Glossary

Instructional Words

C

calculate [*calculer*]**:** Complete one or more mathematical operations; compute

clarify [*clarifier*]**:** Make a statement easier to understand; provide an example

classify [*classer* ou *classifier*]**:** Put things into groups according to a rule and label the groups; organize into categories

compare [*comparer*]**:** Look at two or more objects or numbers and identify how they are the same and how they are different

conclude [*conclure*]**:** Judge or decide after reflection or after considering data

construct [*construire*]**:** Make or build a model; draw an accurate geometric shape (e.g., Use a ruler and a protractor to construct an angle.)

create [*inventer* ou *créer*]**:** Make your own example

D

describe [*décrire*]**:** Tell, draw, or write about what something is or what something looks like; tell about a process in a step-by-step way

determine [*déterminer*]**:** Decide with certainty as a result of calculation, experiment, or exploration

draw: 1. [*dessiner*] Show something in picture form (e.g., Draw a diagram.)
2. [*tirer*] Pull or select an object (e.g., Draw a card from the deck. Draw a tile from the bag.)

E

estimate [*estimer*]**:** Use your knowledge to make a sensible decision about an amount; make a reasonable guess (e.g., Estimate 3210 + 789.)

evaluate [*évaluer*]**:** 1. Determine if something makes sense; judge
2. Calculate the value as a number

explain [*expliquer*]**:** Tell what you did; show your mathematical thinking at every stage; show how you know

explore [*explorer*]**:** Investigate a problem by questioning, brainstorming, and trying new ideas

extend [*prolonger*]**:** 1. In patterning, continue the pattern
2. In problem solving, create a new problem that takes the idea of the original problem further

J

justify [*justifier*]**:** Give convincing reasons for a prediction, an estimate, or a solution; tell why you think your answer is correct

M

measure [*mesurer*]**:** Use a tool to describe an object or determine an amount (e.g., Use a protractor to measure an angle.)

model [*représenter* ou *faire un modèle*]**:** Show or demonstrate an idea using objects and/or pictures (e.g., Model addition of integers using red and blue counters.)

P

predict [*prédire*]**:** Use what you know to work out what is going to happen (e.g., Predict the next number in the pattern 1, 2, 4, 7,…)

R

reason [*raisonner* ou *argumenter*]**:** Develop ideas and relate them to the purpose of the task and to each other; analyze relevant information to show understanding

relate [*établir un lien* ou *associer*]**:** Describe how two or more objects, drawings, ideas, or numbers are similar

represent [*représenter*]**:** Show information or an idea in a different way that makes it easier to understand (e.g., Draw a graph. Make a model. Create a rhyme.)

S

show (your work) [*montrer son travail* ou *présenter sa démarche*]: Record all calculations, drawings, numbers, words, or symbols that make up the solution

sketch [*esquisser*]: Make a rough drawing (e.g., Sketch a picture of the field with dimensions.)

solve [*résoudre*]: Develop and carry out a process for finding a solution to a problem

sort [*trier* ou *classer*]: Separate a set of objects, drawings, ideas, or numbers according to an attribute (e.g., Sort 2-D shapes by the number of sides.)

V

validate [*valider*]: Check an idea by showing that it works

verify [*vérifier*]: Work out an answer or solution again, usually in another way; show evidence of

visualize [*imaginer*]: Form a picture in your head of what something is like; imagine

Mathematical Words

A

algebraic expression [*expression* (n.f.) *algébrique*]: The result of applying arithmetic operations to numbers and variables; e.g., $3x$ or $5x + 2$. Sometimes this is just called an expression.

angle bisector [*bissectrice* (n.f.)]: A line that cuts an angle in half to form two equal angles

B

base [*base* (n.f.)]: The side of a shape that is measured for calculating the area or perimeter of a shape. Each base has a corresponding height that creates a 90° angle with the base. Any side of a shape can be the base of the shape.

