Names (pair) _____ Date _____

# Equal Groups: What Divisible Means

Example

There are 24 students in a class. Can they be split into teams of 6?



$24 \div 6 = 4$, remainder 0: **yes**, because $6 \times 4 = 24$.

And into teams of 5?



$24 \div 5 = 4$, remainder 4: **no**, four students are left without a team.

**Remember**

A number $a$ is **divisible** by $b$ if the remainder of $a \div b$ is 0, that is, if $a = b \times c$ for some whole number $c$. Then we say: $a$ is **divisible** by $b$, $b$ is a **factor** of $a$, and $a$ is a **multiple** of $b$.

**1** IN PAIRS How many equal teams can 24 students make? Complete the table.

| students per team | number of teams | remainder | divisible? |
|---|---|---|---|
| 2 | | | yes / no |
| 3 | | | yes / no |
| 4 | | | yes / no |
| 5 | | | yes / no |
| 7 | | | yes / no |
| 8 | | | yes / no |
| 9 | | | yes / no |
| 12 | | | yes / no |

Which team sizes leave no remainder? They are the factors of 24:

_____

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**2** ON YOUR OWN Complete. We check divisibility with division and multiplication.

$35 \div 7 =$ ☐ because $7 \times$ ☐ $= 35$

$42 \div 6 =$ ☐ because $6 \times$ ☐ $= 42$

$54 \div 9 =$ ☐ because $9 \times$ ☐ $= 54$

$72 \div 8 =$ ☐ because $8 \times$ ☐ $= 72$

**3** ON YOUR OWN Write the same fact in three ways.

| ... is divisible by ... | ... is a factor of ... | ... is a multiple of ... |
|---|---|---|
| 40 is divisible by 8 | | |
| | 9 is a factor of 63 | |
| | | 56 is a multiple of 7 |

**4** IN PAIRS True or false? Correct the false statements.

**a) 18 is divisible by 4.** **true** / **false**

**b) 6 is a factor of 30.** **true** / **false**

**c) 9 is divisible by 18.** **true** / **false**

**d) Every whole number is divisible by 1 and by itself.** **true** / **false**

**5** IN PAIRS **Find the mistake.** Max says: "7 is a factor of 21, so 21 is a factor of 7." What is wrong?

**The Set of Objects app · otooly.com/set-of-objects**

Share 24 objects into equal parts: 2, 3, 4, 5 ... parts. When is there no remainder?

★ ON YOUR OWN **Exit card.** Is 42 divisible by 6? Write a multiplication fact: ☐