

Arithmetic game using 4 digits

- use only the operations $+$, $-$, \times , \div
- use **all four** of your digits
- double digits are allowed, for example $27 + 1 - 8 = 20$
- there may be more than one way to use the given cards to reach a target
- some are easy, some are hard, a few are impossible!

Suggestions

- have younger students first try to get the numbers from 0 – 10, then try 11 – 25
- all of these sets of 4 can reach all numbers from 0 to 32, inclusive, so you could just aim at those
- to make it more interesting for high school students, allow all the mathematical operations they know, such as square roots, repeating decimals, and so on. They'll be able to reach almost all target numbers.

digits used	target numbers from 0 – 100 that are <u>not</u> possible (using only $+$, $-$, \times , \div)
1, 2, 7, 8	82, 83, 93, 94, 97, 100
1, 3, 7, 9	38, 52, 55, 58, 71, 79, 88, 97
2, 3, 4, 7	37, 58, 83, 87, 89, 94, 95
2, 3, 4, 9	34, 53, 64, 67, 73, 76, 79, 97
2, 3, 5, 8	42, 55, 61, 68, 82, 92, 94, 100
2, 3, 7, 8	54, 59, 71, 76, 80, 85, 94, 95
2, 3, 8, 9	44, 61, 69, 74, 82, 100
2, 4, 5, 7	39, 58, 60, 79, 82, 86, 87, 95
2, 4, 8, 9	67, 71, 75, 79, 85, 89, 93, 99
3, 4, 6, 8	33, 63, 71, 89, 94, 97, 99, 100
3, 4, 7, 9	43, 69, 83, 89, 92, 95, 99, 100
3, 6, 8, 9	55, 61, 67, 77, 82, 94, 97