C

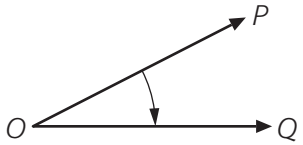
Cartesian coordinate system [*système* (n.m.) *de coordonnées cartésiennes*]: A method (named after mathematician René Descartes) for describing a location by identifying the distance from a horizontal number line (the x-axis) and a vertical number line (the y-axis). The location is represented by an ordered pair of coordinates (x, y). The axes intersect at (0, 0), which is called the origin.

centre of rotation [*centre* (n.m.) *de rotation*]: A fixed point around which other points in a shape rotate in a clockwise (cw) or counterclockwise (ccw) direction; the centre of rotation may be inside or outside the shape

circle graph [*diagramme* (n.m.) *circulaire*]: A graph that shows how the parts make up a whole

circumference [*circonférence* (n.f.)]: The boundary of a circle; the length of this boundary

clockwise (cw) [*dans le sens* (n.m.) *des aiguilles d'une montre*]: Turning in a sense similar to the hands of a clock; e.g., a turn from direction OP to direction OQ is a clockwise turn (Also see **counterclockwise**.)



common denominator [*dénominateur* (n.m.) *commun*]: A common multiple of two or more denominators; e.g., for $\frac{2}{3}$ and $\frac{3}{6}$, a common denominator would be any multiple of 6. If you use the least common multiple of the denominators, the common denominator is called the lowest common denominator.

common factor [*diviseur* (n.m.) *commun*]: A whole number that divides into two or more other numbers with no remainder; e.g., 4 is a common factor of 12 and 24

common multiple [*multiple* (n.m.) *commun*]: A number that is a multiple of two or more given numbers; e.g., 12, 24, and 36 are common multiples of 4 and 6

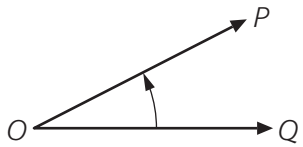
complementary event [*événement* (n.m.) *complémentaire*]: The set of outcomes in the sample space in which the event does not happen; e.g., when rolling a die, the event (rolling 2) has the complementary event (rolling 1, 3, 4, 5, or 6)

constant [***constante*** (n.f.)]**:** A quantity that does not change; e.g., in $2 \times n + 5$, 5 is a constant

convex [***convexe***]**:** A design where all interior angles measure no greater than 180°

coordinates [***coordonnées*** (n.f.pl.) ***d'un point ou coordonnées*** (n.f.pl.)]**:** An ordered pair, used to describe a location on a grid labelled with an x-axis and a y-axis; e.g., the coordinates (1, 3) describe a location on a grid that is 1 unit horizontally from the origin and 3 units vertically from the origin

counterclockwise (ccw) [***dans le sens*** (n.m.) ***contraire des aiguilles d'une montre***]**:** Turning in a sense opposite to the hands of a clock; e.g., a turn from direction OQ to direction OP is a counterclockwise turn (Also see **clockwise**.)



D

diameter [***diamètre*** (n.m.)]**:** A line segment that joins two points on the circumference of a circle and passes through the centre; the length of this line segment

digital root [***racine*** (n.f.) ***numérique***]**:** The number obtained by adding the digits of a number, then repeating the digit addition for each new number found, until a single-digit number is reached; e.g., the digital root of 123 is $1 + 2 + 3 = 6$

divisibility rule [***règle*** (n.f.) ***de divisibilité ou caractères*** (n.m.pl.) ***de divisibilité***]**:** A way to determine if one whole number is a factor of another whole number without actually dividing the entire number

dodecagon [***dodécagon*** (n.m.)]**:** A polygon with 12 straight sides and 12 angles

E

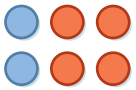
equally likely outcomes [***résultats*** (n.m.pl.) ***également probables***]**:** Two or more outcomes that have an equal chance of occurring; e.g., the outcome of rolling a 1 and the outcome of rolling a 2 on a 6-sided die are equally likely outcomes because each outcome has a probability of $\frac{1}{6}$

equation [***égalite*** (n.f.)**;** ***remarque: en français, une équation comporte obligatoirement une inconnue***]**:** A statement that two quantities or expressions are equivalent; e.g., $4 + 2 = 6$ and $6x + 2 = 14$

equivalent [***équivalent***]**:** Equal in value; e.g., two equivalent fractions are $\frac{1}{2}$ and $\frac{2}{4}$, two equivalent ratios are 6 : 4 and 9 : 6, and the fraction $\frac{1}{2}$ is equivalent to the decimal 0.5

equivalent rate [***rapport*** (n.m.) ***équivalent***]**:** A rate that describes the same comparison as another rate; e.g., 2 for $4 is equivalent to 4 for $8

equivalent ratio [***rapport*** (n.m.) ***équivalent***]**:** A ratio that represents the same relationship as another ratio; e.g., 2 : 4 is an equivalent ratio to 1 : 2 because both ratios describe the relationship of the blue counters to the red counters. There are 2 red counters for each blue counter, but also 4 red counters for every 2 blue counters.



