

YEAR 5

Division game – finding remainders

Aim of the game: to get the highest score. The first player to 100 is the winner.

You need: playing cards (picture cards removed), paper & pencil

Instructions:

Choose a multiplication table to practise. eg. 7x.

Take it in turns to pick 2 cards and make a 2-digit number. Divide the number by 7. Say the answer. If there is a remainder, add the number to your score.

46

e.g.

Divide by 7 and score 4 ($46 \div 7 = 6 \text{ r } 4$)

Keep a running total of scores.

Extension activities

- Allow children to choose which order to arrange their digits to give the highest remainder.

e.g.

46

64

$$46 \div 7 = 6 \text{ r } 4 \text{ (score 4)}$$

$$64 \div 7 = 9 \text{ r } 1 \text{ (score 1)}$$

- Play with more than one multiplication table eg. 7x and 8x. Children can then choose which order to arrange their digits and which number to divide by to give the highest remainder.

e.g.

46

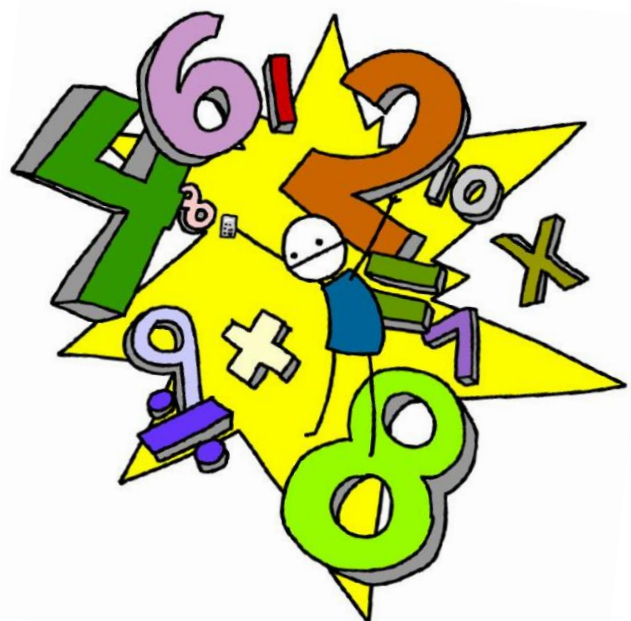
64

$$46 \div 7 = 6 \text{ r } 4 \text{ (score 4)}$$

$$64 \div 7 = 9 \text{ r } 1 \text{ (score 1)}$$

$$46 \div 8 = 5 \text{ r } 6 \text{ (score 6)}$$

$$64 \div 8 = 8 \text{ (score 0)}$$



TURN OVER FACTORS

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.





Strike it Out



Try this game: draw a number line from 1 to 20. The first player picks two numbers, crosses them out and circles either their sum or their difference. The second player crosses out the circled number and another number that's still left, and again circle the sum or the difference.

The winner is the person who stops their opponent from being able to move!

Thousands more problems can be found
on the NRICH maths website:

<http://nrich.maths.org>

Tug O' War

- One of you is Positive and moves from left to right, the other player is Negative and moves from right to left.
- Place the counter on zero.
- Take turns to throw two dice. Add the scores to see how far you go. i.e. Positive rolls a 4 and Negative rolls a -6 : -6 + 4 = -2, move two to the left. OR move the counter + 4 and then move the counter - 6 to represent the two different dice rolls.
- If the counter reaches -11, Negative wins
- If the counter reaches 11, Positive wins.



STOP OR DARE!



A game for two or three players. You will just need a pack of cards.

Shuffle the pack and place it face down. Set a target score for the game, for example 100.

The first player turns over the top card and continues turning over cards, adding together the value of each card, until they decide to stop. Jacks score 11 and Queens score 12.

When the player stops, the total is recorded as their score.

However, **if an Ace or a King is turned over, no points are scored at all**, and the turn is finished.

The second player then starts turning over cards in the same way.

Players take turns until someone reaches the target score. This player is the winner.

If the cards are all turned over before the target is reached, just reshuffle the pack and continue.

Play the game a few times.

Can you develop any strategies to increase your chance of winning?

Now decide on some new rules and play the game again.

*You could change which cards (and how many cards) end the turn, or introduce a card that sets your **total** score back to zero.*



Once you have played your variant a few times, decide whether the same strategies are best.



In this game the winner is the first to complete a row of three, either horizontally, vertically or diagonally.

Roll the dice, choose what order to place the dice in, and add or subtract them to produce a total shown on the board, which you can then cover with one of your counters.

You cannot cover a number which has already been covered.
If you are unable to find a total which has not been covered you must Pass.

The winner is the first to complete a line of three

Below is the board for the game.

	-5	-4	-3	-2
-1	0	1	2	3
4	5	6	7	8
9	10	11	12	

Some numbers can only be made in one way, but some can be made in many different ways.

Can you work out the number of different ways of achieving each of the different totals?

Can this help you to develop a strategy to improve your chances of winning?

Can you explain your strategy?