

## Year 6 Maths Games

# TURN OVER FACTORS

objective- Factors of numbers 1-50.

Four lots of 1-9 cards. A set of cards numbered 1-50.

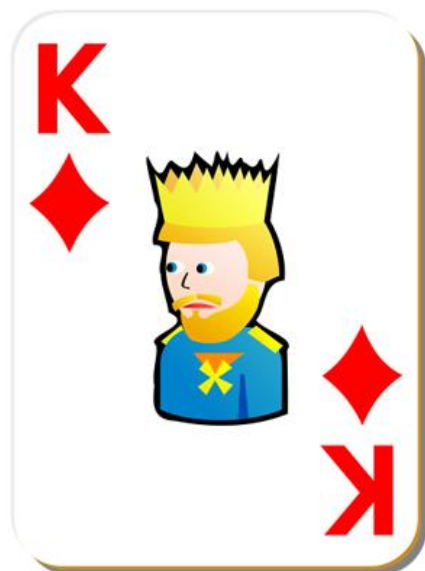
The playing cards are shuffled and 3 cards are dealt to each player face up.

Player 1 looks at the top number of the 1-50 pack and checks to see whether they are factors of the number on the top card.

If he/she has any, turn them face down and replace with cards from the 1-9 pack.

Play continues with each player checking their cards for factors of the top number.

This card is then replaced with the next 1-50 card. Play ends when there are no more 1-9 cards and the winner is the one who has the most.



# EQUATIONS RUMMY

objective- Practice of all 4 operations.

Four lots of 1-9 cards

The playing cards are shuffled and 4 cards are dealt to each player. The next card is placed face up in the centre to form a discard pile and the rest of the pack is placed face up to become the draw pile.

Each player tries to form an equation with their cards;

eg, 2,1,4,9 is an equation because  $(2 \times 4) + 1 = 9$

3,5,6,9 is an equation because  $3 \times 5 = 6 + 9$

If the player does not have an equation they draw either the top card of the discard pile or the pack and discard a card, then try to make an equation next time.

If they make an equation they score a point, discard and replace their cards and play passes to the next player.

Play ends when the main pack is used up. The winner is the player with most points.

Variation - deal 5 not 4 cards.



# Factors & Multiples Game



This is a game for two players.

You need:

a 100 square grid and some transparent counters.

## What you have to do:

The first player chooses a positive even number that is less than 50, and covers it out on the grid with a counter.

The second player chooses a number to cover. The number must be a factor or multiple of the first number.

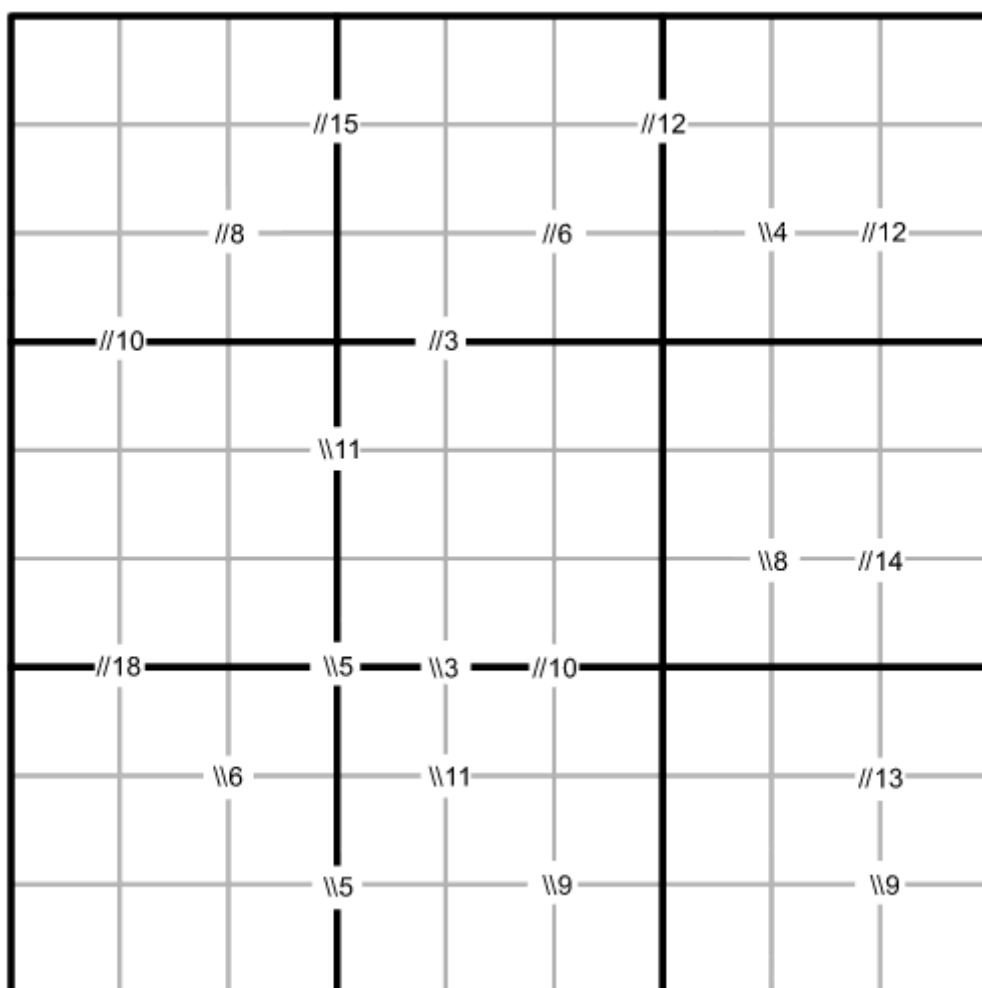
Players continue to take it in turns to cover numbers, at each stage choosing a number that is a factor or multiple of the number just covered by the other player.

