# Number Riddles

## Unit 3: Funky Fractions

### Grade Level

Grade 5

### Overview

Students will solve number riddles as they relate to factors, multiples, prime and composite numbers.

### Key Standards

**M5N1. Students will further develop their understanding of whole numbers.**

- Classify the set of counting numbers into subsets with distinguishing characteristics (odd/even, prime/composite).
- Find multiples and factors.
- Analyze and use divisibility rules.

### Possible Materials

- Completed Sieve of Eratosthenes
- Math riddles student handout
- Copy of divisibility rules
- TI – 15 Calculators
- Flash Drives
- Pencil
- Paper
- Computer

### Task

1. Before completing the number riddles, students should complete The Sieve of Eratosthenes.
2. Divide students into small groups to complete riddles.
3. Assign no more than 2 riddles to each group. (This will allow the appropriate time needed to complete the riddles and for appropriate math conversations to occur.)
4. Students should test each riddle according to the rules of divisibility, factors, multiples, prime, and composite numbers.
5. After students have solved their assigned number of riddles, they will compose a paragraph explaining the process.
6. (optional) – Students may make a Microsoft PowerPoint presentation that effectively accompanies their riddles. It should also include the paragraph that explains the process.
### Sample Questions

1. How can I determine whether a number is odd or even?
2. How do I know if a number is prime or composite?
3. How do I determine which factors a number is divisible by?
4. How does knowing the divisibility rules help me solve problems?

### Sample Question Solutions

1. Sample Student Response – A number is even if it ends in 0, 2, 4, 6, or 8. A number is odd if it ends in 1, 3, 5, 7, or 9.
2. Sample Student Response – A number that is prime will have two factors…1 and itself.
3. A composite number has more than two factors.
4. Sample Student Response – One could use the LCD or LCM or GCF.
5. If you know the divisibility rules, then it is easier to divide. Also, it is easier to add and subtract fractions with unlike denominators.

### Assessment Ideas

Using the riddles in the aforementioned task, students will solve the riddles using their knowledge of factors, multiples, prime numbers, composite numbers, and divisibility rules. Students will create original number riddles using the same characteristics.