

Heads or tails?

Annotation

Simon evaluates the conclusion drawn by a classmate and recognises that the conclusion was not what he thought it should be. He questions the steps in the classmate's process that led to that conclusion by questioning the way in which the classmate conducted the investigation. Simon conducts an experiment to test his own ideas and confirm his expectations. He understands that there are only two possible results and that these two results should be equally likely.

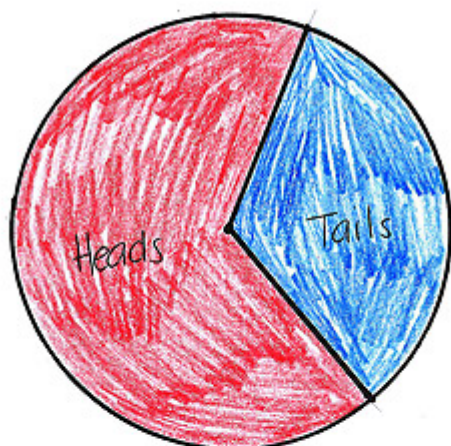
Problem: Heads or tails?

Rewi presents the results of a statistical investigation he has done. Rewi wonders if it is better to choose heads or tails if you want to win the toss at a sports game. He tosses a coin 30 times and gets 20 heads. He concludes that it is better to choose heads.

Heads or Tails?

I tossed a coin 30 times.

Heads	
Tails	



From now on I will always choose heads
because heads comes up more

by Rewi

The teacher poses the following problem for the students:

I am curious about this because it's not quite what I expected.

*Can you each go and think about this problem and write down your ideas so we can discuss them?
You might like to investigate further.*

Student Response

Simon's work sample is as follows:

HEADS OR TAILS? by Simon

I think it should be more like half because there are only two choices, so you should get half each.

Maybe Rewi didn't toss the coin properly and used a cup or something that made it get more heads.

Maybe he didn't throw it enough times. Sometimes you might get lots of one thing in a row, and then he might have stopped because it seemed like the answer.

Heads		90
Tails		110

I have tossed the coin 200 times and my results are different from Rewi. I've got fewer heads, but it's about half. In the middle it looked like tails was going to get more, but if you go on for longer the pattern changes. If everyone in the class did lots of tosses and we put them together it would be good because the more tosses you do the more it will come out properly.