The first person who is unable to cross out a number loses.

e.g. the following game started 12, 4, 44, 11, 77

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	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



# DIAGONAL SUMS SUDOKU

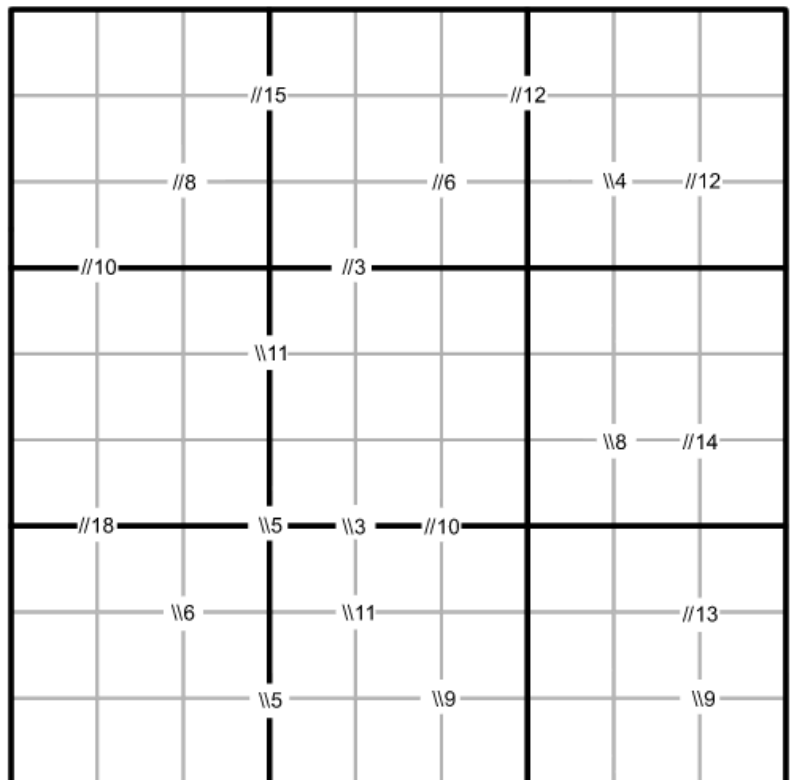
## Rules of Diagonal Sums Sudoku

Like the standard Sudoku, this Sudoku has two basic rules:

1. Each column, each row and each box (3×3 subgrid) must have the numbers 1 to 9.
2. No column, row or box can have two squares with the same number.

The puzzle can be solved with the help of clue-numbers which are written after slash marks on the intersections of border lines. Each clue-number is the sum of two digits in the two squares that are diagonally adjacent to each other. The position of each pair of diagonally adjacent squares is indicated by either two forward slash marks // or two backward slash marks \\.

