What Science Students Need to Know About Fractions

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- 1. Numerator tells how many; denominator tells what kind* *connect to chemistry
- 2. Four meanings of a fraction
 - a) fractional part of a whole
 - b) fractional part of a group
 - c) ratio
 - d) division
- 3. Forms: $3 \div 7$ means $\frac{3}{7}$ means $7\overline{)3}$, etc.
- 4. Unit fraction: numerator = 1
- 5. Speed is fraction with time on the bottom
- 6. Dimensional analysis: conversion fractions = 1
- 7. Weight per unit volume: do the division so that denominator = 1
- 8. Per cent is fraction with denominator of 100
- 9. Variation: direct, inverse, joint; rate of work; hen-and-a-half lays an egg-and-a-half in a day-and-a-half
- Proportion is the equality of two ratios.
 Flip
 Switch
 Dial
 Cross-multiply

11. Calculator: how to enter $\frac{13.6 \times 88}{.053 \times 7020}$ into a calculator correctly.

12. If the numerator of a fraction increases while the denominator remains the same, then the fraction's value increases. If the denominator's value increases while the numerator remains the same, the value of the fraction decreases. If both numerator and denominator increase, we can't tell how the new value compares automatically. The same is true if both decrease.

This is useful when considering the effects on intensity or density, or other such ratios, of adjustments made to either variable.