UNIT 9 · STANDARD 6.NS.6B

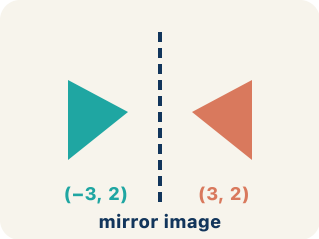
Reflect Points Across Axes

Lesson 9-7

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

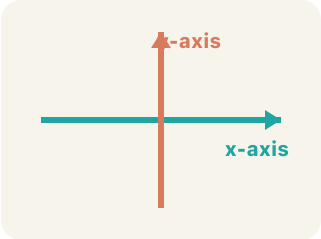
Picture first, then the word, then a plain-language meaning. Say each word out loud.



(3, 2) reflected over the y-axis becomes (-3, 2) — x changes sign, y stays

Reflection

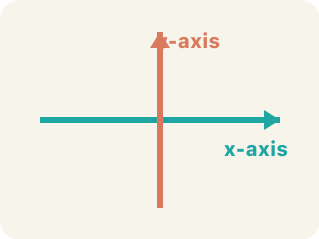
Write the definition:



(4, 3) → (4, -3): the y flips from +3 to -3, like folding the paper along the horizontal line

x-axis

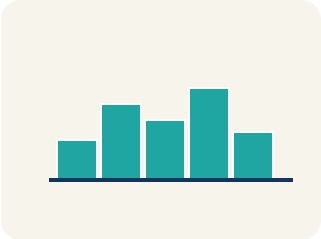
Write the definition:



(4, 3) → (-4, 3): the x flips from +4 to -4, like folding the paper along the vertical line

y-axis

Write the definition:



A butterfly's wings are symmetric — fold it down the middle and both sides match

Symmetry

Write the definition:

...-2, -1, 0, 1, 2...

..., -3, -2, -1, 0, 1, 2, 3, ...

Integer

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can reflect points across the x-axis and y-axis on the coordinate plane.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Reflection | x-axis | y-axis | Symmetry | Integer

☝️ *Tap any word to see what it means and a picture.*

1 A flip of a point or shape over an axis to make a mirror image is a _____.

2 The horizontal number line on the coordinate plane is the _____.

3 The vertical number line on the coordinate plane is the _____.

4 When two halves are mirror images of each other, the figure has _____.

5 A whole number or its opposite, with no fraction part, is an _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: What is the reflection of (4, -3) over the x-axis?

A. (-4, -3)

B. (4, 3)

C. (-4, 3)

D. (3, -4)

Step 1 Reflecting over the x-axis changes the sign of the y-coordinate.

Step 2 The x stays the same (4), and the y changes from -3 to 3.

Step 3 The answer is (4, 3).

✅ **Answer:** B. (4, 3)

🧩 Try — put the steps in order

Drag the cards (or use the ▲▼ buttons) to put the solution steps in the right order, then press **Check**.

The x stays the same (4), and the y changes from -3 to 3.

The answer is (4, 3).

Reflecting over the x-axis changes the sign of the y-coordinate.

🤝 **We do — together**

Solve this one with your class using the same steps.

Problem: What is the reflection of (-2, 6) over the y-axis?

A. (2, 6)

B. (-2, -6)

C. (2, -6)

D. (6, -2)

Step 1 _____

Step 2 _____

Step 3 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: Which point is on the y-axis?

A. (0, 5)

B. (5, 0)

C. (3, 3)

D. (-2, 4)

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. A buried chest is marked at (-5, 3). Vega folds the map along the y-axis to find its mirror twin. Where is the twin?

A. (5, 3)

B. (-5, -3)

C. (5, -3)

D. (3, -5)

Show your work:

2. Vega reflects a palm-tree marker at (8, -6) across the x-axis. Which coordinate changes its sign?

A. The y-coordinate

B. The x-coordinate

C. Both coordinates

D. Neither coordinate

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A triangle has vertices at A(1, 2), B(4, 2), and C(4, 6). If you reflect the entire triangle over the y-axis, what are the new vertices? What do you notice about the size and shape of the reflected triangle compared to the original?

Sentence starter: The reflected vertices are A'(____), B'(____), C'(____). I found each by ____. The reflected triangle is ____ compared to the original because reflections ____.

Show your work:

Reflect — Exit Ticket

What is the reflection of (-5, 2) over the y-axis?

A. (-5, -2)

B. (5, -2)

C. (5, 2)

D. (2, -5)

Your answer: