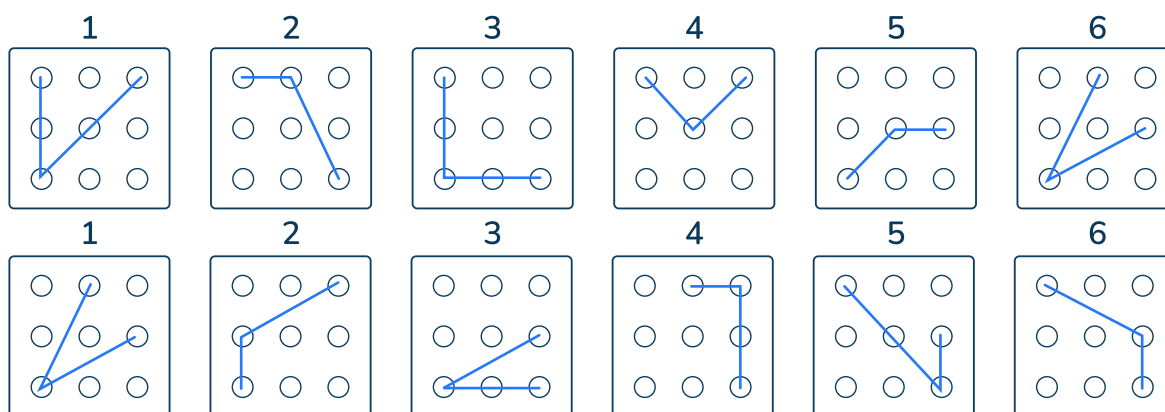
Keeping students busy and their minds active with just some dice and angles may seem like a tricky task, but not with this activity. It combines probability and chance with acute, obtuse and right angles and is a fantastic way to get a group of elementary students thinking about which angle is which!

You will need

Two dice

How to run the activity:

- 1 Draw the following (or a variation of it using your own angles) on the classroom board:



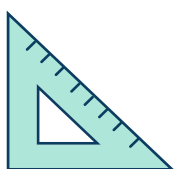
- 2 Ask the students to take turns throwing the dice and then matching the total of the dice to one of the above images.
- 3 Look at the angles between the two lines and score accordingly:

Acute Angle = 1 Point

Obtuse Angle = 2 Points

Right Angle = 3 Points

- 4 Play ten rounds and the winner is the player with the highest score!



4 The Division Game

This game will help the students in your math club think about division, while challenging them to complete a bingo style board in a race against their friends.

You will need

Two dice per pair of students

A set of counters for each student

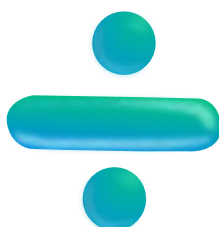
Whiteboards or notebooks

How to run the activity:

- 1 Ask each student to write the numbers 1-9 in a grid like the one below. The order does not matter as long as each number is in there once:

1	8	6
5	3	7
9	4	2

- 2 Take turns throwing the two dice and arrange the scores to make up a 2-digit number. For example, it could be 23 or 32.
- 3 Place a counter on any of the squares that contain a number that divides into the 2-digit number.
- 4 The winner is the first player to have a straight line of three counters.



5 Fractions Of A Minute Game

This activity is a real test of skill! It is all about using knowledge of time to judge how quickly it passes, and as we know, this can be a tricky task at the best of times. Pass the stopwatch around the children and they will have a whale of a time!

How to run the activity:

- 1 Decide on a fraction you would like your class to break a minute down into. E.g. $\frac{1}{3}$.
- 2 Ask the students to take turns to guess $\frac{1}{3}$ of a minute by starting and stopping the stopwatch when they think the right amount of time has passed.
- 3 Record each of the guesses in a table.
- 4 The player who is closest wins the round.

You will need

A stopwatch which measures seconds



See below for an example of a table:

Fractions of a minute	Time in seconds	Ben's Guess	Sophie's Guess
$\frac{1}{3}$	20	18	23
$\frac{1}{2}$	30		
$\frac{1}{4}$	15		

6 Percentage Game

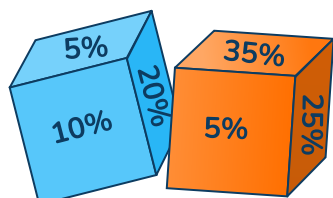
Percentages can often prove difficult for some in the classroom, but with this simple and fun activity the members of your math club will be asking to learn about them every day!

