

# Strategies for Memorizing Formulas

## ① Deconstruction / Scaffolding

It's helpful to understand how a formula was created or builds from other formulas that you know, or to put yourself into a situation where it develops.



- Once you know area of a rectangle is  $b * h$ , you can scaffold other concepts on to it, such as cutting a rectangle in half to form triangles (creating  $\frac{bh}{2}$  or  $\frac{1}{2}bh$ ), and taking the average of the two unequal bases in trapezoids (creating  $h * \frac{B+b}{2}$  or  $\frac{1}{2}(B+b)h$ ).
- If you are trying to memorize the surface area of a cube, imaging yourself painting each side of it, or grab something cube-like and you might realize that it would be adding together the areas of all six sides. (that process can be changed to multiplication for sides that have equal measures).
- Learning how to rearrange formulas (as challenging as that is for some students), can reduce the number of formulas you need to memorize that simply isolate different variables in the same basic formula (e.g. in statistics the formula for determining a z score is simply rearranged to determine a data value for a given z score, but often the two formulas are taught separately).

## ② Mnemonics: Acronyms / Acrostics / Stories / Rhymes / Songs & Rap

These methods alter unfamiliar information into more familiar (and easier to memorize)formats.



- Acronyms reduce key information into the first letter of each, and then create a word (in order if the information is sequential). eg. DIRT, SOAP, ARM (or RAM)
- Acrostics do the same, but create a sentence which flows more easily than the list of steps. eg. Please Excuse My Dear Aunt Sally, or Balance is Prioritizing Random Things.
- Stories change information into a situation with items or actions that flow more easily than the steps or formula. See the handout on Activating & Personifying.
- Songs & Rap use the idea that we always seem to easily memorize lyrics. By adding a (usually familiar) melody to the steps or formula, they become lyrics. eg. the quadratic formula sung to "Pop Goes the Weasel"

## ③ Flashcards:

Put the formula on one side and either its name or a sample problem that would require the formula on the other side. Study fewer than 7 of these at a time until they are memorized.

## ④ Templates:

These are for memorizing the structure of a formula so that you can fill it in with the information from a problem.

Slope Formula