event [***événement*** (n.m.)]**:** A set of one or more outcomes in a probability experiment; e.g., the event of rolling an even number with a six-sided die consists of the outcomes of rolling a 2, a 4, or a 6

experimental probability [***probabilité*** (n.f.) ***expérimentale***]**:** In a probability experiment, the ratio of the number of observed favourable outcomes to the number of trials, or repetitions, of the experiment

expression [***expression*** (n.f.) ***numérique***]**:** See **algebraic expression** [***expression algébrique*** (n.f.)]

F

factor [***facteur*** (n.m.)]**:** One of the numbers you multiply in a multiplication operation

$$\underset{\text{factor}}{2} \times \underset{\text{factor}}{6} = 12$$

favourable outcome [***résultat*** (n.m.) ***favorable***]**:** The desired result in a probability experiment

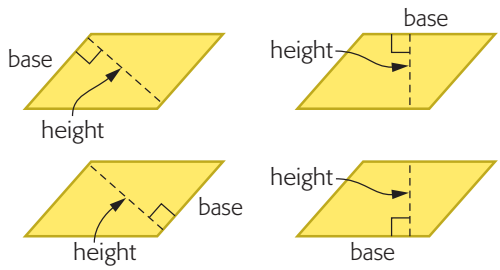
formula [***formule*** (n.f.)]**:** A rule represented by symbols, numbers, or letters, often in the form of an equation; e.g., area of a rectangle = length × width, or $A = l \times w$

G

greatest common factor (GCF) [***plus grand diviseur*** (n.m.) ***commun, ou PGDC***]**:** The greatest whole number that is a factor of two or more whole numbers; e.g., 4 is the greatest common factor of 8 and 12.

H

height [*hauteur* (n.f.)]: A line segment drawn to form a right angle with the side of a shape



heptagon [*heptagone* (n.m.)]: A polygon with 7 straight sides and 7 angles

hexagon [*hexagone* (n.m.)]: A polygon with 6 straight sides and 6 angles

hypotenuse [*hypoténuse* (n.f.)]: The longest side of a right triangle; the side opposite the right angle

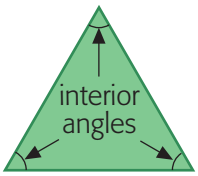
I

improper fraction [*fraction* (n.f.) *impropre*]: A fraction whose numerator is greater than its denominator; e.g., $\frac{5}{4}$ is an improper fraction

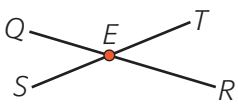
independent events [*événements* (n.m.pl.) *indépendents*]: Two events are independent if the probability of one is not affected by the probability of the other

integer [*nombre* (n.m.) *entier ou entier* (n.m.)]: The counting numbers (+1, +2, +3,…), zero (0), and the opposites of the counting numbers (–1, –2, –3,…)

interior angle [*angle* (n.m.) *intérieur*]: The inside angle of a polygon



intersection point [*le point d'intersection* (n.m.)]: The point where two lines or line segments cross each other; e.g., QR intersects ST at intersection point E



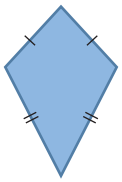
isolate [*isoler*]: To show the same equation in an equivalent way so the variable is alone on one side

isometric drawing [*diagramme* (n.m.) *isométrique*]: A 3-D view of an object in which

- vertical edges are drawn vertically
- width and depth are drawn diagonally
- equal lengths on the object are equal on the drawing

K

kite [*cerf-volant* (n.m.)]: A convex quadrilateral with two pairs of equal adjacent sides

