

# Mastermind

## Instructions

### Equipment needed (per player):

- 6 different coloured pens or pencils (they must be the same colour for each player) (if you don't have 6 coloured pencils, you can also draw symbols instead (e.g. diamonds))
- A print out of the Mastermind board (download and print out)

### Players:

2

(can alternatively be played in 2 teams)

### Tip:

Sometimes, a practice game can help players understand the rules of the game!

### Before playing:

Make sure each player has a Mastermind playing sheet (download and print out).

Decide which player will be the Code Master, and which player will be the Code Cracker.

### Aim of the game:

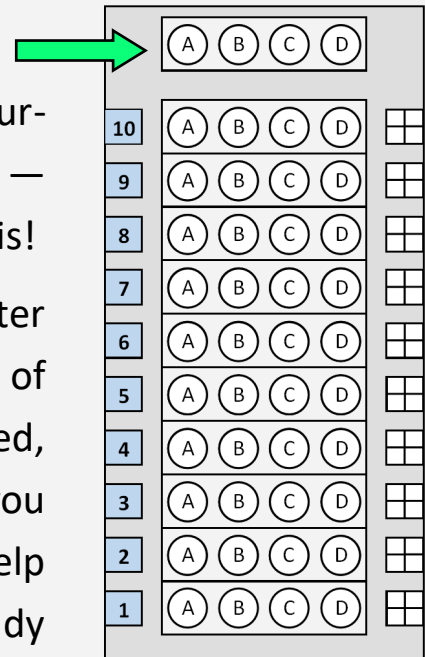
If you're the Code Master, your aim is to create a code that the Code Cracker (the other player) can't crack!

If you're the Code Cracker, your aim is to crack the Code Master's (other player's) code!

## How to play:

The Code Master will begin by creating a four-colour code in the slot at the top of the board — without telling the Code Cracker what this code is!

Traditionally, Mastermind allows the Code Master to create the four-colour code from a selection of six different colours (for example: blue, red, orange, yellow, purple, green). However, if you have never played Mastermind before, it can help to simplify the game, especially as it can already be confusing to play a game over the phone.

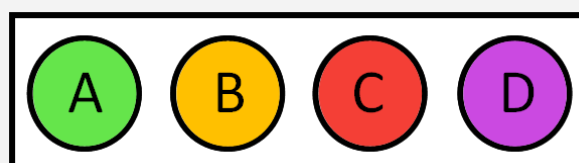


### You can simplify the game by, for example:

- Limiting the number of possible colours to only four colours (for example: orange, green, red, purple)
- Not allowing the same colour to feature twice in a code (usually, the same colour is allowed to feature multiple times in the same code)

For the purpose of these instructions, only four colours will be allowed in a code (orange, green, red, purple), and using the same colour twice will not be allowed. Remember, both players must agree on the (in this case four) colours that can be used before playing!

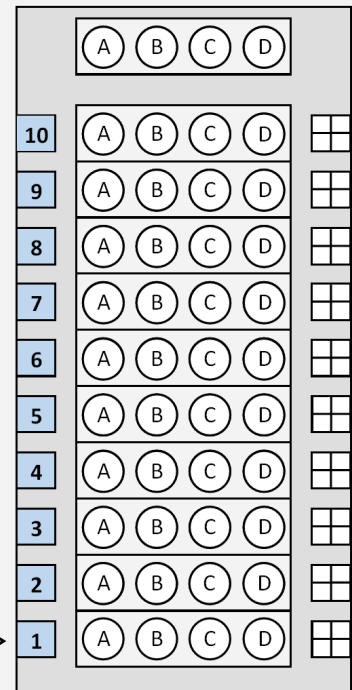
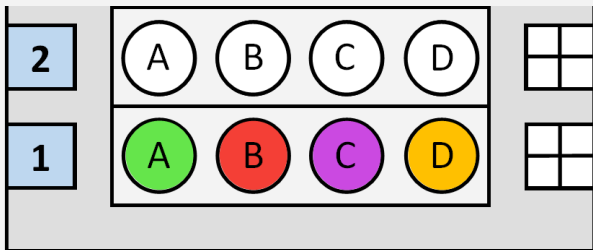
Once the Code Master has finished creating their code, the game can begin!



*Example: The Code Master's code*

Now, the Code Cracker can begin trying to crack the code! To do this, they will start by taking their first guess at what the code could be, starting in the first row.

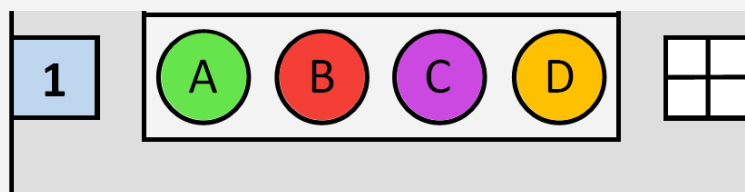
For example:



As this is the very first guess the Code Cracker will make, it will be a wild guess!

Once the Code Cracker has made their first guess, they will tell the Code Master what code they have guessed, so that they can colour it in on their board too (because, if they are on the other end of the phone, they won't be able to see the code for themselves). The Code Cracker can do this by using the row number and letters to tell the Code Master what colour they have coloured in certain spaces.

