

*Addition and
Subtraction
Games*

Part-Part-Whole

Whole class (or revised for use as partner game)

Equipment: 6 counters for each student.

Each student takes 6 counters and puts some in each hand. They are then to reveal what fraction they had in each hand. For example, some students will have 2 in one hand and 4 in the other, or 1 & 5, or 3 & 3.

Aim: To try and match the teacher's amount in each hand, who then stay in to play again.



Odd-even

Similar concept as above. Each student has 6 counters and they are to guess how many counters their partner has in one hand. (For example, if the student has the combination 4-2, then the answers 4 or 2 can be correct). If the partner is correct they get to keep the counters. The partner can ask if it's an odd or even number.

Aim: To win all of the other person's counters.

21

Small group game

Using the numbers 1, 2 or 3, add on using these numbers, going around in small groups (2-5 people is good).

Aim: The first person to 21 wins. Use strategies to try and land on 1, 5, 9, 13, 17 and 21 (difference of 4) in order to win.

Yahtzee

Partner game

Equipment: 5x 6 sided dice

Take in turns to roll the dice. Each player gets a maximum of 3 rolls for each turn. Choose the highest dice from each throw, and re-roll any that you don't want to keep (to see if you can get a higher number).

The closest to 100 wins.



Sooli

Whole class game

Equipment: Bingo mat, 2 dice

Children fill in numbers that are an addition combination of the two dice. (Between 2 and 12, can be repeated) Teacher rolls the dice and calls out the numbers (writing the combination on the board). Students cross off the sum of those two numbers (only once). Winner is the person with 3 in a row/down/diagonal. Predict a combination of numbers.

Plus or minus

Partner game

Equipment: 2x dice, paper and pencil to keep tally.

Both people start at 100. One person aims for 200 by adding, the other to zero by subtracting. Players take turn to roll the dice and either add or subtract the total of the 2 dice until they achieve their goal.

Goal

Partner – 3 people – whole class

Equipment: 1 digit cards

In pairs, make a number closest to 29

Then, in threes, make a number closest to 351.

Compare answers with other groups in the class.

4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1

Subtraction to zero

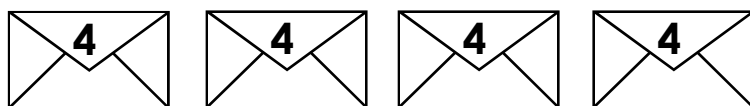
Partner game

Equipment: Player board

Choose a number between 25-40. Start from that number and take turns to cross off a number and subtract it from the total. (For example, start at 35, cross off 4 to make it 31, cross off 2 to make it 29). Keep going until the person wins by reaching zero.

*Multiplication
and Division
Games*

Mail Sort



Whole class game

Equipment: Envelopes with numbers on them, paddle pop sticks. Pin envelopes on board. Use any number on the outside of the envelope. Insert the same amount of paddle pop sticks into the envelope (if needed). Count the groups and the total number of items. Model the method of counting (For example, skip counting – 4 groups of 4).

Factor game

Partner game

Equipment: Player board, counters/coloured pencil to check off numbers.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45

Players take turns to cross off a number and record it as their score, for example. 24.

Their partner crosses off all the factors of those numbers, eg. 1, 2, 3, 4, 6, 8, 12 and records the total as their score, eg. 36.

Play continues until all numbers are crossed off. The player with the highest score wins.

*You can only cross off each number **once**.

*When recording the factors it's best to record them vertically so it is clear to understand.

Area dice

Partner game

Equipment: Two six sided dice (or one six sided and another larger dice), two playing boards (grids) and coloured pencils.

One player rolls the dice and colours in a rectangle that represents the array of the two numbers (For example, 3 and 4 = 3×4 , therefore colour a rectangle that is 3 by 4 [12 squares]). Keep taking turns on each board. The first person to fill their entire board wins. (Skip a turn if you cannot fill in the array you rolled).

Problem Solving Games

Twinnings

Partner game

Equipment: 5x5 playing grid

Pairs take turns to insert either an O or an X until the board is completely filled. Go through the grid to then find lines of 3, 4 or 5.

5 in a row – 5 points

4 in a row – 4 points

3 in a row – 3 points

Add up the total amount of points you get from the grid.

Nim

Partner game

Equipment: 12 counters OR whiteboard, texta and duster.

Arrange the counters in 3 rows of 5, 4 and 3 respectively. Take turns to remove the counters (or lines) from one row at a time (as many as you like). Player to take the last counter loses.

Sum fun

Find a quick and easy method to compute the sum of the first 100 counting numbers. (No calculators allowed).

$$1 + 2 + 3 + 4 + 5 + 6 + \dots + 97 + 98 + 99 + 100$$

POSSIBLE ANSWERS: $1 \rightarrow 10 = 55$

$$11 \rightarrow 20 = 155$$

$$21 \rightarrow 30 = 255\dots$$

OR

Partnered numbers – $1 + 99$

$$2 + 98$$

$$3 + 97$$

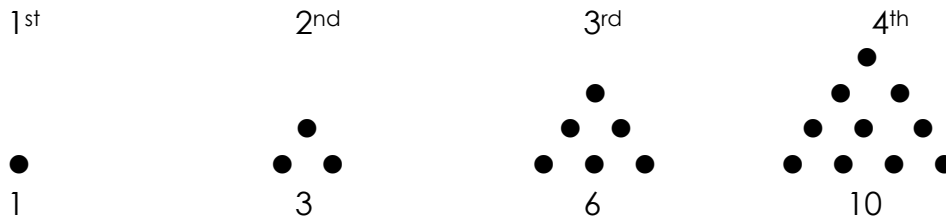
$$4 + 96\dots + \text{the } 100 \text{ by itself, } + \text{ the } 50 \text{ in the middle}$$

$$= 5050$$

Triangular Numbers

A *triangular number* is a number that can be represented by dots arranged in a triangular shape as shown below. The first four triangular numbers are 1, 3, 6, 10.

What is the 10th triangular number? The 20th? The 100th?



ANSWER

Stack #	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	...	
# of dots	1	3	6	10	15	21	28	36	...	
Difference		2	3	4	5	6	7	8	9	...

OR

Work from the bottom upwards. For example, for the 10th stack, count from 10 and add $9 + 8 + 7 + 6 + \dots$

Concepts

Subitise - Flashing numbers, and reading according to how easy they are set up, but NOT counting them. (For example, can read 6 as 2x groups of 3, because it is set up like a dice, rather than randomly set up).

Activities: * Use an overhead projector to subitise an amount of counters, then ask what is one more? one less?

* Use an overhead projector to subitise an amount of counters with a partner. They then close their eyes whilst the other person removes some counters. Ask the partner "How many did I take away? How many left?"

Ordinal numbers - Numbers being added together do NOT have to be added up according to their order. (For example, it is easier to do $9+2$ - counting on - rather than doing $2+9$ which takes longer).