

On a strip like the one below, ask a friend to make up a sequence of twenty Hs and Ts that could represent a sequence of heads and tails generated by a fair coin, and ask them to write "made up" lightly in pencil on the back of the strip.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Then ask your friend to flip a fair coin twenty times and record the results on a second strip, and this time ask them to write "real" lightly in pencil on the back.

Take the two strips and try to work out which was real and which was made up - you could create similar strips and challenge your friend in the same way.

Generate several more sequences of twenty coin flips. You could flip your coins again, or use the interactivity at <http://nrich.maths.org/7250>. Using these random sequence, try to summarise the features you would expect a random sequence to have.

How would you analyse whether a sequence came from a real coin?
Send us your ideas and justify the method you use to decide.

Are you now better at spotting fakes? Ask your friend to create two more strips and see if you can find the truly random one.

Are you now better at creating fakes? Give your friend two more strips and see if they can spot the fake.