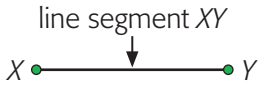


L

least common multiple (LCM) [*plus petit multiple* (n.m.) *commun, ou PPMC*]: The least whole number that has two or more given whole numbers as factors; e.g., 12 is the least common multiple of 4 and 6

linear relation [*rapport* (n.m.) *linéaire ou relation* (n.f.) *de variation directe*]: A relation whose plotted points lie on a straight line

line segment [*segment* (n.m.) *de droite ou segment* (n.m.)]: Part of a line with two endpoints; it is named using the labels of the endpoints; e.g., the line segment joining points X and Y is called XY



lowest terms [*sous forme* (n.f.) *irréductible*]: An equivalent form of a fraction with numerator and denominator that have no common factors other than 1; e.g., $\frac{3}{4}$ is the lowest term form of $\frac{12}{16}$, since $\frac{3}{4} = \frac{12}{16}$ and 3 and 4 have no common factors other than 1

M

mean [*moyenne* (n.f.)]: A representative value of a set of data; it is determined by sharing the total amount of the data evenly amongst the number of values in the set; e.g., consider the set of data: 3, 6, 8, 14, 9. There are 5 values, whose sum is 40. The mean is 8, because 40 divided equally among 5 values would give each number the value 8. That is, $40 \div 5 = 8$.

median [*médiane* (n.f.)]: A representative value of a set of data; the middle value of the ordered data. When there is an odd number of values, the median is the middle value; e.g., the median of 2, 3, and 4 is 3. When there is an even number of values, it is the value halfway between the two middle values; e.g., the median of 2, 3, 4, 5, 6 and 6 is 4.5.

midpoint [*milieu* (n.m.)]: The point on a line segment that divides the line segment into two equal parts

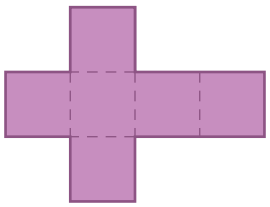
mixed number [*nombre* (n.m.) *mixte*]: A number expressed as a whole number and a fraction; e.g., $2\frac{1}{2}$ is a mixed number

mode [*mode* (n.m.)]: A representative value of a set of data; the value or item that occurs most often in a set of data. A set of data might have no mode, 1 mode, or more than 1 mode; e.g., the mode of 1, 5, 6, 6, 6, 7, and 10 is 6.

multiple [*multiple* (n.m.)]: The product of a whole number and any other whole number; e.g., when you multiply 10 by the whole numbers 0 to 4, you get the multiples 0, 10, 20, 30, and 40

N

net [*développement* (n.m.)]: A 2-D pattern you can fold to create a 3-D object; e.g., this is a net for a cube

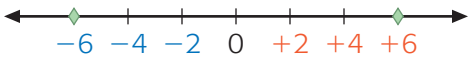


numerical coefficient [*coefficient* (n.m.)]: The multiplier of a variable; e.g., in $2 \times n + 5$, 2 is the numerical coefficient of n

O

octagon [*octogone* (n.m.)]: A polygon with 8 straight sides and 8 angles

opposite integers [*nombres entiers opposés* (n.m.pl.) *ou entiers* (n.m.pl.) *opposés*]: Two integers the same distance away from zero; e.g., +2 and −2 are opposite integers



order of operations [*priorité* (n.f.) *des opérations*]: A set of rules people use when calculating, in order to get the same answer. The rules for the order of operations are:
Step 1: Do the operations in brackets first.
Step 2: Divide and multiply from left to right.
Step 3: Add and subtract from left to right.
To remember the rules, think of "BDMAS": Brackets, Divide and Multiply, Add and Subtract.

origin [*origine* (n.f.)]: The point from which measurement is taken; in the Cartesian coordinate system, it is the intersection of the vertical and horizontal axes and is represented by the ordered pair (0, 0)

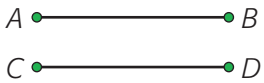
outcome [*résultat* (n.m.)]: A result of an event or experiment. For example, rolling a 1 is one possible outcome when you roll a die.

outcome table [*tableau* (n.m.) *des résultats*]: A chart that lists all possible outcomes of a probability experiment

outlier [*observation* (n.f.) *aberrante*]: A data value that is far from the other data values

