Name & Surname: _____ Class: _____ Date: _____

For Every Pair

Describe ratios in order with for-every language

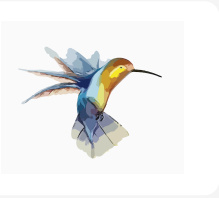
About 40 minutes Level ★★★☆☆



What Is a Ratio?

A **ratio** shows how two **quantities** go together in **order**.

- Spot two amounts you can **count**, like wings and beaks.
- Say it with **for every**: for every 2 wings there is 1 beak.
- Write first to **second**: 2 to 1 or 2:1.
- Flip the words and flip the **numbers**: 1 to 2 or 1:2.



Task A

/6

Explain the difference in each pair in one sentence.

2:3 made into 4:5 by adding 2 vs **2:3 made into 4:6 by doubling**

The difference is...

ratio of wings to beaks is 2:1 vs **ratio of beaks to wings is 1:2**

The difference is...

part-to-part 3 apples to 2 oranges vs **part-to-whole 3 apples to 5 fruits total**

The difference is...

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Say and Write

Practice writing ratios in the right order.

Key words

ratio: how two amounts go together in order

order: which amount is named first and which is second

for every: in each group of one thing you get a fixed number of the other

quantity: something you can count or measure

Task B

/12

Write each ratio in order with for-every language.

WARM UP

1. A model has 2 **wings** and 1 **beak**. Write the **ratio** of wings to beaks with a colon.

Answer: _____

2. Write the **ratio** of beaks to wings for 1 **beak** and 2 **wings**.

Answer: _____

3. A tray has 3 **apples** and 2 **oranges**. Write the **ratio** of apples to oranges.

Answer: _____

4. Write the **ratio** of oranges to apples for that **tray**.

Answer: _____

PRACTICE

5. For every 2 **pencils** there are 3 **pens**. There are 4 pencils. How many pens are there?

Answer: _____

6. For every 3 **apples** there are 2 **oranges**. There are 9 apples. How many oranges are there?

Answer: _____

7. Complete the sentence: 6 **wings** and 3 **beaks** means for every __ wings there is __ beak.

Answer: _____

8. A student says the **ratio** of A to B is B:A. Explain how you **know** if this is correct.

Answer: _____

PROBLEM SOLVING

9. A bird house keeps 2 **wings** for every 1 **beak**. How many beaks go with 10 wings?

Answer: _____

10. A recipe uses 3 **cups** flour to 4 **cups** sugar. How much sugar goes with 9 cups flour?

Answer: _____

11. A jar has 2 **red** counters and 3 **blue** counters, 5 total. What is the **ratio** of red counters to total counters?

Answer: _____

12. Explain how you **know** order matters. Give a classroom **example** where flipping the ratio gives the wrong message.

Answer: _____

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Find the Mistake

Spot the wrong step and fix each ratio.

Task C

/6

Find the wrong step and explain the mistake.



Student A

A picture shows 2 red counters and 3 blue counters. How can you double the ratio and keep it the same?

1. Start with 2 red and 3 blue.
2. Add 2 to each side to get 4 to 5.
3. Check the for-every link still holds.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

Imagine a tray with 3 apples and 2 oranges. Write the ratio of apples to oranges.

1. Count apples = 3 and oranges = 2.
2. Write the ratio as 2:3.
3. Read it as apples to oranges.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student C

A jar has 8 peanuts and 4 other nuts, 12 nuts total. What is the ratio of peanuts to other nuts?

1. Count peanuts = 8 and other nuts = 4.
2. Count the total = 12.
3. Write the ratio as 8:12.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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More Ratio Practice

Solve more ratio problems with drawings and words.

Task D

/12

Solve each ratio problem and check the order.

WARM UP

1 There are 4 **brown-eyed** students and 2 **blue-eyed** students. Write the **ratio** of brown-eyed to blue-eyed students.

Answer: _____

2 Write the **ratio** of blue-eyed to brown-eyed **students** for the same group.

Answer: _____

3 A shopkeeper displays 5 **notebooks** and 10 **pencils**. Write the **ratio** of notebooks to pencils.

Answer: _____

4 Complete: For every 1 **notebook** there are __ pencils.

Answer: _____

PRACTICE

5 For every 4 **cups** water there is 1 **cup** concentrate. How much concentrate for 12 cups water?

Answer: _____

6 A class keeps 6 **books** for every 2 **desks**. How many books for 6 desks?

Answer: _____

7 The **ratio** of wings to beaks is 2:1. There are 8 wings. How many **beaks** are there?

Answer: _____

8 Explain how you **know** that 3:2 and 6:4 show the same **ratio**.

Answer: _____

PROBLEM SOLVING

9 A student counts 15 **total** students with 3 **blue-eyed** students. What is the **ratio** of blue-eyed students to total students?

Answer: _____

10 A drink mix uses 2 **cups** sugar to 2 **cups** water. How much water goes with 5 cups sugar?

Answer: _____

11 Three friends share stickers so for every 2 **star** stickers there is 1 **heart** sticker. There are 10 star stickers. How many heart stickers are there?

