

How to move the discs

You want to create a small set of instructions so that you could tell a friend how to move any given number of discs on the Towers of Hanoi.

Fill out the table below with the first move you would make with the first, second, third or fourth discs if there were 1–5 discs in total. All discs start on the left tower. Put down M if the disc moves to the middle tower, R if it moves to the right tower and a dash if the disc doesn't exist.

	1 disc	2 discs	3 discs	4 discs	5 discs
1st disc					
2nd disc					
3rd disc					
4th disc					

What conclusions can you draw about where the odd and even numbered discs go?

What happens before the third disc moves in the three-disc problem? Why?

What happens before the fourth disc moves in the four-disc problem? Why?

What happens before the fifth disc moves in the five-disc problem? Why?

What would happen before the d disc moves in the d -disc problem? Why?

How would you now tell a friend how to move 5, 6 or d discs?

What patterns can you see for moving discs after several moves have been made?

Write down an algorithm that would tell your friend what moves to make at any point.
