# Fractions, Simplest Form, and the Greatest Common Factor

Name _____

Date _____

One three-step strategy for simplifying fractions uses the **greatest common factor** (GCF) between the numerator and denominator.

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**Step 1:** Factor the numerator and denominator to find their greatest common factor.

**Example:**

$\dfrac{340}{800}$ ← numerator ← denominator

$\dfrac{340}{800}$

**2** x 170 (**2** x 85) **5** x 17; 2 x 2 x 5 x 17
* ( **2 x 2 x 5** x 17 )

**2** x 400 (**2** x 200) **2** x 100 (**2** x 50) **2** x 25 **5** x 5
* ( **2 x 2 x 5** x 2 x 2 x 2 x 5 )

★ Notice that 340 and 800 share only two 2's and one 5 as factors.

The Greatest Common Factor (GCF) is: **2 x 2 x 5 = 20**

**Step 2:** Divide each by their greatest common factor.

340 ÷ **20** = 17          800 ÷ **20** = 40

**Step 3:** Find the simplest form of the fraction.

$\dfrac{17}{40}$

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# Try It! Simplify each fraction by applying the three-step procedure using the greatest common factor.

**1.** $\dfrac{240 \div 80}{320 \div 80} = \dfrac{3}{4}$

240:
2 x 120 (2 x 60) 2 x 30 (2 x 15) 3 x 5
2 x 2 x 2 x 2 x 3 x 5

320:
2 x 160 (2 x 80) 2 x 40 (2 x 20) 2 x 10 (2 x 5)
2 x 2 x 2 x 2 x 2 x 2 x 5

GCF:
2 x 2 x 2 x 2 x 5 = 80

**2.** $\dfrac{366 \div 6}{480 \div 6} = \dfrac{61}{80}$

366:
2 x 183 (3 x 61)
2 x 3 x 61

480:
2 x 240 (2 x 120) 2 x 60 (2 x 30) 3 x 10 (2 x 5)
2 x 2 x 2 x 2 x 2 x 3 x 5

GCF:
2 x 3 = 6

**3.** $\dfrac{123 \div 3}{141 \div 3} = \dfrac{41}{47}$

123:
3 x 41
3

141:
3 x 47
3

GCF:
3

**4.** $\dfrac{228 \div 12}{312 \div 12} = \dfrac{19}{26}$

228:
2 x 114 (2 x 57) 3 x 19
2 x 2 x 3 x 19

312:
2 x 156 (2 x 78) 2 x 39 (3 x 13)
2 x 2 x 2 x 3 x 13

GCF:
2 x 2 x 3 = 12

**5.** $\dfrac{180 \div 6}{366 \div 6} = \dfrac{30}{61}$

180:
2 x 90 (2 x 45) 5 x 9 (3 x 3)
2 x 2 x 3 x 3 x 5

366:
2 x 183 (3 x 61)
2 x 3 x 61

GCF:
2 x 3 = 6

**6.** $\dfrac{255 \div 15}{345 \div 15} = \dfrac{17}{23}$

255:
3 x 85 (5 x 17)
3 x 5 x 17

345:
3 x 115 (5 x 23)
3 x 5 x 23

GCF:
3 x 5 = 15