

## **Maths Games- No computers needed!**

### **Twenty One**

The object of this KS2 maths game is to be the first one to say "21". The first person must start at "1". Each person may say one, two, or three numbers per turn, and the numbers must be in counting order. Each person must start with the number after the last one that the other person said. For example, the first person can say "1", or "1, 2", or "1, 2, 3." If the first person says "1, 2", then the second person could say "3" or "3, 4", or "3, 4, 5". Whoever says "21" wins the game. Play this game many times and try to discover a winning strategy.

### **Quick draw times tables**

Children work in pairs with their hands behind their back. They say 1, 2, 3 bang and both show their hands with a certain number of fingers showing. For example child A has 5 fingers on show and child B has 7. They then perform a quick multiplication  $5 \times 7 = 35$  the winner is the first to shout the answer. This could be adapted into a KS1 maths game by using simple addition or subtraction sums.

### **Dealing in Data**

This game is great for working on mean, mode, median and range. All you need is a deck of cards. You can play the game with as few as two people, but the more the merrier. The value of each card is as follows: aces = 1, jacks = 11, queens = 12, and kings = 13. Once each player is dealt five cards, they must put them in order from least to greatest without revealing their cards to the other players. Students must then strategically choose to score using the range, median, or mode. If a player chooses mode, they must have at least two cards with the same number.

Here are some examples of how the game works:

- The first player receives these cards - 2,5,6,7,9. He chooses range as his data measure. The range equals 7, so he receives 7 points.
- Player two is dealt 5,5,8,9,10. She chooses the median which earns her 8 points.
- Player three receives these cards: 1,7,9,9,K and selects mode. Therefore, player three receives 9 points.
- Before anyone reveals their cards, all players must indicate which data measure they are going to use. Each player uses a different data measure for each round (three hands make a round). For more sophisticated play, each player can exchange two cards for new cards from the deal pile.

### **Number War**

For this game, each player must turn up three cards. They can use any operation to create the biggest number that will win the set. To work on division skills, change the rule to have the smallest number win the set.

### **Fraction War**

Fraction War is a spinoff of the classic card game War. All that's needed is a deck of cards with the face cards removed. This game is played in pairs, and you begin by having each player turn up two cards. The smaller number acts as the numerator, and the larger is the denominator. In order to win the set, you need to have the larger fraction of the two. It is fun to hear students puzzle over whether  $\frac{2}{9}$  is bigger than  $\frac{3}{10}$ .

### **First to 100**

For this game you just need a pack of cards. You can play by yourself, but it 's more fun with two or three players. 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 he/she decides to stop. (Jacks = 11, Queens = 12.) When the player stops, the total is recorded as his/her score. However, if an Ace or King is turned over, no points are scored at all and the turn is finished. Now the second player starts turning over cards in the same way. Players continue having turns and building their scores 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.

### **Magic 15**

This is a game for two players. Begin with the numbers 1 to 9. Players take turns to select a number, with each number used only once. The winner is the first player to have exactly three numbers that total 15.

### **Salute**

#### **How to play:**

*Step 1:* The game starts with the two players facing each other. Each person selects a numbered card and sticks it on their forehead, so the other player can see.

*Step 2:* The person leading the game gives a statement, such as what the sum of the two numbers is, the difference between the two or the product of the two etc.....

*Step 3:* Each player has to work out what number is on their own card, based on what is written on the other person's head and the rule given.

### **Multiplication Bingo**

Bingo is a perennially fun game that can be enjoyed by people of all ages, and this version puts a mathematical twist on this classic game, as a way to boost multiplication skills.

**What you need to play:**

- Paper to write numbers down on

**How to play:**

*Step 1:* In this mathematical version of the game, all players write down 5 numbers, which are multiples of a given times table. For example: if they were doing the 5 times table, they might write 10, 35, 45, 50 and 60.

*Step 2:* A third person can lead the game and call out multiplication questions from the chosen times table, or they can be written on cards, jumbled up in a pile for players to take turns picking and reading out.

*Step 3:* If the player has an answer to the question on their bingo board, they can cross it out. First person to cross out all their numbers is the winner.

**Maths Problem Scavenger Hunt**

All children enjoy a scavenger hunt, so why not make one based around maths?

