

Grades 5-6

Math Wheel

What is GCF?

Greatest Common Factor

- * the largest factor that two numbers have in common
- * when the largest common factor is 1, the numbers are called coprime or relatively prime

Example

28 candy bars and 42 packs of gum were put in gift bags. The same number of candy bars and the same number of packs of gum were put in each bag. What is the greatest number of gift bags that can be made?

GCF

Identify the largest factor in both lists.

36: 1, 2, 3, 4, 6, 9, 12, 18, 36
54: 1, 2, 3, 6, 9, 18, 27, 54

OR

1) ÷ each # by any common factor
2) ÷ again, until #'s are prime
3) Multiply #'s on the side

$3 \times 2 \times 3 = 18$

$2 \times 3 \times 3 = 18$

$GCF = 18$

What is LCM?

Least Common Multiple

- * the smallest multiple that two numbers have in common
- * multiple - # you get when you multiply a # by an integer
- * multiplication table

Example

Maria is making bracelets with different colored beads. The red beads come in packs of 6 and the purple beads come in packs of 9. Maria needs the same number of red beads and purple beads. What is the smallest number of packs of red beads that she will need to buy? What is the smallest number of packs of purple beads that she will need to buy?

Red: 6, 12, 18, 24, 30, 36
Purple: 9, 18, 27, 36, 45, 54

LCM

1. Divide both #s by a common factor until #'s are prime
2. Divide until #'s are prime
3. Multiply #'s on side and bottom of ladder

Find the LCM of 9 and 6.

9: 9, 18, 27, 36, 45, 54
6: 6, 12, 18, 24, 30, 36

Multiples of each #

What is GCF?

Greatest Common Factor

Example

28 candy bars and 42 packs of gum were put in gift bags. The same number of candy bars and the same number of packs of gum were put in each bag. What is the greatest number of gift bags that can be made?

GCF

What is LCM?

Least Common Multiple

Example

Maria is making bracelets with different colored beads. The red beads come in packs of 6 and the purple beads come in packs of 9. Maria needs the same number of red beads and purple beads. What is the smallest number of packs of red beads that she will need to buy? What is the smallest number of packs of purple beads that she will need to buy?

LCM

Find the LCM of 9 and 6.

9: 9, 18, 27, 36, 45, 54
6: 6, 12, 18, 24, 30, 36

Multiples of each #

GREATEST COMMON FACTOR LEAST COMMON MULTIPLE



GCF and LCM

Math Wheels

Thanks for trying the GCF and LCM Math Wheels!

Using this resource: You can use these wheels to introduce or review GCF and LCM. Students can keep the wheels in their notebooks as a reference/study tool.

Both wheels show 2 methods to find GCF and LCM (listing and ladder method).

The sections of the GCF wheel include:

- 1) What is GCF?
- 2) List factors of each # (OR)
- 3) Ladder Method
- 4) Example

The sections of the LCM wheel include:

- 1) What is LCM?
- 2) List multiples of each # (OR)
- 3) Ladder Method
- 4) Example

- * Each section includes notes and/or sample problems for you to complete with the students.
- * On each wheel, there are 10 additional practice problems around the circle, for guided or individual practice.
- * Students can color the background, doodle arrows and headings 😊

** There's a PPT page included that is a blank wheel with background, so you can add text to make your own math wheels, if you'd like (for classroom use only - not commercial use).

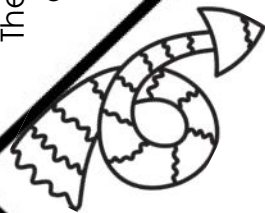
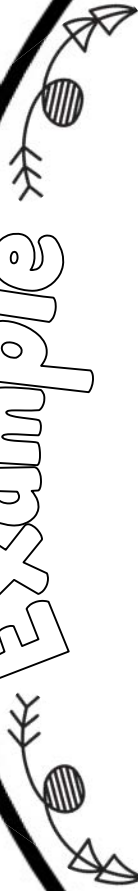
If you have any questions at all, please email me at ellie@middleschoolmathmoments.com.
I'd love for you to visit my new site, www.cognitivecardiowithmsmm.com.

What is GCF?

GCF

Example

28 candy bars and 42 packs of gum were put in gift bags. The same number of candy bars and the same number of packs of gum were put in each bag. What is the greatest number of gift bags that can be made?