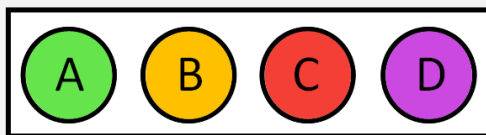
For example, in this case, the Code Cracker would tell the code master: For Row 1, A is green, B is red, C is purple, and D is orange.



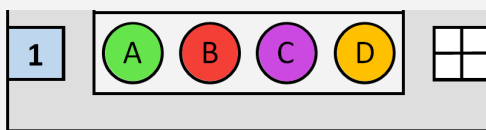
Once the Code Cracker has told the Code Master what colours they have guessed, the Code Master can reveal some key information about how right/wrong their guess was:

- How many spaces are the right colour, but the wrong place (particularly helpful if you are playing with more than four colours, as it will help you rule out certain colours).
- How many spaces are exactly the right colour and the right place.

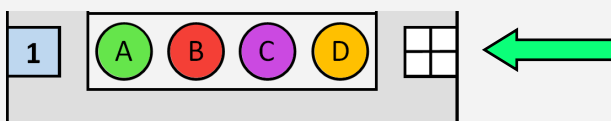
Important: The Code Master should not tell the Code Cracker *which* spaces are 'right colour wrong place' and which are 'right colour right place' - they should only tell them *how many* spaces.



In this case, the Code Master would tell the Code Cracker that in their first guess: One is right colour right place, three are right colour wrong place.



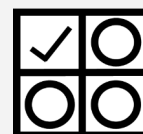
Having received this new information, the Code Cracker can note this down in the small box to the right of the row they just filled out, in order to help them figure out the code.



The following symbols are used:

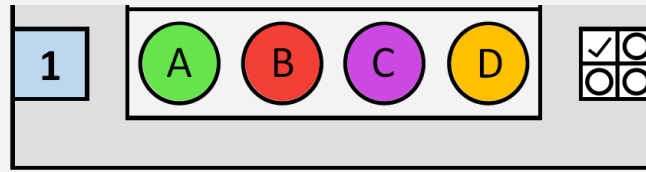
- ✓ right colour, right place
- right colour, wrong place

In this case, the first box would look like this:

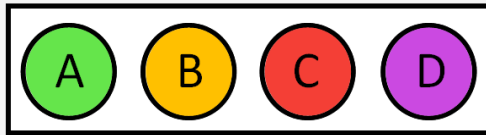
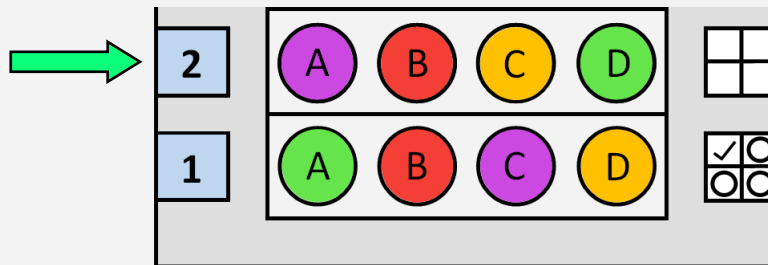


Note: In order to keep track of the Code Cracker's progress, the Code Master will fill out all of this information on their sheet too!

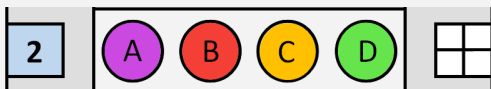
The first round is now completed, with the row looking something like this (the order of ticks and circles in the box doesn't matter):



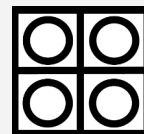
The Code Cracker will now take a second guess at what the code could be, using the newly obtained information to help them. When they have coloured in the circles in row two, they will again relay them to the Code Master by using the row number and letters.



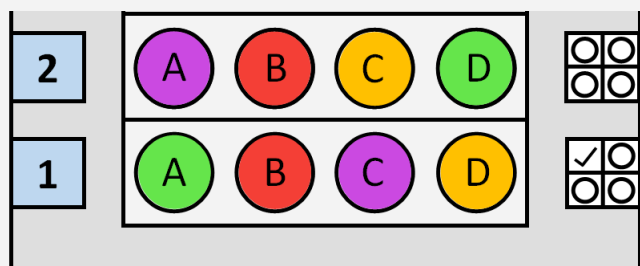
In this case, the Code Master would then tell the Code Cracker: Four are right colour, wrong place.



The next box would then be filled out like this:



In this case, by comparing the first and second row, and the information given to them by the Code Master regarding how right/wrong their guesses were, the Code Cracker will be able to determine that, as the 'right colour right place' tick has gone, the second space is definitely not red.



In this way, the Code Cracker will keep making (educated) guesses as to what the code might be, with the Code Master providing feedback each round to aid their guesses.

If the Code Cracker is able to guess the code correctly within 10 guesses, they win!

However, if they are unable to, the Code Master will be the winner!

### **Extra tip for effective game play:**

- Have patience! When playing games over the phone, it's inevitable that at some point, confusion can occur and people are no longer sure who's coloured in which space. Taking the time to solve the problem will mean you will have more fun in the long run!