**What you need to play**

- Some creativity
- A garden or home full of measurable objects!

**How to play:**

*Step 1:* Give children a grid with some pre-set weights and lengths on. It will then be a challenge for them to find something in the garden that is approximately 10cm long, or something in the house that weighs 300g (as an example).

*Step 2:* Get your child to gather all of the items they think match the weights and lengths on the card, and check how well they have done with some kitchen scales and a tape measure!

**The Yes/No Game**

This is another simple game that is loved by children in classrooms across the country! It's also a good way to get in practice of 2d shapes and 3d shapes, which as parents we can sometimes avoid.

**What you need to play:**

- A series of cards/pieces of paper

**How to play:**

*Step 1:* Both players put a card on their head. It could have a number on it, a shape etc...

*Step 2:* The first player asks a question which can only be answered with 'yes' or 'no'. E.g. 'Am I odd?' 'Am I under 20?' 'Do I have 4 sides?' etc....

Step 3: They keep asking questions until they get the answer correct, or they run out of turns (you can set the number of turns they get at the beginning of the game). Then it is time for the other player to have a go.

### **Fun maths game 3: Bang Bang**

Bang bang is a great game for practising quick recall facts.

#### **What you need to play:**

- Two willing mathematicians!

#### **How to play**

Step 1: 2 players stand back to back, cowboy shootout style.

Step 2: A question is called out, such as 'what is 7 x 6?'

Step 3: The first player to turn, face their opponent, shout 'bang bang' and to give the answer wins the round.

Step 4: This is then repeated until a number of points, decided at the start of the game, is reached. That player is then the winner.

### **Five To One**

This game not only tests children's verbalisation and problem solving skills, but it also brings an element of competition into doing maths at home, and we all know how much children love to 'win'!

#### **What you need to play:**

- Cards with maths statements written on them
- Two players

#### **How to play:**

Step 1: The first person picks a card containing five statements. Each of the five statements provide a clue to the final answer, starting with a vague clue for the first statement, through to an easy clue for the fifth statement.

Step 2: Player one picks a card and reads out the first statement. E.g. 'This shape has four sides'.

Step 3: Player two can choose to give an answer and score the maximum five points, if they are correct, but risk scoring zero if they are wrong. Alternatively, they can choose to hear the four point question. They keep on going until they get a question wrong, or they choose to pass to hear the next question until they get to the final one point question

### **Hands on maths game 2: The 24 Game**

This is a very simple game that will help your child practice their arithmetic skills, and it is a game they can play with a group of friends.

#### **What you need to play:**

- A pack of playing cards (The number cards only)

#### **How to play:**

*Step 1:* Each player picks 4 number cards at random from the pile.

*Step 2:* They then need to find a way to manipulate the 4 digits using any of the 4 operations (+, -, x, ÷) so the end result is 24 For example, if they chose 4, 7, 8, 8, they could do  $(7 - (8 \div 8)) \times 4 = 24$

*Step 3:* If nobody is able to reach 24, you can make it closest wins!

### **Hands on maths game 3: 5 Of A Kind**

This is a tricky maths card game that will truly put your child's (and maybe even your) skills and knowledge to the test.

#### **What you need to play:**

- 5 sets of cards numbered 2-9

#### **How to play:**

*Step 1:* The first player picks a card numbered from 2 – 9.

*Step 2:* They then collect another 4 cards with the same number as the first, so they have 5 cards with the same number.

*Step 3:* The aim of the game is to use one or more of the five cards to get an answer of each digit between one and ten.

If for example, the player chose a 5. They would then need to use one or more of the cards to find the answer 1, 2, 3..... To make 1, they could do  $5 \div 5$ , to make 2 they could do  $(5 \div 5) + (5 \div 5)$  etc....

### **Outdoor maths game 1: Life Size Board Games**

Board games are a fun way to spend time with the family, but have you ever thought about actually becoming part of the board game?

To help your child learn maths outside, you can easily make a life size board game and become the characters in the game.

**What you need to play:**

- Paper plates (or even just sheets of paper will do)
- A large dice (or a cube shaped box which can be made into a dice)
- A dose of creativity!

