



# MATH NEWS



Grade 4, Module 5, Topic H

## 4<sup>th</sup> Grade Math

Module 5: Fraction Equivalence, Ordering, and Operations

### Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 5 of Eureka Math (Engage New York) covers fraction equivalence, ordering, and operations.



### Focus Area Topic H: Explore a Fraction Pattern

#### Words to Know:

**Numerator** - top number in a fraction - tells how many equal parts are being describes by the fraction

**Denominator** -bottom number in a fraction - indicates the number of equal parts into which the whole is divided

**Unit fraction** - fractions with 1 as the numerator



#### Understanding Patterns

In mathematics, the elements of a pattern repeat in a predictable manner. Observing and analyzing these patterns is an essential skill students need to sharpen as they move through school. In topic H, students find patterns in the sums of like denominators.

### OBJECTIVE OF TOPIC H

► Find and use a pattern to calculate the sum of all fractional parts between 0 and 1. Share and critique peer strategies.

### Focus Area Topic H: Explore a Fraction Pattern



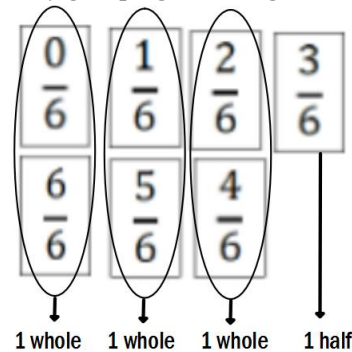
#### Finding Patterns in Fraction Sums

Students begin by lining up fraction cards,  $\frac{0}{6}$  through  $\frac{6}{6}$  or 1 whole, in order and then adding them together. In the following example, they add to find a total of 21 sixths.

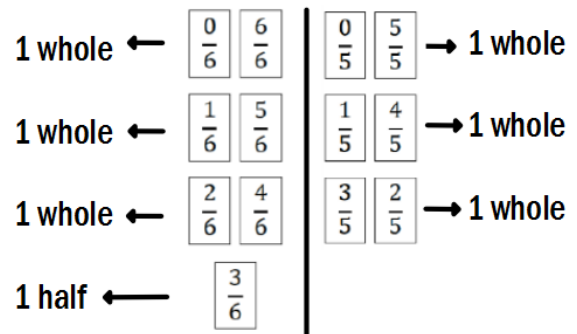
$$\frac{0}{6} + \frac{1}{6} + \frac{2}{6} + \frac{3}{6} + \frac{4}{6} + \frac{5}{6} + \frac{6}{6} = \frac{21}{6}$$

$$\frac{21}{6} = 3\frac{3}{6} = 3\frac{1}{2}$$

They explore further and notice they can create sums of 6 sixths or 1 whole by grouping cards together as shown below.



When students try this activity with an odd number denominator, they begin to see a pattern. Can you see the pattern?



When adding the sums of fractions with even denominators, the answer is not just a whole number. It includes a half. When there are odd denominators, the answer is a whole number.