Factors of each

Find the GCF of 36 and 54
Find the GCF of 36 and 54

36:
54:

36	54
2	2
3	3
6	6
9	9
12	12
18	18
36	54

Ladder Method

OR #

18, 24

48, 64

28, 34

54, 72

27, 63

51, 68

32, 80

28, 42

45, 60, 75

36, 48, 60

What is GCF?

Greatest Common Factor

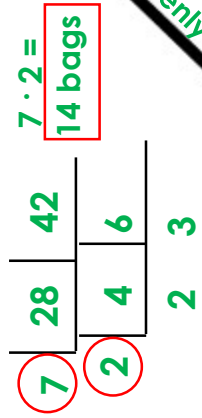
* the largest factor that numbers have in common

* if the only factor in common is 1, then the GCF = 1

* a factor divides into a # evenly

Example

28 candy bars and 42 packs of gum were put in gift bags. The same number of candy bars and the same number of packs of gum were put in each bag. What is the greatest number of gift bags that can be made?



GCF

ID the largest factor the lists have in common

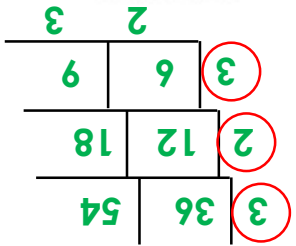
Find the GCF of 36 and 54

36: 1, 2, 3, 4, 6, 9, 12, 18, 36
 54: 1, 2, 3, 6, 9, 18, 27, 54

Factors of each

Ladder Method

1. Divide each number by any common factor



2. Divide until #s at bottom of ladder are prime

3. Multiply the #s on the side of the ladder

$3 \cdot 2 \cdot 3 = 18$

OR

18, 24
 28, 34
 27, 63
 32, 80
 45, 60, 75

48, 64
 54, 72
 51, 68
 25, 42
 36, 48, 60

What is GCF?

Greatest Common Factor

GCF

* the largest factor #s have in common

* when the only common factor is 1, the GCF=1

Example
 28 candy bars and 42 packs of gum were put in gift bags. The same number of candy bars and the same number of packs of gum were put in each bag. What is the greatest number of gift bags that can be made?

28 candy bars → 4 bags
 42 packs of gum → 3 bags
 → 14 gift bags

Factors of each

Find the GCF of 36 and 54

36: 1, 2, 3, 4, 6, 9, 12, 18, 36
 54: 1, 2, 3, 6, 9, 18, 27, 54

Identify the largest factor in both lists.

GCF = 18

3) Multiply #s on the side

3	36	54
2	18	27
3	6	9
2	3	3
3	1	1

$3 \times 2 \times 3 = 18$

Ladder Method

1) ÷ each # by any common factor
 2) ÷ again, until #s in ladder are prime



18, 24
 2 | 18 | 24
 3 | 6 | 8
 3 · 2 = 6

48, 64
 2 | 48 | 64
 2 | 24 | 32
 2 | 12 | 16
 2 | 6 | 8
 2 | 3 | 4
 16

28, 34
 2 | 28 | 34
 14 | 17
 2

54, 72
 2 | 54 | 72
 3 | 27 | 36
 3 | 9 | 12
 3 | 3 | 4
 18

27, 63
 3 | 27 | 63
 9 | 21
 3 | 7
 3 · 3 = 9

51, 68
 3 | 51 | 68
 17 | 23
 17

32, 80
 2 | 32 | 80
 2 | 16 | 40
 2 | 8 | 20
 2 | 4 | 10
 2 | 2 | 5
 16

25, 42
 5 | 25 | 42
 1

45, 60, 75
 3 | 45 | 60 | 75
 5 | 15 | 20 | 25
 3 | 5 | 4 | 5
 15

36, 48, 60
 2 | 36 | 48 | 60
 2 | 18 | 24 | 30
 3 | 6 | 8 | 10
 3 | 2 | 4 | 5
 12

4, 8

5, 13

What is LCM?

Example

Marla is making bracelets with different colored beads. The red beads come in packs of 8 and the purple beads come in packs of 3. Marla needs the **same number** of red beads that she will need to buy? What is the smallest number of packs of purple beads that she will need to buy?

