Patterns and The Coordinate Plane

Completely Editable

5th Grade Curriculum Unit

Details :

This 10 day quick unit covers 5th Grade Geometry and Operations and Algebraic Thinking Standards. If the skills don't completely align to your state standards, that's OK because this resource is 100% editable! All content can be modified to make this unit perfect for your classroom!

Included Resources :

➢ Weekly warm up recording sheets
➢ Weekly exit ticket sheets
➢ Blank lesson plans
➢ Unit tracking pages
➢ Unit vocabulary sheet
➢ Unit pre-assessment
➢ Warm ups
➢ End of Unit Performance Task

➢ Partner Activity
➢ Traditional notes
➢ Fold and Flip Notes
➢ Practice assignments
   (for homework or classwork)
➢ A complete PDF of the unit
➢ An editable PPT version of the unit.
➢ A binder cover and spine labels

Lessons :

➢ Lesson 1 : Numerical Patterns
➢ Lesson 2 : The Coordinate Plane
➢ Lesson 3 : Coordinate Plane Applications

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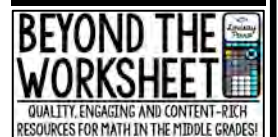
http://bit.ly/LPerro

Meet the Author :

My name is Lindsay Perro and I have been an educational writer and content developer since 2009. After spending 8 years as a Middle School Math Teacher and Interventionist, I am now following my passion and focusing on creating quality educational resources to make your job easier and keep students engaged and excited about math!

Lindsay Perro

BEYOND THE WORKSHEET
QUALITY, ENGAGING AND CONTENT-RICH RESOURCES FOR MATH IN THE MIDDLE GRADES!

Patterns & The Coordinate Plane
▶▶▶Unit Plan for 5ᵗʰ Grade Math

10 DAY UNIT

Lesson	Resources
Unit Prep (pgs. 6 – 12)	• Weekly Warm Up Sheet • Exit Tickets • Lesson Plan Template • Vocabulary • Pre-Assessment
1) Numerical Patterns (pgs. 13 – 19)	• Two Warm Ups • Numerical Patterns Notes (2 pages) • Numerical Patterns Practice Worksheets (2)
2) The Coordinate Plane (pgs. 20 – 34)	• Three Warm Ups • The Coordinate Plane Notes • The Coordinate Plane Printable • The Coordinate Plane Fold and Flip Notes • The Coordinate Plane Practice Worksheet • The Coordinate Plane Riddle • Patterns and The Coordinate Plane Practice Worksheet • The Coordinate Plane Partner Activity
3) Coordinate Plane Applications (pgs. 35 – 41)	• Two Warm Ups • Coordinate Plane Applications Practice Worksheets (2) • Coordinate Plane Quiz (2 pages)
End of Unit (pgs. 42 – 47)	• Unit 7 Reference Sheet • Unit 7 Task • Unit 7 Assessment

2

Unit 7 : Patterns and the Coordinate Plane

Day 1	Day 2	Day 3
Topic: Unit Prep	**Topic:** Numerical Patterns	**Topic:** Numerical Patterns
Resources: • Review Unit 6 {suggested activity – Fraction Operations Stations} • Unit 7 Pre Assessment	**Resources:** • L1 Warm Up 1 • Numerical Patterns Notes (2 pages) • Numerical Patterns Practice Worksheet (worksheet one)	**Resources:** • L1 Warm Up 2 • Numerical Patterns Practice Worksheet (worksheet two) • {insert choice activity}

Day 4	Day 5	Day 6
Topic: The Coordinate Plane	**Topic:** The Coordinate...	
Resources: • L2 Warm Up 1 • The Coordinate Plane Notes • Labeling the Coordinate Plane • The Coordinate Plane Practice Worksheet	**Resources:** • L2 Warm Up 2 • The Coordinate P... and Flip Notes • The Coordinate Riddle	

Day 7	Day 8	
Topic: Coordinate Plane Applications	**Topic:** Coordin... Applica...	
Resources: • L3 Warm Up 1 • Coordinate Plane Applications Practice Worksheets (2)	**Resources:** • L3 Warm Up... • The Coordi... • {insert choi... suggested... Plane Stat...	