P

parallel [*parallèle*]: Always the same distance apart; e.g., line segments AB and CD are parallel



part-to-part ratio [*rapport partie/partie*]: A comparison of two parts of the same whole; e.g., 2 : 4 compares the number of red tiles to the number of blue tiles

part-to-whole ratio [*rapport partie/tout*]: A comparison of part of a whole to the whole (e.g., 2 : 6 compares the number of red tiles to the total number of tiles) that can be written as a fraction, such as $\frac{2}{6}$

pattern rule [*règle* (n.f.) *de la suite*]: A way to describe a pattern that compares a characteristic of the figure to the figure number; e.g., a pattern rule for the pattern shown below is $b = 4 \times n + 1$, where b is the number of blocks in figure n

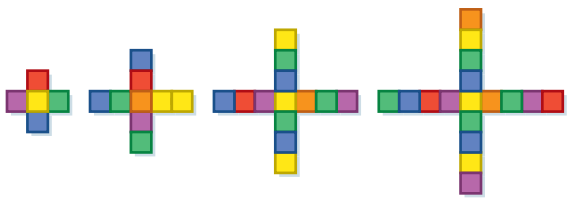
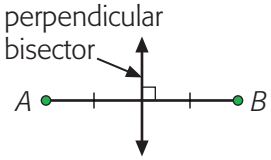


figure 1 figure 2 figure 3 figure 4

percent [*pourcentage* (n.m.)]: A part-to-whole ratio that compares a number or an amount to 100; e.g., $25\% = 25:100 = \frac{25}{100}$

perfect square [*carré* (n.m.) *parfait*]: The product of a whole number multiplied by itself; e.g., 49 is a perfect square because $49 = 7 \times 7$

perpendicular bisector [*bissectrice* (n.f.) *perpendiculaire*]: A line that intersects a line segment at 90° and divides it into two equal lengths; any point on the perpendicular bisector to AB is equidistant from endpoints A and B



π (pi) [*(pi)* (n.m.) ou π]: The ratio of the circumference of a circle to its diameter; its value is about 3.14

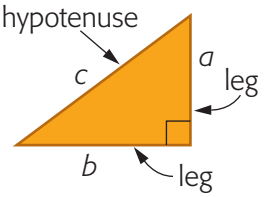
plane [*plan* (n.m.)]: A flat surface that goes on forever in two different directions

prime number [*nombre* (n.m.) *premier*]: A number with only two factors, 1 and itself; e.g., 17 is a prime number since its only factors are 1 and 17

probability [*probabilité* (n.f.)]: A number from 0 to 1 that shows how likely it is that an event will happen

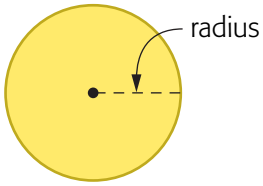
proportion [*proportion* (n.f.)]: A number sentence that shows two equivalent ratios or fractions; e.g., $1:2 = 2:4$ or $\frac{1}{2} = \frac{2}{4}$

Pythagorean theorem [*théorème* (n.m.) *de Pythagore*]: Statement of a relationship in which the sum of the squares of the lengths of the legs of a right triangle is equal to the square of the length of the hypotenuse. This is written algebraically as $a^2 + b^2 = c^2$.



R

radius [*rayon* (n.m.)]: Half the diameter of a circle—the distance from the centre of a circle to a point on the circumference



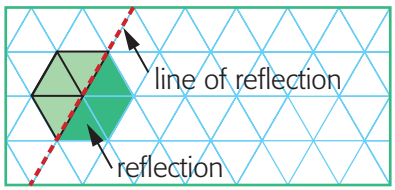
range [*étendue* (n.f.)]: The difference between the greatest and least number in a set of data; e.g., the range of 6, 7, 7, 8, 9 is 3, because $9 - 6 = 3$

rate [*rapport* (n.m.)/*relation* (n.f.)]: A comparison of two amounts measured in different units; e.g., cost per item or distance compared to time. The word "per" means "to" or "for each" and is written using a slash (/); e.g., a typing rate of 250 words/8 min

ratio [*rapport* (n.m.) / *relation* (n.f.)]: A comparison of two numbers (e.g., 5 : 26 is the ratio of vowels to letters in the alphabet) or of two measurements with the same units (e.g., 164 : 175 is the ratio of two students' heights in centimetres). Each number in the ratio is called a term.