6, 10

15, 60

9, 33

8, 12

5, 35

6, 16

7, 8, 28

6, 8, 12

LCM

Multiples of each

Find the LCM of 9 and 6.

9:

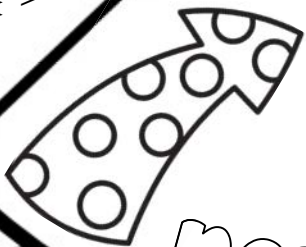
6:

1-3-5-7-9



OR

Ladder Method



9	6
---	---

What is LCM?

Least Common Multiple

- * the smallest multiple that numbers have in common
- * a multiple is a # you get when you multiply a # by an integer (multiplication tables)

LCM

Example

Marla is making bracelets with different colored beads. The red beads come in packs of 8 and the purple beads come in packs of 3. Marla needs the **same number** of each color bead. What is the smallest number of packs of red beads that she will need to buy? What is the smallest number of packs of purple beads that she will need to buy?

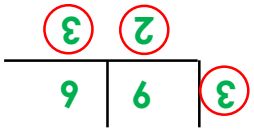
Red: 8, 16, **24**, 32
 Purple: 3, 6, 9, 12, 15, 18, 21, **24**

24 of each color =
 3 packs red
 8 packs purple

$1 \cdot 3 \cdot 8 = 24$

Ladder Method

1. Divide each number by any common factor
2. Divide until #s at bottom of ladder are prime
3. Multiply the #s on the side and bottom of the ladder



$3 \cdot 2 \cdot 3 = 18$

* tip - list just the bigger # multiples of the ladder

OR

Tip List

- 9: 9, **18**, 27, 36, 45, 54
 6: 6, 12, **18**, 24, 30, 36

Multiples of each

Find the LCM of 9 and 6.

15, 60

9, 33

5, 35

7, 8, 28

4, 8

5, 13

6, 10

8, 12

6, 16

6, 8, 12

What is LCM?

Least Common Multiple

*the smallest multiple that #s have in common

*multiple - # you get when you multiply a # by an integer
*multiplication table

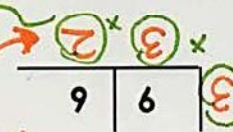
LCM

Multiples of each #
Find the LCM of 9 and 6.
Identify the smallest multiple the lists have in common.

9: 9, 18, 27, 36, 45, 54
6: 6, 12, 18, 24, 30, 36

*tip: list just the mult. of bigger #

Ladder Method
1. Divide both #s by a common factor
2. Divide until #s in ladder are prime
3. Multiply all #s on side and bottom of ladder



Example

Maria is making bracelets with different colored beads. The red beads come in packs of 8 and the purple beads come in packs of 3. Maria needs the same number of packs of red beads that she will need to buy? What is the smallest number of packs of purple beads that she will need to buy?

Red: 8, 16, 24, 32 **3 packs Red**

Purple: 3, 6, 9, 12, 15, 18, 21, 24

8 packs purple

24 beads

3. Multiply all #s on side and bottom of ladder

4, 8
 $\begin{array}{r} 4 \overline{) 48} \\ \underline{16} \\ 32 \\ \underline{32} \\ 0 \end{array}$
 $4 \cdot 2 = 8$

5, 13
 $\begin{array}{r} 1 \overline{) 65} \\ \underline{5} \\ 10 \\ \underline{13} \\ 65 \end{array}$
 $1 \cdot 5 \cdot 13 = 65$

6, 10
 $\begin{array}{r} 2 \overline{) 60} \\ \underline{30} \\ 30 \end{array}$
 $2 \cdot 3 \cdot 5 = 30$

15, 60
 $\begin{array}{r} 5 \overline{) 60} \\ \underline{30} \\ 30 \end{array}$
 $\begin{array}{r} 3 \overline{) 30} \\ \underline{15} \\ 15 \end{array}$
 $3 \cdot 3 \cdot 4 = 36$
9, 33
 $\begin{array}{r} 3 \overline{) 33} \\ \underline{33} \\ 0 \end{array}$
 $3 \cdot 3 \cdot 11 = 99$

8, 12
 $\begin{array}{r} 4 \overline{) 24} \\ \underline{12} \\ 12 \end{array}$
 $4 \cdot 2 \cdot 3 = 24$

