

## Kinaesthetic Maths Ideas

1. One is to put numbers or expressions in order. You write the numbers on index cards, hand one to each student randomly and the students line up in order of the size of the numbers without talking. You can give them the numbers (perhaps more than the numbers you will hand out) ahead of time so they can work in pairs to figure out the order without knowing which numbers they will actually get. You can make packs of these to use from time to time or just for 2 students to arrange in order. Observing and probing students doing this provides a good assessment. Some I have used are:

fractions or decimals such as  $\frac{5}{6}$ ,  $\frac{3}{7}$ ,  $\frac{1}{2}$ ,  $\frac{8}{7}$ ,  $\frac{5}{4}$ ,  $\frac{1}{3}$ ,  $\frac{2}{5}$ ,  $\frac{5}{8}$ , or 350, .9, .065, 1.1, .08

mixed fractions, decimals, percents 50%, .8,  $66\frac{2}{3}\%$ , .6,  $\frac{7}{8}$ ,  $\frac{2}{5}$ , .75

expressions with exponents such as  $2^3 \cdot 3^2$   
 $2^5 \cdot 3$  (could also include roots)

numbers with powers of 10:  $3 \times 10^2$   $8 \times 10^1$   $3 \times 10^3$   $8 \times 10^{-2}$   $3 \times 10^{-1}$

You can also mix in negative numbers if students are ready, eg.  $-3 \times 10^2$

"geoboard shapes" to order by area,

or a variety of problems of one computation type to order by size of answer without actually writing out the computation.

$20/.5$   $200/50$   $20/5$   $2/.5$   $200/500$

2. Another general kind of activity, is to ask students to write problems that have certain answers or certain kinds of answers. Make it an informal time when they can work together, share ideas, try one another's problems, or just put up a piece of chart paper for them to write the problems.

A familiar version of this is to do number of the day with restrictions, as in the broken calculator game: Make the number 37.5 using only subtraction and division. Make 14, using exponents, addition and subtraction.

Or, instead of doing "number of the day" do unknown of the day for which students write an equation with one unknown for which is the number. Start with small positive integers; later try negative integers, simple fractions. For students who master this, try providing two numbers and asking them to write two equations with two unknowns.

Or to delve into computation, make up a mixed number multiplication problem whose product is a simple fraction with numerator and denominator both smaller than 13. Or make up a whole number division problem with remainder 6.

Another is to do a problem over many days such as the four 4's problem: Use exactly four 4's and any signs or parentheses you need to make each of the numbers from 1 to 100. Use each of the 4's as a single digit number, not as

44. Each student can have a sheet from 1 to 100 to work on. They can trade answers with one another, and you can have a class chart where an expression is only filled in if all the students agree to it. The class would be most unusual if they got them all; if they get more than half the numbers, they should feel proud. You can remind them of square roots, and decimals, and introduce factorials, repeated decimals when and if they are ready.