3 Dice Games

Upon the pirate ship, the day wore on, and a storm rolled in.
The ship swayed from side to side, and Decimal Dog was seasick!

"Quick – we need something to occupy his mind! Gather round on this sheltered part of the deck. Let's play some dice games!"

"But it's too choppy – the dice will roll all over the place!"

"It will add to the fun!"

No dice?

No problem! Use our dice net:
https://www.mathsontoast.org.uk/wp-content/uploads/2020/03/Dice-net-1.pdf

You can also switch up your dice to do other things:

Make your own dice changing the dots to numbers, function signs + - x ÷ or stick labels over the dots on your actual dice (see the 2nd and 3rd games).

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Game 1 - Hit a Target!

How to play: adding

- Start at 0
- Aim to get to 50 or 100
- Take turns rolling the dice
- Add on the number you get to 0. When you roll again, add that number on to your current number
- The first to get to 50 or 100 wins – but if you go over you're out!

Example

I start at 0, I roll 4, so my new total is 4. On my next turn I roll 3, so my new total is 7. Then I roll 6 and my new total is 13 and so on.

How to play: subtracting

- Start at 100 or 50
- Aim to get to 0
- Take turns rolling the dice
- Subtract the number you get
- When you roll again, take-away that number from your current number
- The first to get to 0 wins – but what happens if you go below 0?

Example

I start at 50, I roll 5. I subtract this and my new total is 45. On my next go I roll 2 which I subtract from 45, giving me a new total of 43, and so on.

Playing on your own?

See how many rolls of the dice it takes you. When you play again, can you use fewer rolls?

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Game 2 - 10 is the magic number!

How to play: adding & subtraction

- Put a + 10 or a – 10 on each face
- Choose a starting number
- Roll the dice and follow the rule of + 10 or - 10
- Take it in turns to have 10 rolls each
- The winner is the person with the highest final number!

Example

We choose 52. I roll +10 first, so my new total is 62. On my next turn I roll +10 again, so my new total is 72. Next I roll -10, so I go back down to 62. My final answer is 32, and my partner's is 102, so they win!

Top tip

Use a 100 number square to help get you started.
https://www.mathsontoast.org.uk/wp-content/uploads/2020/04/NEW-Number-square.pdf

How to play: multiplying & division

- Change to a x 10 or a ÷ 10 on each face

Example

We choose 525. I roll ÷10 first, so my new total is 52.5. On my next turn I roll x10, so my new total goes back to 525. Next I roll x10 again, so I get 5,250. My final answer is 525,000, and my partner's is 5.25, so I win!

Top tip

If you aren't confident with decimals, make sure your starting number ends in a 0, for example 450 or 62,000.

How to play: further challenges

Both games can be made more challenging by changing the 10 to 100 or even 1000! Why not have a mixture of all 3...10, 100 & 1000?!

Top tip

Remember when you are x and ÷ by 10, 100 & 1000, you are moving numbers in the place value system

- Multiplying, a number gets bigger, so move digits to the left in the place value system
- Dividing, a number gets smaller, so move digits to right in the place value system
- 10 has one 0, so move digits one place
- 100 has two 0s, so move digits two places
- 1000 has three 0s, so move digits three places.

Playing on your own?

See if you can get a higher score each time.

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Game 3 - Functions are the key

How to play

- You will need 2 dice for this one
- Change the faces of one of your dice to the function signs + - x ÷
- The functions will only cover 4 faces, so you can choose to repeat two of those functions, or include other mathematical signs such as < > or =
- Use a dice with numbers, roll it then roll your function dice to create your own calculations
- The winner is the player who creates the calculation with the highest answer. BUT! You can always make up your own rules, see example below for further ideas.

Examples

I roll a 6 and a 4. Then I roll X. I then create the calculation 6 X 4 which = 24.

Using ÷ is tricky. What if you roll 3, 5 then a ÷ ? Why not think: ? ÷ by 5 = 3 OR ? ÷ by 3 = 5, instead of trying to do 3 ÷ 5 or 5 ÷ 3.

Making up your own rules could include this idea: I roll a 2 and a > which means I need to think of a number smaller than a 2. Or maybe I need to be the first person to roll a number smaller than 2.

Playing on your own?

This game lends itself well to playing on your own, as you can create a variety of calculations. Switch the type of number dice you use; keep a record of all your calculations; spot patterns.

What other dice games do you and your family know?

Can you make any new ones up? Don't forget to let us know if you do!