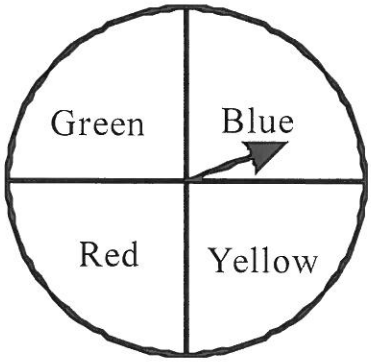
Worksheet 2015-8ŁK-00001(1)

(1) A colour wheel has four coloured sectors. The sectors are green, blue, red and yellow respectively.



(a) What is the chance that the indicator on the wheel will land on yellow if it is spinned only once?

$\frac{1}{4}$

(b) If the wheel is only spinned once, what are the chances that the indicator will not land on red?

$\frac{3}{4}$ (Green, blue or yellow)

(c) What is the chance that the indicator on the wheel will land on white if it is spinned only once?

$\frac{0}{4} = 0$ (No white!)

(2) A die is cast.

(a) What are the chances of the die landing on an uneven number?

$\frac{3}{6} = \frac{1}{2}$ (1; 3; 5)

(b) What are the chances of the die landing on a six?

$\frac{1}{6}$

(c) What are the chances of the die landing on a prime number?

$\frac{3}{6} = \frac{1}{2}$ (2; 3; 5)

Total = 8 + 7 + 5 = 20

(3) There are 8 white marbles, 7 red marbles and 5 green marbles in a bag. You may choose only one marble from the bag. What is the probability that the marble that you have chosen is:

(a) red?

$\frac{7}{20}$

(b) white?

$\frac{8}{20} = \frac{2}{5}$

(c) is neither red, nor white?

⇒ Green

$\therefore \frac{5}{20} = \frac{1}{4}$

(d) Which colour has the best chance to be chosen?

White, because most of the marbles are white!

(4) Explain the following concepts:

(a) probability.

The chance that a certain outcome will occur.

(b) possible outcome(s).

Specific results after an experiment has taken place.

(c) relative frequency.

The ratio between the total number of outcomes in a series of experiments and the total number of observations for the experiment.

(5) Consider the table below which is a summary of 6 experiments. The aim of the experiments was to determine which of the following subjects are most popular among the learners. LO, Arts and culture or Technology. The learners could choose only ONE subject!

Experiment	1	2	3	4	5	6
Number of learners participated	135	144	125	200	188	234
LO as first choice	66	56	44	28	34	46
Art and culture as first choice	13	60	24	89	66	100
Technology as first choice	56	28	57	83	88	88

(a) Complete the table.

(b) Determine the relative frequency of experiment 6 for each outcome.

Exp. 6 : LO $\rightarrow \frac{46}{234} = \frac{23}{117}$ (RF)

Art & C $\rightarrow \frac{100}{234} = \frac{50}{117}$ (RF)

Techn $\rightarrow \frac{88}{234} = \frac{44}{117}$ (RF)

(c) Determine the relative frequency for all experiments in total for LO as preferred subject.

LO total = $66+56+44+28+34+46 = 274$

Total = $135+144+125+200+188+234 = 1026$

$\therefore$ RF for LO = $\frac{274}{1026} = \frac{137}{513}$

(6) Choose the correct answer for each of the following statements:

(a) Which of the following is an experiment?

A. Tossing a coin.

B. Casting a die.

C. Taking one sucker from a bag.

D. All of above.

D

(b) Which of the following is an outcome?

A. Casting a die.

B. Choosing a number from a choice of 6 different numbers.

C. A die landing on a six.

D. None of the above.

C

(7) The Conrad couple is expecting twins. What are the chances that they're expecting two boys?
Draw a tree-diagram!

P(2 boys) = $\frac{1}{4}$ at *

There are 4 possible outcomes!