# Year 7 Unit 4
# Fractions

## FRACTIONS VOCABULARY

| | |
|---|---|
| **fraction** | represents the **division** of **one integer** by **another**, *e.g.* $\frac{2}{3}$ **= 2 ÷ 3** |
| **vinculum** | the **line** in the **middle of a fraction** |
| **numerator** | the **number above the vinculum** in a fraction |
| **denominator** | the **number below the vinculum** in a fraction |
| **unit fraction** | a fraction where the **numerator is 1,** *e.g.* $\frac{1}{6}$ |
| **proper fraction** | a fraction where the **numerator** is **smaller than** the **denominator**, *e.g.* $\frac{3}{5}$ |
| **improper fraction** | a fraction when the **numerator** is **greater than** the **denominator**, e.*g.* $\frac{5}{3}$ |
| **reciprocal** | the reciprocal of a number is **1 divided by the number**, *e.g. the reciprocal of x is* $\frac{1}{x}$, *the reciprocal of* $\frac{3}{4}$ *is* $\frac{4}{3}$ |
| **mixed number** | a number formed of both an **integer** part **and** a **fractional** part, e.*g.* $3\frac{2}{5}$ |
| **dividend** | the **amount** to be **divided up** |
| **divisor** | the **amount** you are **dividing by** |
| **quotient** | the **result** of a **division** (**Dividend ÷ divisor** = **quotient**) |
| **remainder** | the amount **left over** when a divisor doesn't fit into a dividend exactly |

## FRACTIONS MANIPULATION

| | |
|---|---|
| **equivalent fractions** | fractions which **represent** the **same value** *e.g.* $\frac{2}{3}$ *and* $\frac{4}{6}$ **multiply** the **numerator** and **denominator** by the **same amount** |
| **simplifying fractions** | fractions can be **simplified** by **dividing** the **numerator** and **denominator** by a **common factor** to get a fraction in its **simplest form, you must divide by the highest common factor** (HCF) |
| **mixed to improper** | **multiply** the **denominator** by the **whole number** part**, add** this to the **numerator** |
| **improper to mixed** | **divide** the **numerator** by the **denominator,** the **quotient** is the **whole number part,** the **remainder** is then **written** as a **fraction** |
| **fractions of amounts** | **divide by the denominator** (bottom number) and **multiply by the numerator** (top number) |

## FRACTION NOTATION



## FRACTIONS: OPERATIONS

| | | |
|---|---|---|
| **add** | you need a **common denominator,** then **add** the **numerator** | $\frac{A}{B}+\frac{C}{B}=\frac{A+C}{B}$ |
| **subtract** | you need a **common denominator,** then **add** the **numerator** | $\frac{A}{B}-\frac{C}{B}=\frac{A-C}{B}$ |
| **addition and subtraction of mixed numbers** | you need to **convert** mixed numbers **into improper fractions** with a **common denominator,** then **add/subtract** the **numerators** | |
| **multiply** | **multiply** the **numerators** **multiply** the **denominators** | $\frac{A}{B}\times\frac{C}{D}=\frac{AC}{BD}$ |
| **divide (KCF)** | **keep** the **first fraction** **change** the ÷ to x **flip** the **second fraction,** then **multiply** | $\frac{A}{B}\div\frac{C}{D}=\frac{A}{B}\times\frac{D}{C}$ $=\frac{AD}{BC}$ |
| **multiply and divide mixed numbers** | you need to **convert** mixed numbers **into improper fractions,** the **use the methods** for multiplying and division **as above** | |

## COMMON FDP CONVERSIONS

| fraction | decimal | percentage |
|---|---|---|
| 1/2 | 0.5 | 50% |
| 1/4 | 0.25 | 25% |
| 3/4 | 0.75 | 75% |
| 1/10 | 0.1 | 10% |

## COMPARING FRACTIONS

| | |
|---|---|
| **proportion** | an **amount of a whole** |
| **comparing fractions** | re-write the fractions with **common denominators** **compare the numerators** |
| **comparing FDP** | **convert** all to **decimals** **write** your **answers** as it was **originally given** in the question |
| **ascending** | putting in **order going up** |
| **descending** | putting in **order going down** |
| **ordering fractions** | re-write the fractions with **common denominators** **compare the numerators** to **order them** |