You will need

A blank cube
Two grids per student

How to run the activity:

- 1 Begin by making a percentage dice by writing 5%, 10%, 15%, 20%, 25%, 30% and 35% on the faces of a blank cube.
- 2 Hand out worksheets (or get the students to create their own squares on a whiteboard) containing two 10x10 grids.
- 3 Ask the students to take turns throwing the dice and shouting out the percentage that comes up on the dice.
- 4 The students will then color in part of one of their blocks for each turn. They are not allowed to color in part of one block and part of another one on the same turn.
- 5 If the students are unable to color the exact percentage of their square that matches the die percentage, then they will need to skip their turn.
- 6 The winner is the player to completely color in both of their blocks first.



7 The Card Sort Game

This activity encourages verbalization among the students as they try to decide what each card in the deck has in common with the others!

How to run the activity:

- 1 Divide the students into small, mixed-ability groups.
- 2 Instruct them to discuss the deck of cards they have in front of them until they can reach a consensus on how they should be sorted.
- 3 The categories the cards should be sorted into are 'Agree', 'Disagree', 'It depends' and 'Not sure'.
- 4 Let the students make sense of the cards themselves, identifying key words on each card to work out the context of it.
- 5 When the students have finished sorting the cards, you can discuss the statements as a whole group and share the reasoning and thoughts behind each decision.
- 6 It is here that you will be able to take mathematical pictures of students' understanding and capture areas of uncertainty or disagreements. This will allow you to set a learning agenda for future lessons. Discussions challenge thinking processes and are extremely valuable because children often change their ideas in light of other views.

You will need

A deck of cards with statements on them of your choosing

Some polygons have thickness	Some polygons have curves
Polygons are made up of curves	All regular polygons tessellate, or fit together without overlapping sides
The outside of a polygon is called a boundary	Some polygons have more angles than sides
Polygon interior angles always = 180 degrees	The sides of concave polygons are equal in size
Polygons can have as many sides as you want	Not all polygons are closed figures
The corner of a polygon is called an apex	All polygons are symmetrical
The number of sides of a polygon is equal to the number of exterior angles	A polygon is a union of segments
A polygon can be equilateral without being equiangular	Polygons have the same number of lines of symmetry as sides
All regular polygons are convex polygons	The angles in a polygon are congruent

8 Odd One Out

This task is all about reasoning and getting the students to explain why they have chosen the odd one out from a list. It is a great way to get critical thinking involved in your math club!

You will need

A series of questions to ask the group to establish which is the odd one out

How to run the activity:

- 1 Write up a series of investigations on the whiteboard for the group to delve into and establish which is the odd one out in each.

Some examples include:

15
88
61
52
43

WHY?

15 is the odd one out because it is the only number that does not have a digital root of 7.

Note: The digital root of a number is the result you get if you add up its digits, then add up the digits of that result, and so on, until you end up with a single digit.

64
16
36
82
144

WHY?

82 is the odd one out because the other numbers are square numbers.

1 o'clock
4 o'clock
5 o'clock
8 o'clock

WHY?

1 o'clock is the odd one out because the angle between both hands does not make an obtuse angle, whereas the others do.

7426
9546
8547
2147
4328

WHY?

8547 is the odd one out because in the other numbers the first and last digit multiply together to make the digits in the middle and so 8×7 is not 54.



9 Graphic Organizers

A classic way to help students organize visual information, graphic organizers are valuable assessment tools that you can use both in your math club and in the classroom.

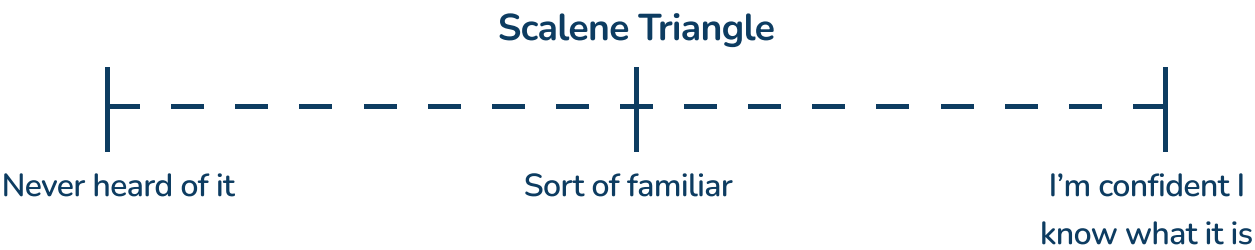
You will need

Paper or notebook for each student

How to run the activity:

- 1 Graphic organizers are a visual way to organize information and thoughts to help with understanding, memory and written work. They are valuable assessment tools because they are flexible, endless in application and show the order and completeness of students’ thought processes. This can demonstrate the strengths and weaknesses in their understanding. In this example, students are given one key word that they place on a familiarity line and then attempt to complete four boxes that delve into their understanding in more detail.

