

## Probability experiments

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### TARGET GROUP

Students at secondary education; high school. Students of about 15-17 years old.

### TOPIC

Probability and Simulation

### PRIOR MATHEMATICAL KNOWLEDGE

Rational Numbers; percentages and decimals, ratio & proportion. Simple statistics; using tables and graphs to organize and display information.

### PRIOR CALCULATOR EXPERIENCE

Basic Graphing Calculator experience, having used an APP before (know how to start an APP and knowing how to use the function keys)

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Reasoning about probability is difficult. Especially because certain intuitions seem to be very evident, but they can be very wrong. For example, when asking for the probability of the outcomes of tossing a coin (head or tail) – assuming the coin is fair and not tricked – most people will quickly and confidently report back with the correct response  $\frac{1}{2}$ . But the outcome of a single random toss of the coin is unpredictable. A famous French philosopher d'Alembert said "When a coin is tossed, it has forgotten what face came up the previous time it was tossed."