5, 35
 $\begin{array}{r} 5 \overline{) 35} \\ \underline{17} \\ 35 \end{array}$
 $5 \cdot 7 = 35$

6, 16
 $\begin{array}{r} 2 \overline{) 48} \\ \underline{38} \\ 10 \end{array}$
 $2 \cdot 3 \cdot 8 = 48$

7, 8, 28
 $28 : 28 \overline{) 28}$

6, 8, 12
 $12 : 12 \overline{) 24}$
 $24 : 36$

The following pages are the inside and outside of a fold it up for using the ladder method to find GCF and LCM and for factoring expressions (and directions to assemble). It might be useful if students need more specific steps/reinforcement for the ladder method.

Directions

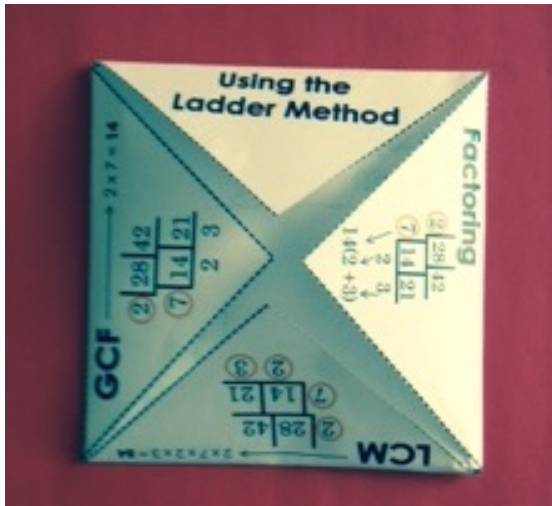
**If you want to use the printed text for the inside of the Fold It Up, copy the pages back to back, - the text should be on the opposite side of the page from the labeled triangles...just be sure that the sections line up with the correct triangle.

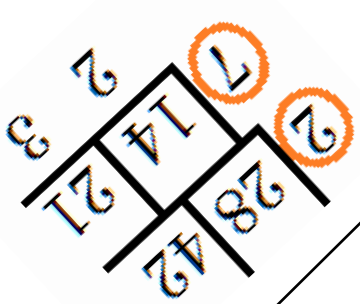
For students:

Step one: Cut out the outer square, along the dotted lines.

Step two: Fold each triangle into the center, so that the labels on the triangles are facing up, as shown below.

Step three: Write the steps into the Fold It Up if the pre-printed text isn't used.

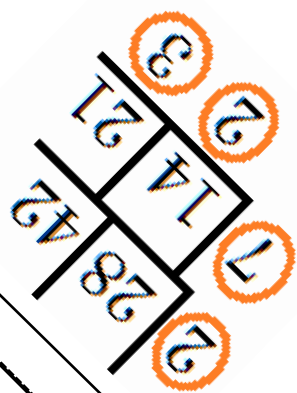




GCF

$$2 \times 7 = 14$$

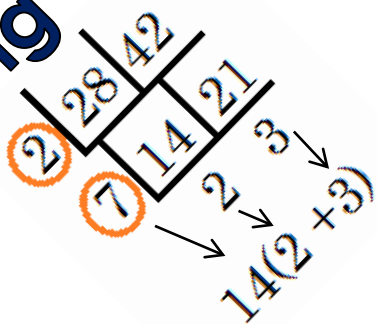
$$2 \times 7 \times 2 \times 3 = 84$$



LCM

Using the
Ladder Method

Factoring



Follow Steps 1 and 2 of the GCF directions

Step 3: Multiply the factors to the left of the ladder AND the factors below the ladder.
This product is the **LCM**.

Step 1: Write the terms inside the ladder.
Step 2: Choose a common factor to divide the terms by.
Write this number to the left of the ladder.
Divide and write the quotients beneath the ladder.
Repeat until there are no more common factors.
Step 3: Multiply the factors to the left of the ladder.
This product is the **GCF**.

Follow Steps 1 and 2 of the GCF directions
Step 3: Multiply the numbers on the left side of the ladder, and write the product (GCF) on the outside of the ladder inside the parentheses;
Step 4: Write the numbers at the bottom of the ladder, use the operation sign from the original expression.

