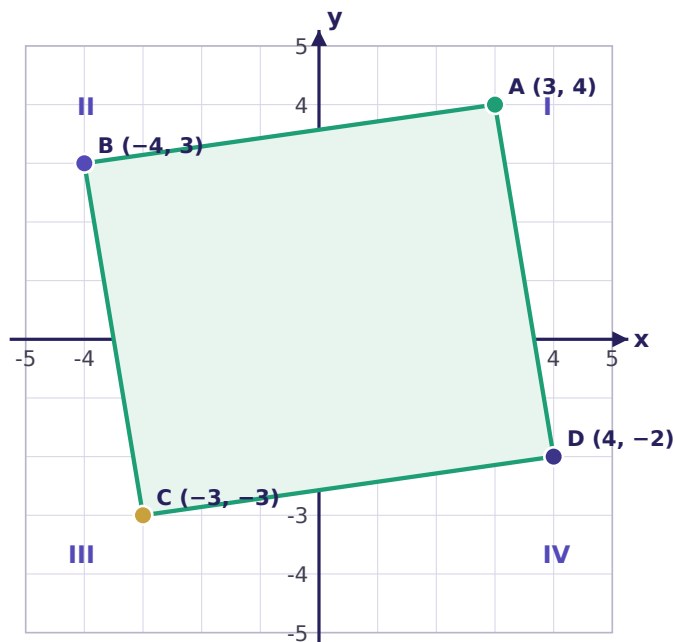




COORDINATE PLANE MASTERY BUNDLE

4 Quadrants, Reflections & Distance

Grade 6 • Comprehensive Math Resource



Aligned to CCSS:

6.NS.C.6b • 6.NS.C.6c • 6.NS.C.8 • 6.G.A.3

Inside This Bundle:

4 Hands-On Activities • 2 Anchor Charts • 32 Task Cards
Coordinate Polygon Artist Project (8 Challenges) • 3 Grid Paper Sizes
4 Exit Tickets • 16-Question Quiz • Full Answer Keys

Created by UM Printables

CCSS Alignment Chart

This resource is fully aligned with four Grade 6 Common Core State Standards for Mathematics. The chart below identifies where each standard is addressed within the bundle so teachers can plan instruction, intervention, and assessment with confidence.

Standard	Description	Where Addressed in This Bundle
6.NS.C.6b	Understand signs of numbers in ordered pairs as indicating locations in quadrants; recognize that when two ordered pairs differ only by signs, the locations are related by reflections across one axis or both.	Activity 1: Quadrant Explorer (sign-pattern discovery) Activity 2: Reflection Discovery (sign-change rule) Anchor Chart: Quadrant Sign Pattern (p. 20) Anchor Chart: Reflection Sign-Change Rule (p. 21) Task Cards 9–16, Exit Ticket 2, Quiz Q3, Q5, Q10
6.NS.C.6c	Find and position integers and rational numbers on a number line and on a coordinate plane; include horizontal and vertical number lines.	Activity 1: plotting points in all four quadrants Number-line warm-up examples in Teacher Setups Grid Paper (3 sizes, pp. 36–38) Task Cards 1–8, Exit Ticket 1, Quiz Q1, Q2
6.NS.C.8	Solve real-world and mathematical problems by graphing points in all four quadrants; find distances between points with the same first or second coordinate using absolute value.	Activity 3: Distance with Absolute Value Activity 4: side length computations Task Cards 17–24, Exit Ticket 3, Quiz Q6, Q7, Q8, Q11
6.G.A.3	Draw polygons in the coordinate plane given coordinates for vertices; use coordinates to find side lengths and areas.	Activity 4: Coordinate Polygon Artist Coordinate Polygon Artist Project (8 challenges) Task Cards 25–32, Exit Ticket 4, Quiz Q12–16

Suggested Standards-Based Grading Tags

If your school uses standards-based grading, the tags above (6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8, 6.G.A.3) can be written next to each task card and quiz question. The four Exit Tickets are designed as one-per-standard formative checks — use them to identify students who need a small-group reteach before moving on.