reciprocal [*réciproque* (n.f.)]: The fraction that results from switching the numerator and the denominator; e.g., $\frac{4}{5}$ is the reciprocal of $\frac{5}{4}$

reflection [*réflexion* (n.f.)]: The result of a flip of a 2-D shape; each point in a 2-D shape flips to the opposite side of the line of reflection, but stays the same distance from the line (Also see **transformation**.)



relation [*relation* (n.f.)]: A property that allows you to use one number to get information about another number

repeating decimal [*suite* (n.f.) *décimale périodique*]: A decimal in which a block of one or more digits eventually repeats in a pattern;
e.g., $\frac{25}{99} = 0.252\ 525\ \ldots$, $\frac{31}{36} = 0.861\ 111\ 1\ \ldots$, $\frac{1}{7} = 0.142\ 857\ 142\ 857\ldots$. These repeating decimals can also be written as $0.\overline{25}$, $0.86\overline{1}$, and $0.\overline{142\ 857}$.

rotation [*rotation* (n.f.)]: A transformation in which each point in a shape moves about a fixed point through the same angle

S

sample space [*espace* (n.m.) *des échantillons*]: All possible outcomes in a probability experiment

scatter plot [*diagramme* (n.m.) *de dispersion*]: A graph that attempts to show a relationship between two variables by means of points plotted on a coordinate grid

solution to an equation [*solution* (n.f.) *d'une équation*]: A value of a variable that makes an equation true; e.g., the solution to $6x + 2 = 14$ is $x = 2$

speed [*vitesse* (n.f.)]: The rate at which a moving object travels a certain distance in a certain time; e.g., a sprinter who runs 100 m in 10 s has a speed of 100 m/10 s = 10 m/s

square root [*racine* (n.f.) *carrée*]: One of two equal factors of a number; e.g., the square root of 81 is 9 because 9×9, or 9^2, $= 81$; sometimes called a root

statistics [*statistique* (n.f.)]: The collection, organization, and interpretation of data

T

terminating decimal [*fraction* (n.f.) *décimal finie*]: A decimal that is complete after a certain number of digits with no repetition; e.g., 0.777

tessellation [*mosaïque* (n.f.)]: The tiling of a plane with one or more congruent shapes without any gaps or overlaps

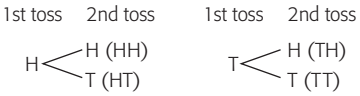
theoretical probability [*probabilité* (n.f.) *théorique*]: The ratio of the number of favourable outcomes to the number of possible equally likely outcomes; e.g., the theoretical probability of tossing a head on a coin is $\frac{1}{2}$, since there are 2 equally likely outcomes and only 1 is favourable

three-term ratio [*rapport* (n.m.) *à trois termes*]: A ratio that compares three quantities; e.g., the ratio 2 : 3 : 5 (or, 2 to 3 to 5) describes the ratio of red to blue to yellow squares

transformation [*transformation géométrique* (n.f.)]: The result of moving a shape according to a rule; transformations include translations, rotations, and reflections

translation [*translation* (n.f.)]: The result of a slide; the slide must be along straight lines, left or right, up or down (Also see **transformation**.)

tree diagram [*diagramme* (n.m.) *en arbre ou arbre* (n.m.)]: A way to record and count all combinations of events, using lines to connect the two parts of the outcome



trial [*essai* (n.m.) *ou événement* (n.m.)]: A single event or observation in a probability experiment

U

unit rate [*valeur* (n.f.) *unitaire*]: A rate in which the second term is 1; e.g., in swimming, 12 laps/6 min can be written as a unit rate of 2 laps/min

V

variable [*variable* (n.f.)]: A letter or symbol, such as a, b, x, or n, that represents a number; e.g., in the formula for the area of a rectangle, the variables A, l, and w represent the area, length, and width of the rectangle

Z

zero principle [*principe* (n.m.) *de la somme des nombres opposés*]: When two opposite integers are added, the sum is zero; e.g.,