**How to play:**

*Step 1:* Use paper plates as an easy way to make the board game squares, and if you don't have access to a large dice, a cube shaped box can be made into one instead.

*Step 2:* The board games you play can vary depending on the age of your child. With younger children, the plates can be numbered to encourage counting or learning their number bonds, whilst older kids could have times tables or other maths facts to answer as they go round the board.

**Outdoor maths game 2: Multiplication Hopscotch**

Everyone knows how to play hopscotch, but by introducing maths into the mix you can take this traditional playground game to the next level.

**What you need to play:**

- Chalk

**How to play:**

*Step 1:* Using chalk, draw out hopscotch squares on the ground and in each square, write either multiples of a number or multiplication facts.

*Step 2:* Each person then hop, skips and counts at the same time, which is a really good way of helping those multiplication tables stick.

**Outdoor maths game 3: Telling The Time Activity**

Time is one of those things many children find tricky, but this game will help your child tackle this topic.

**What you need to play:**

- Chalk

**How to play:**

*Step 1:* Try drawing a clock on the ground with chalk.

*Step 2:* Then, get your child to use their body to make the hands of the clock. They could show just the hour or minute hands by lying straight, or they could use their body to make the hour and the minute hands, with their legs (the longer part) being the minute hand and their torso (the shorter part) the hour hand.

### **Dice maths game 1: Skunk**

This is the perfect game to teach your child all about probability, and whilst it seems like it would be easy to win, your child will soon find out that this isn't the case...

#### **What you need to play:**

- Two dice
- A sheet of paper

#### **How to play**

*Step 1:* Write the word skunk and separate each letter into a different column on a sheet of paper. Each letter of the word 'skunk' represents a different round of the game.

*Step 2:* The first player rolls a pair of dice and works out the total of the two dice. The score is written in the S column. If they roll a one they score zero.

*Step 3:* Once they have their first score under the letter 'S', they have to make the decision to either stop and take that score as their score for the game, or roll again and hope they score even more to add to the first round score.

*Step 4:* If they roll a one in the second round, play stops and the player takes the score from the first round as their total for the game. The risk a player takes in moving on and throwing again, is if two ones are thrown, all the points for the game are wiped and the player scores zero.

### **Dice maths game 2: The Pig Dice Game**

This game is similar to the skunk game, but there only needs to be one player and one dice. However, even with only one dice things will still get tense!

#### **What you need to play:**

- One die
- A sheet of paper

#### **How to play:**

*Step 1:* Throw the die and the player records the number that they roll. As long as a one isn't thrown, the player can roll again and add the number to their total.

*Step 2:* After each throw, the player has to decide whether to throw again or keep the points they've scored. If a one is thrown at any point, the player loses all the points scored so far.

*Step 3:* The first player to score 100 is the winner.

### **Dice maths game 3: Triangle Tower**

This game is a great way to test your child's times tables skills, and it only takes two minutes to set up!

**What you need to play:**

- Two dice
- A sheet of paper
- Counter or coins

**How to play:**

*Step 1:* Draw out a triangle made from squares, with four on the bottom up to one at the top.

*Step 2:* Each player chooses 10 number from the products table (1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 18, 20, 24, 25, 30, 36). This is simply all of the possible options you can get when multiplying the numbers between 1 and 6 together.

*Step 3:* Write one number in each of the ten triangles from the product table results above.

*Step 4:* The first player then rolls 2 dice and multiplies the two numbers together. If they have the product of the two numbers written on their tower, they can then cover it with a counter.

*Step 5:* The winner is the first player to cover all their numbers in the tower.

**Card maths game 1: The Biggest Number**

Place value is a crucial skill for children to grasp during primary school, and this simple card game will help them to do that in visual and fun way.

**What you need to play:**

- One place value grid (drawn onto a piece of paper)
- A deck of playing cards

**How to play:**

*Step 1:* Each player draws a place value grid, with an agreed number of places. E.g. Thousands, hundreds, tens and ones.

*Step 2:* Using a deck of cards 2-10, Ace and picture cards, with 2-10 being worth their digit, Aces being worth 1 and picture cards being worth 0.

*Step 3:* Players take turns to draw a card from the pile, and each player chooses which column to record the number in. The winner is the person to have the biggest number recorded at the end of the game.

