

Probability & Luck

60 - 120 minutes (approx.)

Overview: 2.3

Design and carry out a coin toss and card game experiment to test the rules of probability. Record the rules of play and analyse the odds of somebody winning the game. This lesson plan relates to challenge 2.3.

Learning Objectives: To test the rules of probability & luck

- To understand basic rules of probability.
- To learn the odds of different games.
- To invent a game based on probability.
- To investigate the results for the new game based on probability.

Learning Outcomes

1. I can offer a definition of probability.
2. I can understand the main rules of probability.
3. I can weigh up the odds associated with a new game.
4. I can test the results of a new game appropriately.

Resources

1. Power-point presentation on 'Probability & Luck'.
2. Infographics on 'Probability & Luck'.
3. Downloadable information sheets with facts and figures.
4. 'Probability & Luck' guidance notes and downloadable support materials.

Probability & Luck

Starter

(10 minutes)

Think about existing games which rely on probability or luck, from simple Snakes & Ladders to more complex games and examples of betting. Can we draw any initial conclusions?

Main Activity

(40 minutes-)

Creating a Game

Students can work in pairs or groups to create a new, simple game based on probability in order to understand the mathematical theories involved. They should then demonstrate the game to others, explaining how the odds work in favour or against those who play this. They should also be able to demonstrate how it is possible to change the odds to affect the outcomes of the game.

Findings from the discussion should be recorded in an appropriate format and shared. Students can use the skills sheet for 'Creative Thinking & Exploration', as appropriate. Students should use the appropriate skills sheet and complete the preparation and review sections to support this activity fully.

Plenary

(10 minutes)

What have we learned?

Which game was most interesting and innovative for demonstrating the rules of probability? Is it possible to stack the odds in your favour? Does this teach us any wider lessons?

Extension Task

Learn a new card game or other and examine how the rules of probability apply? Explain your findings to someone else you know.