3-6: REMOTE MATHS
EDITION 16
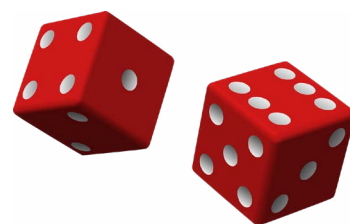
PROBABILITY AND STATISTICS - INVESTIGATIONS

Mathematical language: chance, data, likelihood, certain, frequency, most, tally, representation, probable, fair, trials, random, sample space.

INVESTIGATION 1: PROBABILITY

PART 1: IS IT FAIR?

In this investigation you and a family member will play the following game. After the game you will need to decide whether the game is fair or not.

- Teams consist of three players
- Each player takes turns rolling two dice and calculating the sum.
- Player A wins a point if the sum is 1, 2, 3, or 4
- Player B wins a point if the sum is 5, 6, 7, or 8
- Player C wins a point if the sum is 9, 10, 11, or 12
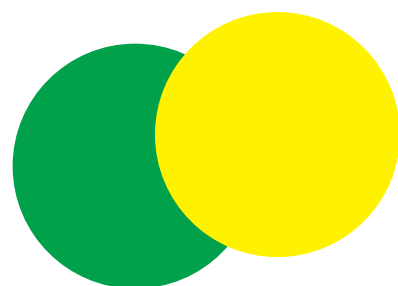- Winner is the first person to win 10 points.

Do you think this game if fair? Why or why not?

How can you prove that you are right?

TASK 2: THEORETICAL PROBABILITY

In this investigation you and a family member will work out the probability of both counters landing red side up. To do this, you will need to figure out what the sample space is by listing all of the possible outcomes for this experiment.

- In an experiment, Philip flips two counters. One side of each counter is yellow, and the other is green.
- Find all the possible outcomes.
- What is the probability of both counters landing green side up?
- How will you display the outcomes?

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INVESTIGATION 2: STATISTICS

PART 1: DATA REPRESENTATION   *Adapted from Peter Sullivan*

A graph showed that among a class of students the most popular footwear was track shoes. The next popular was boots. The next was sandals and the least popular was thongs.

- What might the graph look like?
- Draw this graph.
- Now draw another possibility.

PART 2: AVERAGES   *Adapted from Peter Sullivan*

In this investigation you and a family member will find as many possibilities as you can.

- There are five people in a family and their average age is 20.
- What might their ages be?
- How will you work this out?
- What other ages could they be?

Look out for more tasks next week!

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