

When the teachers play the students at hockey, they are equally matched - at any point in the match, either team is equally likely to score.



What are the possible results if 2 goals are scored in total?

Why are they not all equally likely?

The mathematical model assumed that when a goal is scored, the probabilities do not change. Is this a reasonable assumption?

Alison suggests: After a team scores, they are then twice as likely to score the next goal as well, because they are feeling more confident.

Charlie thinks: After a team scores, the opposing team are twice as likely to score the next goal, because they start trying harder.

What are the probabilities of each result according to Alison's model?
What are the probabilities of each result according to Charlie's model?

The models could apply to any sport where a small number of goals are typically scored.

You could find some data for matches between closely matched teams that finished with two goals and see which model fits most closely to what happened.

You will need to make some assumptions about what it means for teams to be "closely matched".