

C1 - Probability Basics

- Calculate probability from given data.
- Express probability as a fraction, decimal and percentage.

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Probability: the mathematical likelihood of something happening.

Think-Pair-Share (Mini-Boards):

What are some practical uses of probability? (Record class results below)

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Calculate Probability

$$\text{Probability} = \frac{\text{\# of possible successful outcomes}}{\text{total \# of possible outcomes}}$$

The Queen's Card Trick

P(First Card is a Queen) =

P(Second Card is a Queen) =

P(Third Card is a Queen) =

P(Fourth Card is a Queen) =

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Probability may be expressed as a:

- fraction in lowest terms
- decimal
- percentage
- statement.

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Measuring Fish (Board Work)

A fisheries officer needs to measure the length of three different kinds of fish: pike, trout, and whitefish. The lake has been stocked with 250 fish.

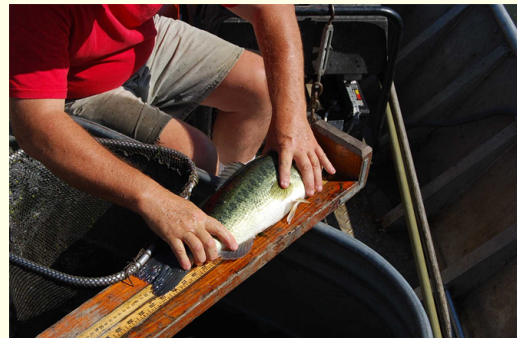
- 25 fish are pike.
- 75 fish are trout.
- 100 fish are whitefish.

The officer catches the first fish to be measured. What is the probability that the fish is

- a) a pike?
- b) a trout?
- c) a whitefish?
- d) any one of these three kinds of fish?

Express each answer in four ways:
fraction, decimal, percent, and words.

(MathAtWork12 pg. 22)



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Coin Toss (Board Work)

What are all the possible outcomes when flipping a coin two times?

Extend: ... three times?

A **tree diagram** or a **grid** can be useful ways to list all possible outcomes of an event.

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(Example of Coin Toss and Probabilities from next page)

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Coin Toss (Mini Boards)

In an experiment you flip a coin twice and record the result after each toss. What is the probability of:

- a) tossing two heads?
- b) tossing exactly one head?
- c) tossing no heads?
- d) tossing at least one head?

Express each answer as a fraction, decimal and percent.

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Deck of Cards (Independent)

A standard deck has 52 cards. If you chose one card, what is the probability of choosing

- a) a red card?
- b) a club?
- c) a queen?

Express each answer as a fraction, decimal and percent.

(MathAtWork12 pg. 24)

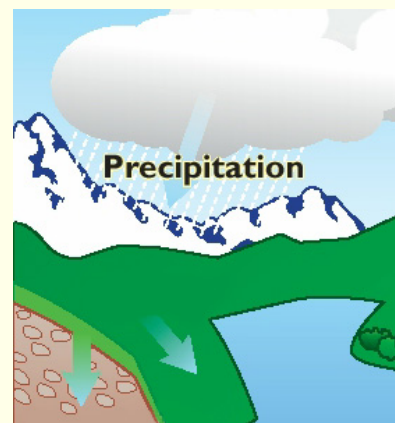


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Probability of Precipitation (POP)

(Board Work)

Part of a meteorologist's job is to predict the probability of precipitation (POP). In Gander, NL, one day the POP is 60%. What is the probability in words, as a fraction, and as a decimal? (MathAtWork12 pg. 25)



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Defective Tires (Independent)

A tire manufacturing company does random testing of tires coming off the production lines to ensure that they are produced correctly. After testing, the quality control manager calculates that the experimental probability of a tire having a defect is 0.003.

a) What is the probability as a fraction and as a percentage?

b) In a production run of 30 000 tires, how many tires would you expect to be defective? Non-defective? (MathWorks12 pg. 168)



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