



# Factor Race Game

Race Against the Clock to  
Find Factors of a Number!



Common Core Aligned  
Math Standard 4.OA.4

Laura Candler  
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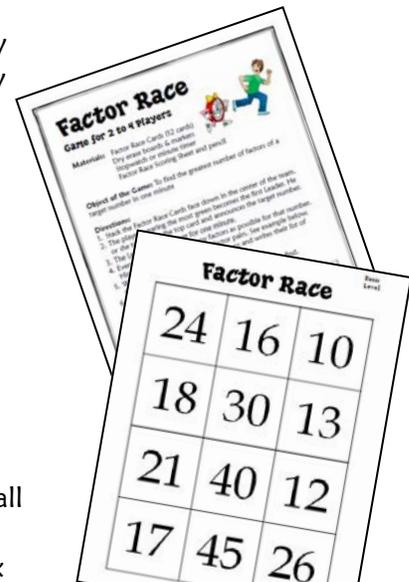
# Factor Race Math Game



Created by Laura Candler

Many math tasks require students to be able to find factors quickly and proficiently. For example, students need to be able to identify factors when simplifying fractions or dividing numbers. Factor Race is a cooperative learning game for 2 to 4 students that provides lots of practice finding factors in a short period of time. There are two levels of play, and each level includes 12 cards that serve as target numbers for each round. Students flip over a card and race to see how many factors they can find in one minute. Students take turns being the leader and keeping score. When you first introduce this game to your students, play a few rounds as a class until everyone understands the rules.

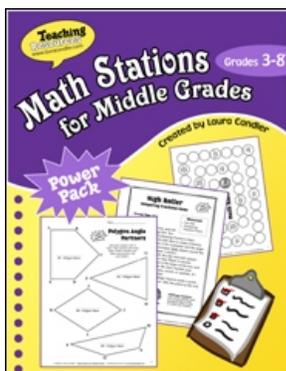
Prior to introducing the game, introduce the meaning of the word, “factor,” and demonstrate at least one strategy for finding all the factors of a number. One method I like is to list all the factor pairs for a number. Using 28 as an example, write  $1 \times 28$ , then  $2 \times 14$ , skip the number 3 since it doesn't have a partner, and then write  $4 \times 7$ . Skip the numbers 5, and 6, and stop when you get to 7 because it's already listed. The final step is to write all the factors in order in one row which is easy to do if you have listed the factor pairs in order vertically. I like to let students use calculators at first, but they will quickly see that calculators only slow them down. However, a calculator can be helpful when a student includes a number on his or her list that other team members challenge. The leader can use a calculator to easily determine whether or not the number is actually a factor of the target number.



**Factors of 28**

$1 \times 28$   
 $2 \times 14$   
 $4 \times 7$

1, 2, 4, 7, 14, 28



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# Factor Race

## Game for 2 to 4 Players

**Materials:** Factor Race Cards (12 cards)  
Dry erase boards & markers  
Stopwatch or minute timer  
Factor Race Scoring Sheet and pencil



**Object of the Game:** To find the greatest number of factors of a target number in one minute

### Directions:

1. Stack the Factor Race Cards face down in the center of the team.
2. The player wearing the most green becomes the first Leader. He or she turns over the top card and announces the target number.
3. The Leader sets the timer for one minute.
4. Everyone tries to find as many factors as possible for that number.  
Hint: Make an organized list of factor pairs. See example below.
5. When one minute is up, everyone stops and writes their list of factors in order from least to greatest.
6. Compare answers. Score points as follow:
  - \* Earn one point for every correct factor that you find.
  - \* Lose your turn and score 0 points if you list a number that is not a factor of the target.
7. The Leader records everyone's name and score for Round 1 on the Scoring Sheet.
8. Repeat steps 1 - 7 for each round.  
The role of Leader rotates to the left for each round. Play until all 12 cards have been used or time runs out. Add points to find out who wins the game.

### Factors of 28

$$1 \times 28$$

$$2 \times 14$$

$$4 \times 7$$

1, 2, 4, 7, 14, 28

Score = 6 points

# Factor Race

24	16	10
18	30	13
21	40	12
17	45	26

# Factor Race

50	75	60
27	42	65
72	99	90
80	78	37

# Factor Race Scoring Sheet



<b>Names →</b>				
Round 1				
Round 2				
Round 3				
Round 4				
Round 5				
Round 6				
Round 7				
Round 8				
Round 9				
Round 10				
Round 11				
Round 12				
<b>Totals →</b>				

# Factor Race Scoring Sheet



<b>Names →</b>				
Round 1				
Round 2				
Round 3				
Round 4				
Round 5				
Round 6				
Round 7				
Round 8				
Round 9				
Round 10				
Round 11				
Round 12				
<b>Totals →</b>				



## Common Core Alignment

Factor Race Game is aligned with the 4th Grade Common Core Operations and Algebraic Thinking standard below:

4.OA.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Even though the activity is not specifically aligned with standards for grades 5 and 6, students need to be able to find factors and multiples in order to work with fractions.



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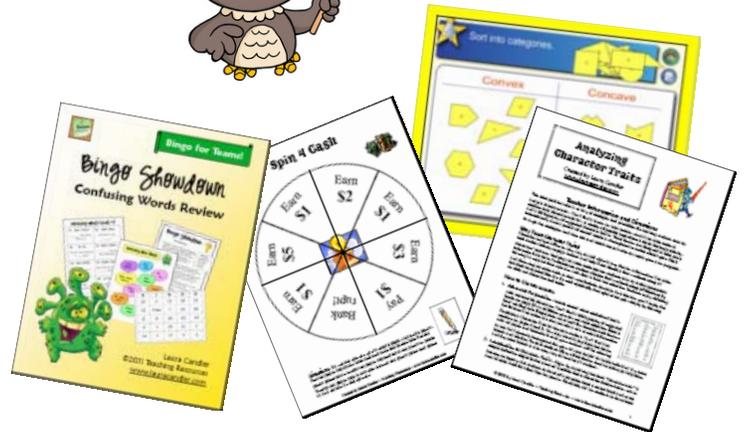
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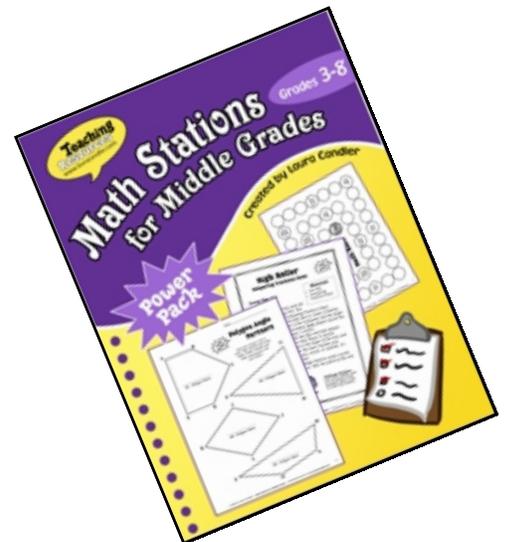
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