Thank you!

Thank you so much for downloading this teaching tool! I hope you will find the materials to be effective in your classroom and that they will benefit both you and your students. My goal is to provide you with teacher and student-friendly materials that will help you to help your students be successful in math!

If you feel that I have not met my goal, please email me at middleschoolmathmoments@gmail.com.

If you feel that I have met my goal, I would like to know that as well. You can add your feedback to this product's reviews, as well as **earn credit** toward future TPT purchases. Just go to "My Purchases" in your TPT account.

Terms of Use

Copyright © 2017, [Middle School Math Moments](#). All rights reserved. Permission is granted to copy pages specifically designed for student or teacher use by the original purchaser or licensee. The reproduction of any other part of this product is strictly prohibited. Copying any part of this product and/or placing it on the Internet in any form (even a personal/classroom website) is strictly forbidden. Doing so is a violation of the Digital Millennium Copyright Act (DMCA).

You MAY:	You may NOT:
<ul style="list-style-type: none">• Use this item for your own personal use or for use in your classroom.	<ul style="list-style-type: none">•
<ul style="list-style-type: none">• Copy this item for use in your classroom by your students.	<ul style="list-style-type: none">•
<ul style="list-style-type: none">• Purchase unlimited licenses for others to use this item at 50% off.	<ul style="list-style-type: none">•
<ul style="list-style-type: none">• Review this item for the purpose of recommending it to others, provided you include a link to this product in my store.	<ul style="list-style-type: none">• Copy or modify any part of this item to offer others for free or for sale.

Stay in Touch

[Blog](#)

[Pinterest](#)

[Facebook](#)

[Instagram](#)

Credit: Graphics and fonts used in this product are credited to:



Other materials you might like:

Click for 6th Grade Units

Grade 6

Ratios, Rates, Proportions
Notes, Praotios, Exit Tickets, Assessment
Common Core Aligned

Grade 6

NUMBER SYSTEM - WHOLE NUMBERS & DECIMALS
Notes, Practice, Exit Tickets, Assessment
Common Core Aligned

Grade 6

EXPRESSIONS & EQUATIONS
Notes, Practice, Exit Tickets, Assessment
Common Core Aligned

Grade 6

NUMBER SYSTEM - FRACTION DIVISION
Notes, Practice, Exit Tickets, Assessment
Common Core Aligned

GRADE 6

6TH GRADE MATH CURRICULUM BUNDLE
Common Core Aligned

Click for all Footloose Task Cards

Footloose!
(and extra praotios page)
Prime Factorization

Footloose!
Integer Operations

Footloose!
Absolute Value

Footloose!
Percent of a Number

Footloose!
Writing and Graphing Inequalities

Footloose!
Mean, Median, Mode & Range

Click to see all Color by Numbers

Grades 5-7

COLOR BY NUMBER BUNDLE #1
Math Concepts - 14 activities

Grades 5-7

COLOR BY NUMBER BUNDLE #2
Math Concepts - 18 activities

Grades 5-8

COLOR BY NUMBER BUNDLE #3
Math Concepts - 17 activities

Grades 5-7

COLOR BY NUMBER COMPLETE SET
Math Concepts - 54 activities

MATH TRUTH OR DARE
A Review Game
Combining Like Terms

MATH TRUTH OR DARE
A Review Game
Algebraic Expressions

Grade 6

RATIOS & PROPORTIONS
Color by Number

Grade 6

DECIMAL DIVISION
Color by Number

Grade 6

DECIMAL MULTIPLICATION
Color by Number

Grade 6

EXPONENTS
Color by Number

Grade 6

ALGEBRAIC EQUATIONS
Color by Number

Grade 5-

MULTI-DIGIT MULTIPLICATION
Color by Number

Grade 6

Daily Math Warm-Ups
180 Days!
Common Core Aligned

TRUTH OR DARE
A Review Game
Google Classroom Version
Absolute Value

TRUTH OR DARE
A Review Game
Google Classroom Version
Algebraic Expressions

TRUTH OR DARE
A Review Game
Google Classroom Version
Combining Like Terms

TRUTH OR DARE
A Game for Google Classroom
Properties of Addition and Multiplication

TRUTH OR DARE
A Review Game
Google Classroom Version
Exponents