Answer: _____

12 For 8 **peanuts** and 4 other nuts, 12 nuts total, explain how you **know** whether 8:4 compares parts or a part to the **total**.

Answer: _____

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Order the Steps

Put the method in order, then solve with bar models.

Task E

Example done for you

/4

Number these steps to describe a ratio correctly.

- [ ] Read aloud to check the **order**.
- [1] Count the first **quantity**.
- [ ] Write first to **second** with to or colon.
- [ ] Say for every __ there is __.
- [ ] Count the second **quantity**.

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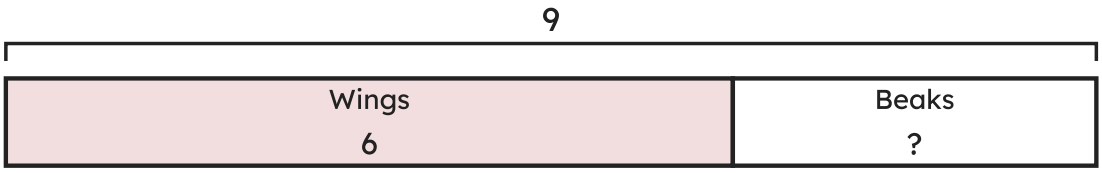
For Every Pair

Task F

/6

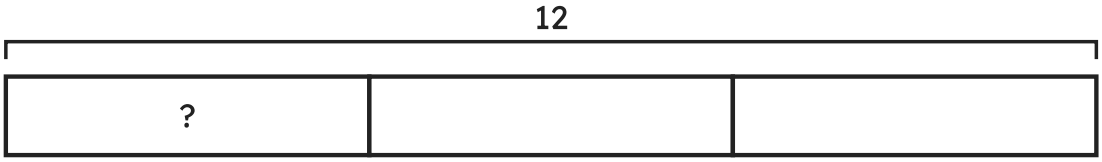
Use each bar to find the missing number.

1. A **display** has 6 wing cutouts and some beak cutouts. Together there are 9 cutouts. How many beak cutouts are there?



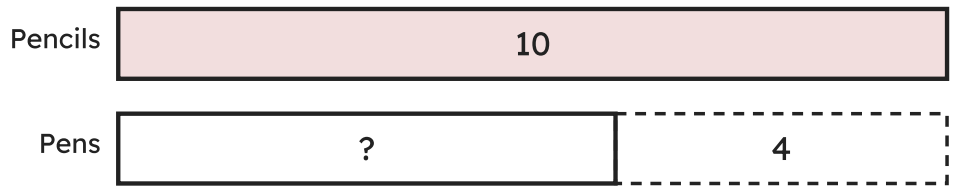
Answer: _____ **cutouts**

2. 12 **apple** slices are shared equally between 3 trays to keep portions even. How many slices are in each tray?



Answer: _____ **slices**

3. A **shopkeeper** puts out 10 pencils and 4 fewer pens. How many pens are there?



Answer: _____ **pens**

How did I do?

Circle a face for each line.

I can write a ratio in the right order.	☹	😐	☺
I can use for-every language to describe a ratio.	☹	😐	☺
I can tell part-to-part from part-to-whole.	☹	😐	☺

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Answer sheet: For Every Pair

Task A

1. Adding keeps the difference but breaks the for-every link; doubling keeps for every 2 there are 3, so only 4:6 matches.
2. Order matters: the first-named quantity comes first, so flipping the words flips the numbers.
3. Part-to-part compares two parts; part-to-whole compares one part to the total.

Task B

1. 2:1
2. 1:2
3. 3:2
4. 2:3
5. 6 pens
6. 6 oranges
7. For every 2 wings there is 1 beak.
8. False. Order matters, so A to B must be written A:B with A first.
9. 5 beaks
10. 12 cups
11. 2:5
12. Order matters because first-named comes first; for example pens to books 2:5 means something different from books to pens 5:2.

Task C

1. Step 2 is wrong: Adding the same number breaks the multiplicative link. You must multiply both sides by the same number to keep for every 2 there are 3. Correct answer: 4:6
2. Step 2 is wrong: The order is flipped. When you write the ratio you place the first term first, so apples to oranges is 3:2. Correct answer: 3:2
3. Step 3 is wrong: This mixes part-to-whole with part-to-part. Peanuts to other nuts compares two parts, so it is 8:4, not 8 to the total. Correct answer: 8:4

Task D

1. 4:2
2. 2:4
3. 5:10
4. 2 pencils
5. 3 cups
6. 18 books
7. 4 beaks
8. Both say for every 3 there are 2; doubling both sides keeps the multiplicative link.
9. 3:15
10. 5 cups
11. 5 heart stickers
12. It compares two parts unless the second number is the total; here 8 and 4 are both parts, not 12 total.

Task E

1. Count the first quantity. 2. Count the second quantity. 3. Say for every __ there is __. 4. Write first to second with to or colon. 5. Read aloud to check the order.

Task F

1. 3 cutouts
2. 4 slices
3. 6 pens

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