NAME: _____

DATE: _____

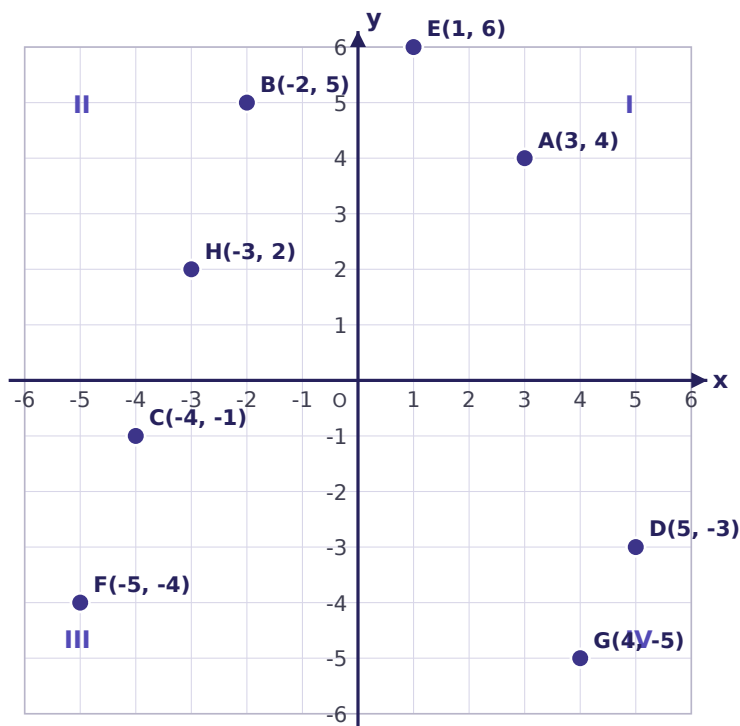
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Activity 1 — Quadrant Explorer

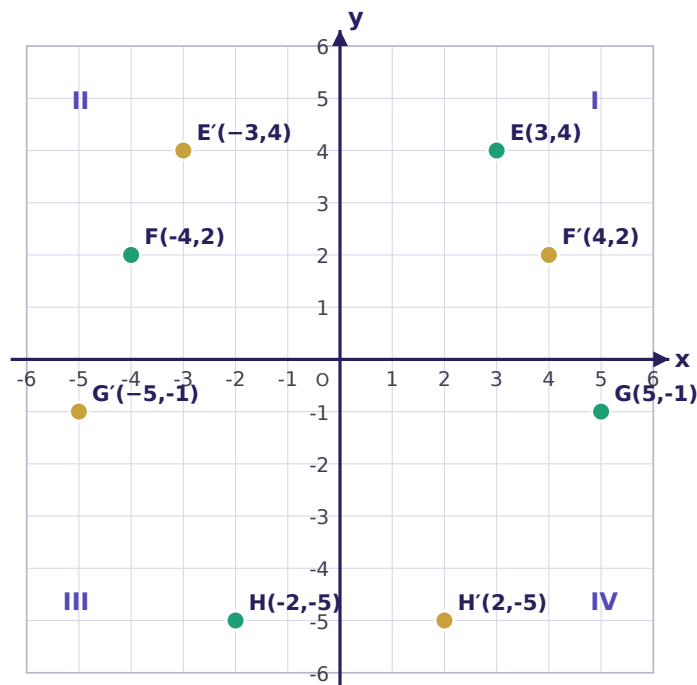
Discovering the sign pattern of each quadrant.

Part A — Plot the Points

On the coordinate plane below, plot each point. Label each point with its letter and coordinates. Then write the quadrant number in the table that follows.



Point	Coordinates	Sign of x	Sign of y	Quadrant
A	(3, 4)	—	—	—
B	(-2, 5)	—	—	—
C	(-4, -1)	—	—	—
D	(5, -3)	—	—	—
E	(1, 6)	—	—	—
F	(-5, -4)	—	—	—
G	(4, -5)	—	—	—
H	(-3, 2)	—	—	—



Pre-image P (x, y)	Reflection across y-axis (?, y)	What changed?
E (3, 4)	(____, ____)	_____
F (-4, 2)	(____, ____)	_____
G (5, -1)	(____, ____)	_____
H (-2, -5)	(____, ____)	_____

Part C — State the Rule

1. When you reflect a point across the **x-axis**, which coordinate changes sign? Which coordinate stays the same?

Answer:

2. When you reflect a point across the **y-axis**, which coordinate changes sign? Which coordinate stays the same?

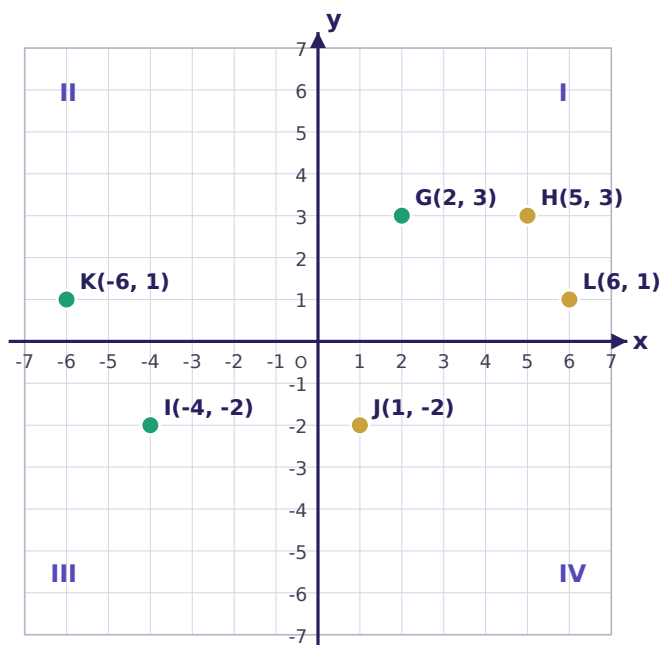
Answer:

3. A point is at (6, -7). What are the coordinates of its reflection across the x-axis? Across the y-axis?

Answer:

4. A point and its reflection across the y-axis are both shown. One point is (-5, 4). What are the coordinates of the other point? Explain.

Answer:



Pair	Coordinates	Distance formula	Distance
GH	(2, 3) and (5, 3)	$ x_1 - x_2 = \underline{\quad} - \underline{\quad} = \underline{\quad}$	$\underline{\quad}$ units
IJ	(-4, -2) and (1, -2)	$ x_1 - x_2 = \underline{\quad} - \underline{\quad} = \underline{\quad}$	$\underline{\quad}$ units
KL	(-6, 1) and (6, 1)	$ x_1 - x_2 = \underline{\quad} - \underline{\quad} = \underline{\quad}$	$\underline{\quad}$ units

NAME: _____

DATE: _____

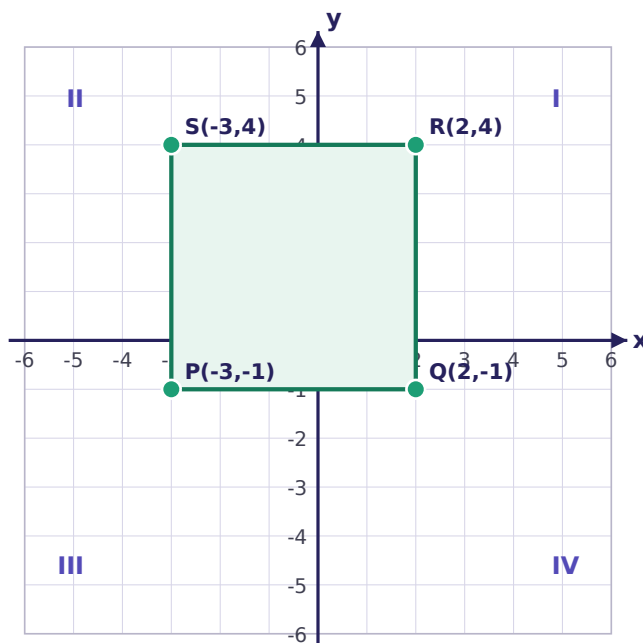
PERIOD: _____

Activity 4 — Coordinate Polygon Artist

Drawing polygons from vertices and finding perimeter & area.

Part A — Guided Practice: Rectangle in 2 Quadrants

Rectangle PQRS has vertices $P(-3, -1)$, $Q(2, -1)$, $R(2, 4)$, and $S(-3, 4)$. Plot the vertices, connect them in order to form the rectangle, then complete the table.



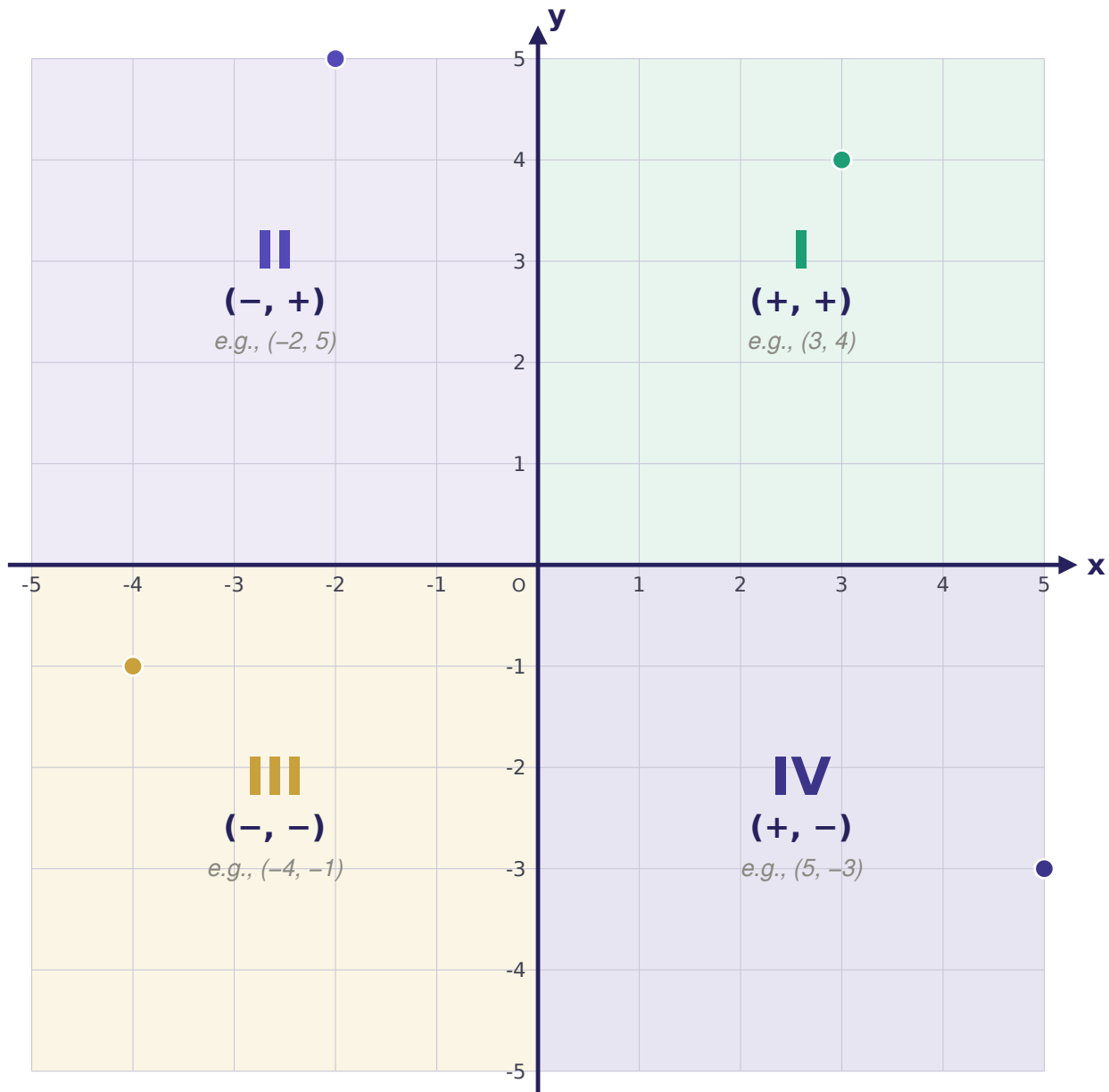
Side	Horizontal or vertical?	Length computation	Length
PQ	_____	_____	_____
QR	_____	_____	_____
RS	_____	_____	_____
SP	_____	_____	_____

Perimeter = _____ units Area = _____ square units

Which quadrants does this rectangle touch? _____

Quadrant Sign Pattern

The signs of the x- and y-coordinates tell you which quadrant the point lies in.



KEY RULE: Read (x, y) as “left/right first, then up/down.” Sign of x: $-$ = left, $+$ = right. Sign of y: $-$ = down, $+$ = up.

Points on an axis (where one coordinate is 0) are NOT in any quadrant.

Task Cards 1-4 — Plotting Points

Print on cardstock and laminate for repeated use. A recording sheet can be made by having students number 1–32 in a notebook. Answer key on page 42.

CARD 1	PLOTTING
Plot the point A(4, 6). In which quadrant does point A lie?	
A. I B. II C. III D. IV	

CARD 2	PLOTTING
Plot the point B(−5, 3). In which quadrant does point B lie?	
A. I B. II C. III D. IV	

CARD 3	PLOTTING
Plot the point C(−2, −7). In which quadrant does point C lie?	
A. I B. II C. III D. IV	

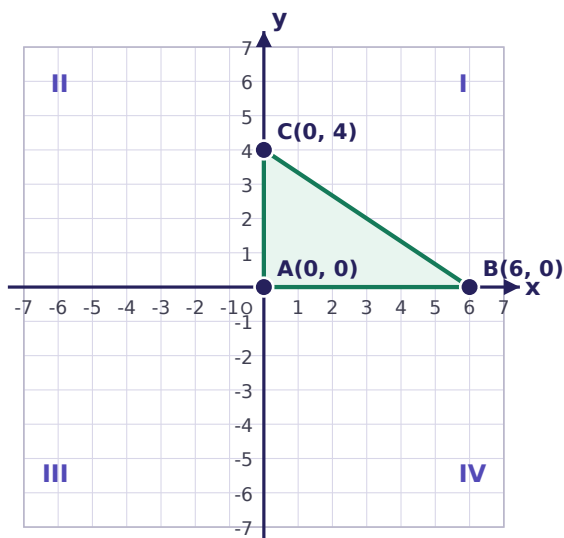
CARD 4	PLOTTING
Plot the point D(6, −4). In which quadrant does point D lie?	
A. I B. II C. III D. IV	

CHALLENGE 2

Triangle Trio

Vertices: $(0, 0)$, $(6, 0)$, $(0, 4)$

Hint: Right angle at $(0, 0)$. The diagonal side (hypotenuse) connects $(6, 0)$ and $(0, 4)$ — legs are 6 and 4.



Side	Type	Length
AB	Horizontal	_____
BC	Diagonal	_____
CA	Vertical	_____

Perimeter = _____ units **Area** = _____ square units

Work space:

Exit Tickets 1-2

Print, cut in half, and distribute. Each ticket is a 5-minute formative check aligned to a single CCSS standard.

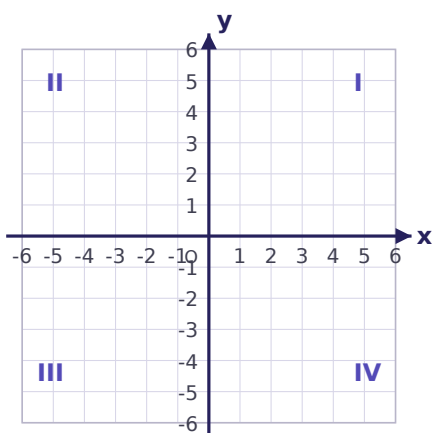
EXIT TICKET 1 Plotting Points

6.NS.C.6c

NAME: _____

DATE: _____

Directions: Plot each point on the grid provided and identify the quadrant.



Point	Quadrant
(3, 5)	_____
(-2, 4)	_____
(-4, -1)	_____
(1, -6)	_____

EXIT TICKET 2 Reflections

6.NS.C.6b

NAME: _____

DATE: _____

Directions: Find the reflection of each point across the given axis.

1. Reflect (4, 6) across the x-axis.

Answer: _____

2. Reflect (-3, 5) across the y-axis.

Answer: _____

3. Reflect (-1, -7) across both axes.

Answer: _____

NAME: _____

DATE: _____

PERIOD: _____

Coordinate Plane Mastery Quiz

16 Questions • Multiple Choice & Short Answer • Standards: 6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8, 6.G.A.3

Directions: Answer all 16 questions. For multiple-choice questions (1–14), circle the letter of the correct answer. For short-answer questions (15–16), show all your work in the space provided. Each question is worth 1 point.