For example, the //12 on the border of the top right hand box means that possible pairs of numbers in the cells above-right and below left are:  
3 and 9, 9 and 3; 4 and 8, 8 and 4; 5 and 7, or 7 and 5 respectively.



Similarly, the \6 in the bottom left box means that possible pairs of numbers in the cells above-left and below-right are:  
1 and 5, 5 and 1; 2 and 4, or 4 and 2 respectively.

# FOUR GO

Age 7 to 11

Draw a number line on a piece of paper, marked from 0 to 20, like this:



This challenge is a game for two players. The first player chooses two numbers in this grid and either multiplies or divides them.

100	25	5
10	2	36
12	4	3



He or she then marks the answer to the calculation on the number line. The second player then chooses two numbers and either  $\times$  or  $\div$ , and marks that number in a different colour on the number line.

If the answer is too big or too small to be marked on the number line, the player misses a go.

The winner is the player to get four marks in a row with none of their opponent's marks in between.

What good ways do you have of winning the game?

Does it matter if you go first or second?

# FOUR GO FOR TWO

Age 7 to 11 - Here's a game to play with an adult!



**How do you play?** You'll need an adult to play with. You'll also need a number line from 1-20, see below. The adult chooses two numbers in this grid and either multiplies or divides them.

100	25	5
10	2	36
12	4	3



They then mark the answer to the calculation on the number line. You then choose two numbers and either  $\times$  or  $\div$ , and mark that number in a different colour on the number line.

If the answer is too big or too small to be marked on the number line, the player misses a go. The winner is the person to get four marks in a row with none of their opponent's marks in between.

What good ways do you have of winning the game? Does it matter if you go first or second? How are you deciding which number to aim for next? Can you find a winning strategy?

## **Notes for adults**

This game gives children the opportunity to estimate answers to calculations in a motivating context and gives plenty of practice in multiplication and division. Playing strategically involves higher-order thinking and the need to think ahead.

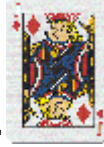
**Easier version:** you could use a calculator, and/or adapt the grid and numberline.

**Harder version:** children can be encouraged to tweak the game and to try out their new version. For example, they might change the number line, the grid of numbers, the operations, the number of numbers needed to win...



# WILD JACK\*

## You will need:



A full pack of playing cards.

## Number of players:

Two or more.

## To prepare for play:



Take the kings, queens and jokers from the pack of cards. Jacks are WILD CARDS. You can use them at any time to represent a number from 1 to 10 (inclusive).

## The goal:

To make up a sum to reach the **TARGET NUMBER**.



To be first to hit the score of 50.

## To begin:

- \* Shuffle the pack and turn over the top two cards.
- \* If either of the cards is a Jack or a ten, put it at the bottom of the pack and turn over the next top card.
- \* The cards show your **TARGET NUMBER** , e.g. if you turn the 4 of hearts followed by the ace of clubs your **TARGET NUMBER** is 41.
- \* Deal 5 cards.
- \* Try to reach the **TARGET NUMBER** using all 5 cards, using all or some of your cards.
- \* You may add, subtract, multiply or divide the numbers.
- \* For example, if you turned over cards that showed 4, 7,

ace (1), 5 and 2 and your **TARGET NUMBER** is 41, you could: add 5 and 7 then subtract 2 giving a total of 10, then multiply by 4 and add 1 arriving at 41 as your answer.

$$(5 + 7 - 2) \times 4 + 1 = 41$$

\* Explain your calculations to the other players.

\* If you are stuck, you can ask other players for help.

### **Scoring:**

Making the **TARGET NUMBER** using all 5 cards, without help - 10 points

Making the **TARGET NUMBER** less than 5 cards, without help - 8 points

Make **TARGET NUMBER** with help - 6 points

Helping someone else to make their **TARGET NUMBER** - 8 points

### **Variations:**

The number of cards dealt can be varied according to the skill levels of the players.

To simplify the target number to be reached, children could be allowed to use the two top cards in any order to set the target.

To assist younger learners, a set of operation cards will help.

The sets of playing and operation cards can be laid out and this will also help youngsters see that they can only use each number once.

For children unable to calculate the answers mentally, paper and pencils should be