For example:



Explain in your own words what a scalene triangle is:	Give an example of when you have seen one or used one:
What facts do you know about this triangle?	Draw a picture of a scalene triangle:

10 Balloon Debates

Another way to encourage verbalization within a group, this task will give students the chance to show off their debating skills, while also using their math reasoning ones, too. Prepare for the room to get a little loud!

You will need

Nothing apart from some debate topics!

How to run the activity:

- 1 A balloon debate is a debate in which a number of speakers compete to win the support of the class. It takes its name from the hypothetical situation of being in a hot air balloon which is too heavy and rapidly losing height.

Each speaker has to make the case as to why they should not be thrown out of the balloon to save the remainder of the speakers. Typically speakers choose a famous person, a profession or characters to speak on behalf of. In this case, they'll choose numbers.

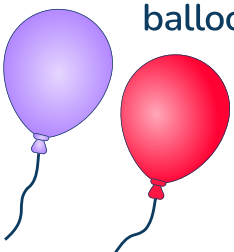
Rather than being just a lot of hot air, balloon debates are a superb way to improve students' speaking and listening skills, as well as their self-esteem and confidence.

For example:

6 numbers are in a balloon:



Each number has a particular reason why they should be left in the balloon, but can you think of them?



11 Diceland

This task will help students derive and recall multiplication facts up to 10×10 , the corresponding division facts and multiples of numbers to 10 up to the tenth multiple.

You will need

Two dice - one marked 3-8 and one marked 4-9

Different colored counters

Pencil and paper

10 x 10 number grid

How to run the activity:

- 1 Give each pair of players a 10 x 10 number grid that contains all of the products possible from rolling the two dice.
- 2 Roll both dice and find the product.
- 3 Find the product on the number grid and cover the number made.
- 4 The first player to get four in a row horizontally, vertically or diagonally is the winner.

Variations on the activity

- The player to get a counter in each column is the winner.
- The player to get four counters that make a square is the winner.
- If you throw a double you get another turn.
- The first player to cover four square numbers is the winner.
- Play for five minutes. Add together all the numbers you have covered. The player with the highest total is the winner.
- Play the game with a smaller number grid using dice marked 1-6 and changing the numbers accordingly.

Things to think about:

- How many numbers have you covered that have three factors?
- How many numbers have you covered that have a factor of three?
- When you land on a number can you name the place and face value of each digit?

12 Snakes And Ladders

The aim of this game is to help students recognize that prime numbers have only two factors and identify prime numbers less than 100. It will enable them to use their knowledge of multiplication facts to derive squares of numbers up to 12×12 and grow their confidence with the times tables!

How to run the activity:

- 1 The aim of the game is to progress from the start square to the finish square.
- 2 Throw the die to see who will go first. The lowest number starts.
- 3 Players take turns throwing the die and move that number of spaces forward.
- 4 If players land on a prime number, they move forward three spaces. If players land on a square number, they miss a turn. If they land on thirteen, they go back to the start.
- 5 If players land at the base of a ladder they should climb the ladder to the top. If players land on the tail of a snake, they should slide to the head.
- 6 If players land on the same square, then both counters are returned to the start.
- 7 The first player to reach 100 is the winner.

You will need

Snakes and Ladders grid

One die labeled 1-6

Different colored counters

Square numbers and prime numbers crib sheet

Pencil and paper

Variations on the activity

- Alter the size of the grid to 12×12 .
- If you roll a six then have another turn.
- You must roll the exact number to land on the finishing square.
- Use two dice and add the scores together.
- Label 1/10 of the squares with further instructions, e.g. move on six spaces, wait here until you throw an even prime number, miss a turn etc.
- Play with different rules, e.g. if you land on a multiple of six move back two spaces, if you land on a multiple of seven move forward two spaces.

Do you have a group of students who need a boost in math?

Each student could receive a personalized lesson every week from our specialist one on one math tutors.

- ✓ Differentiated instruction for each student
- ✓ Aligned to your state's standard
- ✓ Scaffolded learning to close gaps

Speak to us

-  thirdspacelearning.com/us/
-  +1 929-298-4593
-  hello@thirdspacelearning.com



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