1. In which quadrant does the point $P(-4, 6)$ lie? [6.NS.C.6c]

A. I	B. II
C. III	D. IV
2. Which point lies on the y-axis? [6.NS.C.6c]

A. $(3, 0)$	B. $(-5, 0)$
C. $(0, 4)$	D. $(2, 7)$
3. Reflect the point $(3, -5)$ across the x-axis. What are the coordinates of the image? [6.NS.C.6b]

A. $(3, 5)$	B. $(-3, -5)$
C. $(-3, 5)$	D. $(3, -5)$
4. Reflect the point $(-2, 7)$ across the y-axis. What are the coordinates of the image? [6.NS.C.6b]

A. $(2, 7)$	B. $(-2, -7)$
C. $(2, -7)$	D. $(-2, 7)$
5. Point M is at $(5, -3)$. Point N is the reflection of M across both axes. What are the coordinates of N? [6.NS.C.6b]

A. $(5, 3)$	B. $(-5, 3)$
C. $(-5, -3)$	D. $(3, -5)$
6. Find the distance between $(3, 8)$ and $(3, -2)$. [6.NS.C.8]

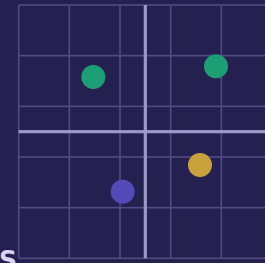
A. 5 units	B. 6 units
C. 10 units	D. 11 units
7. Find the distance between $(-4, 1)$ and $(5, 1)$. [6.NS.C.8]

A. 1 unit	B. 5 units
C. 9 units	D. 14 units
8. Points A $(-1, 4)$ and B $(-1, -3)$ are on the same vertical line. What is the distance AB? [6.NS.C.8]

A. 1 unit	B. 3 units
C. 7 units	D. 12 units
9. Which ordered pair is in Quadrant III? [6.NS.C.6c]

A. $(2, -5)$	B. $(-3, 6)$
C. $(-4, -2)$	D. $(5, 1)$





WHAT'S INSIDE

GRADE 6 • 4 QUADRANTS • REFLECTIONS • DISTANCE • POLYGONS

4

Activities

Quadrant Explorer •
Reflection Discovery
• Distance • Polygon
Artist

32

Task Cards

8 plotting • 8
reflections • 8
distance • 8 mixed
review

8

Project Challenges

Coordinate Polygon
Artist — eight named
construction
challenges

16

Quiz Questions

Multiple choice +
short answer;
answer key included

TEACH • PRACTICE • ASSESS

- Quadrant Explorer - Plot points in all four quadrants and connect coordinate signs to location.
- Reflection Discovery - Investigate reflections across the x-axis and y-axis and state the sign-change rules.
- Distance with Absolute Value - Find distances between aligned points using the difference of coordinates and absolute value.
- Coordinate Polygon Artist - Plot vertices, determine side lengths, and find polygon areas using the resource's guided strategies.
- Teacher Support - Teacher notes, suggested pacing, materials, differentiation tips, and standards alignment are included.

RESOURCE COMPONENTS

- 2 Anchor Charts
Quadrant Sign Pattern; Reflection Sign-Change Rule.
- 3 Grid Paper Sizes
Large (± 5), Medium (± 10), and Small (± 8 , finer).
- 4 Exit Tickets
One formative check for each of the four listed CCSS standards.
- Full Answer Keys
Answer keys for the activities, task cards, exit tickets, and quiz.
- CCSS Alignment
6.NS.C.6b • 6.NS.C.6c • 6.NS.C.8 • 6.G.A.3.

COORDINATE POLYGON ARTIST PROJECT — 8 CHALLENGES

Square Squad • Triangle Trio • Rectangle Realm • Pentagon Path • Diamond Design • Trapezoid Tower • Arrow Apex • City Block Design

Each challenge provides vertices and guided prompts for plotting, side-length/perimeter work, and area reasoning as appropriate to the figure.

FULL RESOURCE: 65 PAGES Teacher notes • student work • task cards • project • anchor charts • grid paper • exit tickets • quiz • answer keys

CONTENT SUMMARY BASED ON THE 65-PAGE FULL RESOURCE