Problem of the Week

Problem B

Hidden Fractions

Zoe is trying to find fractions that satisfy some of the following conditions:

(1) The denominator of the fraction is divisible by 3.

(2) All the digits in the fraction are even.

(3) The decimal value of the fraction is greater than 1 but less than 1.5.

(4) The denominator of the fraction is a multiple of 2.

(5) The decimal value of the fraction is between 0.25 and 0.6.

(6) The decimal value of the fraction does not include a 9.

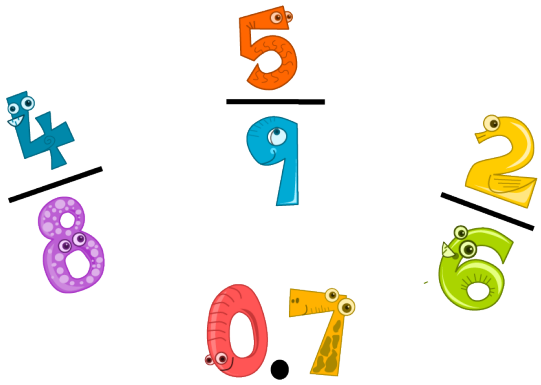
(7) The numerator of the fraction is even.

(8) The decimal value of the fraction is closer to 0.75 than to 0.55.

(a) Find a fraction that satisfies at least three of the conditions.

(b) Can you find a fraction that satisfies all of these conditions? If yes, give such a fraction. If no, explain why no such fraction exists.

(c) What is the least number of fractions Zoe needs to find such that together they meet all eight conditions?



Themes: Computational Thinking, Number Sense