# Number Connections

Sort numbers, prove two choices, and make your own.

**4.NOS.C.8.c** "Distinguish between factors and multiples and explain how they relate to a given number."

NAME _____ DATE _____

**FACTOR**

A factor divides a given number evenly. You can multiply it by a whole number to get the given number.

5 is a factor of 20 because $5 \times 4 = 20$.

**MULTIPLE**

A multiple is the result of multiplying a given number by a whole number.

80 is a multiple of 20 because $20 \times 4 = 80$.

## 1 SORT

8 items

For each number, circle FACTOR or MULTIPLE of 18; in Part 2, choose one number from each group and explain how you knew.

| | | |
|---|---|---|
| **1.** | 36 | FACTOR MULTIPLE |
| **2.** | 54 | FACTOR MULTIPLE |
| **3.** | 3 | FACTOR MULTIPLE |
| **4.** | 72 | FACTOR MULTIPLE |
| **5.** | 6 | FACTOR MULTIPLE |
| **6.** | 90 | FACTOR MULTIPLE |
| **7.** | 108 | FACTOR MULTIPLE |
| **8.** | 9 | FACTOR MULTIPLE |

## 2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

**ITEM #** _____ **HOW I KNEW** _____

**ITEM #** _____ **HOW I KNEW** _____

## 3 MAKE YOUR OWN

One of each

Write one factor of 18 and one multiple of 18 that are not in Part 1.

**FACTOR** _____

**MULTIPLE** _____

**CHALLENGE**

Find a number that is both a factor and a multiple of 18, and explain why.

**ANSWER KEY** # Number Connections

**GRADE 4 · 4.NOS.C.8.c**

## PART 1 · SORT

| # | ITEM | CATEGORY | WHY |
|---|---|---|---|
| 1 | 36 | **MULTIPLE** | 18 × 2 = 36. |
| 2 | 54 | **MULTIPLE** | 18 × 3 = 54. |
| 3 | 3 | **FACTOR** | 3 × 6 = 18. |
| 4 | 72 | **MULTIPLE** | 18 × 4 = 72. |
| 5 | 6 | **FACTOR** | 6 × 3 = 18. |
| 6 | 90 | **MULTIPLE** | 18 × 5 = 90. |
| 7 | 108 | **MULTIPLE** | 18 × 6 = 108. |
| 8 | 9 | **FACTOR** | 9 × 2 = 18. |

## PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

## PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **FACTOR**: 2 is a factor of 18.
- **MULTIPLE**: 126 is a multiple of 18.

**Challenge:** 18 is both. It divides 18 evenly, and 18 × 1 = 18.

For Part 2, accept explanations that show a factor multiplying to make 18 and a multiple made by multiplying 18. The challenge shows that the two categories can overlap, even though none of the sort items do.