Skillswise

Investigate flipping a coin

There is a one in two chance of getting **heads** when you toss a coin. But what happens when you repeat the event many times? Will you get heads half the time and tails the half time?

Here is an experiment to investigate.

Get a coin and toss it 10 times. Record how many heads you get. On average you would expect to get 5 tails. Did you get more or less than 5?	☐ — 10

Toss the coin another 10 times. Did you get 5 heads this time?	☐ — 10

You have now tossed the coin 20 times altogether. How many heads did you get? (add your first two scores together.)	☐ — 20

If you have time, toss the coin another 80 times. You have now tossed the coin 100 times altogether. How many heads did you get out of 100? Is it close to 50? That is about what you'd expect.	☐ — 100

You have probably discovered that the score you get isn't always the expected amount.
It's not always half heads and half tails. But the more you play the closer it will get to half and half.

1

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How did you get on recording the results?

Each time you toss the coin it has an even chance of landing on either heads or tails. The coin doesn't remember what it landed on before.

We say each toss of the coin is **independent** of the others.

The more times you toss the coin in your investigation the more likely it will become that it's a half and half split between heads and tails.

Here is an example of how the results table might look.

Tosses	Amount of heads	Totals so far
0 to 10	3	3
11 to 20	5	8
21 to 30	6	14
31 to 40	2	16
41 to 50	7	23
51 to 60	6	29
61 to 70	4	33
71 to 80	5	38
81 to 90	7	45
91 to 100	4	49

So after 100 tosses you can see that there are 49 heads, which is very close to the expected 50.