**Card maths game 2: First To 100**



This simple game is perfect for car journeys or the 10 minutes before dinner, and it will get your children practising their maths skills in a fun and exciting way!

**What you need to play:**

- A deck of playing cards
- A sheet of paper

**How to play:**

*Step 1:* Shuffle a pack of cards and place face down. Each player takes one card and turns it over in front of them.

*Step 2:* Record the number on the card (Ace is worth 1 and picture cards are worth 10).

*Step 3:* Each player then takes a second card and adds the number to the first number, recording it on the paper.

*Step 4:* Keep taking cards until the first person reaches 100. They are the winner.

**Game extension idea**

A variation on this game can be to start at 100 and keep subtracting until someone gets down to zero.

For older children, instead of adding the cards together, they can be multiplied each time, with the winner being the first to reach 1000.

**Card maths game 3: Wild Jack**

This is a fast paced maths card game for two or more players, where all eyes will be on the Jacks in the pack...

**What you need to play:**

- A deck of cards

**How to play:**

*Step 1:* Other than the Jacks, remove all of the picture cards from a deck. Jacks are 'wild cards' and can be used at any time to represent any number from 1 – 10.

*Step 2:* The aim of the game is to reach the target number. To make the target number, shuffle the pack and turn over the top two cards. If either are a 10 or joker, put them to the bottom. The 2 cards turned over make the target number. For example, if you turn over the 5 of hearts then the 2 of diamonds, your target number is 52.

*Step 3:* Each player is dealt 5 cards, which are set out face up. Players then can add, subtract, multiply and divide to try to reach the target number. If the target number is reached using all 5 cards, 10 points is scored, if it is made using less than 5 cards, 8 points is scored.

## Pen and paper maths games and activities you can do at home

There is no need for fancy equipment when it comes to these maths game. A pen/pencil and a few sheets of paper are all you need to make maths fun at home!

### Pen and paper maths game 1: Battleships

This is a game that most people will be familiar with, but it just so happens to be fantastic practice for KS2 coordinates.

#### What you need to play:

- Some sheets of paper
- Pens or pencils

#### How to play:

*Step 1:* Each player draws out a grid with A – J along the bottom and 1 – 10 up the side.

*Step 2:* They then plot ships of various sizes on the grid by colouring in the squares:

- One ship five squares long (the aircraft carrier)
- One ship four squares long (the battleship)
- Two ships three squares long (the cruiser and submarine)
- One ship two squares long (the destroyer)

*Step 3:* The first player ‘shoots’ by calling out a grid reference, e.g. B3. If it hits an empty square, the other player shouts, ‘miss!’ whilst the first player draws a cross, but if it hits a square with a ship in it, they have to shout ‘hit’ and the other player draws a dot. Each player keeps track of their hits and misses on a separate grid.

*Step 4:* Once all the squares for a ship have been hit, that ship then ‘sinks’. The winner is the one to sink all the other person’s ships first.

### Pen and paper maths game 2: Multiplication 4 In A Row

This game does the impossible, and manages to make learning multiplication facts fun.

#### What you need to play:

- Sheets of paper
- Counters or coins

#### How to play:

*Step 1:* Each player needs a set of coloured counters or different coins (2ps vs 10ps as an example).

*Step 2:* Make a grid containing the answers to the times tables being worked on (you can choose which times table you want your child to tackle) and a set of cards with the multiplication questions.

*Step 3:* Each player takes it in turns to pick a card, work out the answer and cover the answer with their counter. The first player to cover four in a row is the winner.

### **Pen and paper maths game 3: Dots And Boxes**

This maths game is a classic, and the chances are high that some parents out there would have played this themselves when they were at school.

Please note, this game can be played by drawing dots on a page, but it is easier to download square dot paper and print it out.

#### **What you need to play:**

- A sheet of dotted paper
- A pen or pencil

#### **How to play:**

*Step 1:* The first player draws a line to join one of the dots to another of the dots, the next player then does the same.

*Step 2:* This continues until one player manages to join the lines to make a box. They write their initial in the box and get to take another go. Once they are no longer able to complete a full box, it goes back to the other player.

*Step 3:* The winner is the person who has their initial in the most boxes at the end of the game.