Unit 7 : Patterns and the Coordinate

Tips and Talking Points

LESSON 1 Numerical Patterns

- Generating numerical patterns from two rules is a skill that is giving students the background knowledge needed to eventually gener... rules for function tables.
- By starting with a review using examples with shape patterns, you w... students thinking about changes that are not always the same (e.g... two).
- Misunderstandings – Identifying the pattern, especially if the pattern... changes (e.g. +1, +2, +3...), can be challenging for some students.

LESSON 2 The Coordinate Plane

- Plotting points on the coordinate plane is a skill that students will use in math classes for the rest of their school years. It is crucial that they understand how to properly plot points. Spend the time needed to just plot points over and over again.
- Misunderstandings – Students will want to label the quadrants in a clockwise manner starting from the top left because that is how we mov... when reading. Consider keeping a labeled visual up in your classroom and address it daily during this unit.

LESSON 3 Applications

- Tie in the idea of maps and grids f... may not think coo...

Teacher Resources

Name _____ Date _____

Numerical Patterns

Skill : Numerical patterns

1) Complete the pattern using the rule "add six".

3 , _____ , _____ , _____ , _____

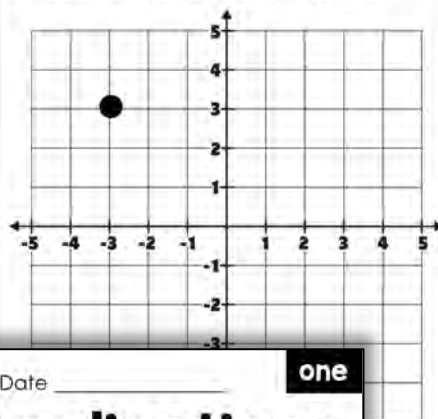2) Complete the pattern using the rule "subtract fo...
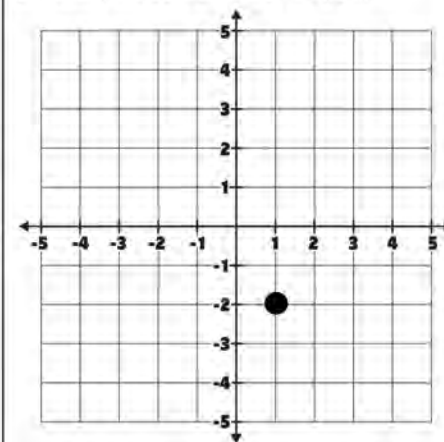
60 , _____ , _____ , _____ , _____

Name _____ Da...

The Coordinate...

Skill : Identifying points in a coordina...

1. Identify the coordinates of the point.

2. Identify the coordina...
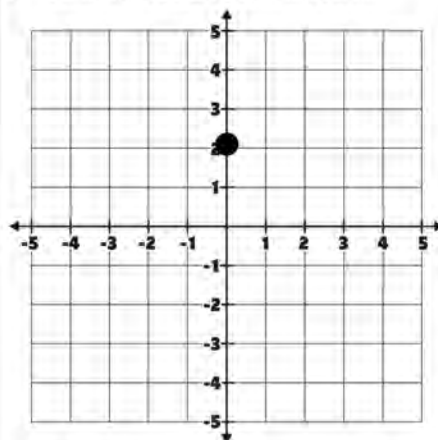
4. Identify the coordinates of the point.

Name _____ Date _____

Coordinate Plane Applications

Skill : Identifying and plotting points in a coordinate plane

1. Identify the coordinates of the point.

2. Identify the coordinates of the point.

3. Plot W(5, 2), X(0, -3) and Y(-2, -2).
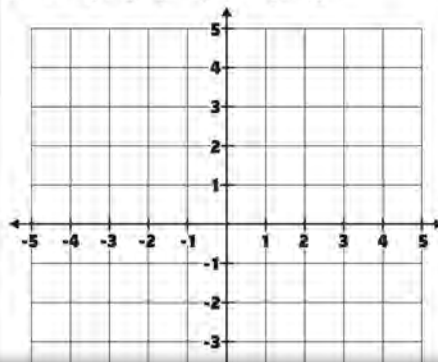
4. Plot R...

Name _____ Date _____

Coordinate Plane Applications

Skill : Coordinate plane applications

Both Kelsie and Roland are saving money to buy a cell phone. They each check their account balance at the beginning of the month. The chart below shows the balance in each account over 8 months.

		1	2	3	4	5	6	7	8
Kelsie		20	40	60	80	100	120	140	160
Roland		30	60	90	120	150	180	210	240

1) Graph the data for each person on the coordinate plane. Be sure to label the y-axis.

2) At the rate they are saving now, will Kelsie ever have a higher balance than Roland? Explain.

3) Write a rule for each person to show how much they are saving each month.

Warm Ups

Numerical Patte[rns]

Big Idea :
- Patterns can help you predict a certain number i[n]
  ordered pairs to represent relationships on coordi[nate]

Review :
- ❑ Complete the shape pattern.

Explain how you knew which shapes came next. _____

_____

Numerical Patterns :
- ❑ Complete the numerical pattern.

2   5   8   11

Numerical Patter[n] [N]otes

Patterns Given Two Rules :

❑ **Completing a table :**

Nona and Marcellus are running a marathon. Nona i[s]
and Marcellus is running 8 minutes per mile. Complet[e]
long it takes both Nona and Marcellus to complete t[he]

	1 mile	2 miles	3 miles	4 miles	
Nona					
Marcellus					

❑ **Interpreting a table :**

The table shows the amount of money earned by two teenagers working a given
number of hours at their job.

	4 hours	8 hours	12 hours	16 hours	20 hours	24 hours
Rafael	$40	$80	$120	$160	$200	$240
Brooke	$36	$72	$108	$144	$180	$216

[m]oney Rafael makes each hour compared to the
[m]akes each hour?

[e]ach make after working 40 hours? Explain how you

The Coordinate Plane Notes

Name _____ Date _____

Big Idea :
- The coordinate plane is created by two
  perpendicular axes, the x-axis and y-axis.

Key Words :
- Ordered pair
- Origin
- x-axis
- y-axis

Explore : Label each part of the coordinate plane.

- The points in Quadrant 1 have a
  _____ x-value and a
  _____ y-value.
- The points in Quadrant 2 have a
  _____ x-value and a
  _____ y-value.
- The points in Quadrant 3 have a
  _____ x-value and a
  _____ y-value.
- The points in Quadrant 4 have a
  _____ x-value and a
  _____ y-value.
- The point where the x-axis and y-axis
  intersect, or _____ is called the_____.
- An _____ _____ identifies the location of a point on the coordi[nate]
  The first number represents the ____ coordinate and the second number represents t[he]
  coordinate.

Quadrant _____   Quadrant _____

Quadrant _____   Quadrant _____
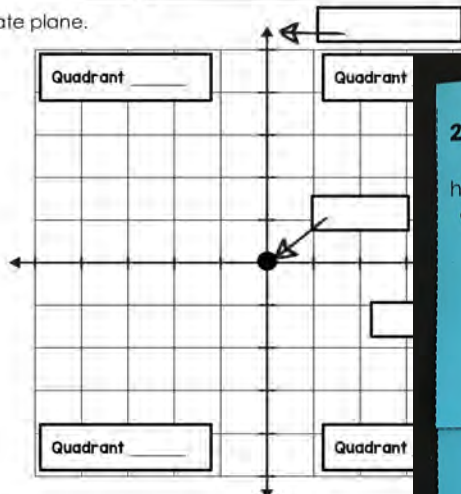
Plotting Points: Moving along the coordinate plane is like moving through a city. You [move along]
the "streets" and cannot cut through diagonally.
- To plot a point you start at the _____.
- Move _____ or _____ from the origin based on the first number in the orde[red pair.]
  number is _____ move right from the origin. If the number is _____ [move left]

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2nd Quadrant
The points in Quadrant 2
have negative x-coordinates
and positive y-coordinates.

$(-x, y)$

1st Quadrant
The points in Quadrant 1
have positive x-coordinates
and positive y-coordinates.

(x, y)

x-axis   origin

$(-x, -y)$ $(x, -y)$

The points i[n]
have negativ[e]
and negativ[e]

3rd Quadrant

Notes

Name _____

Numerical Patter[ns]

Directions : Determine the pattern and write the rule fo[r]

1)	x	y
	0	1
	1	2
	2	3
	3	4

2)	x	y
	0	0
	1	2
	2	4
	3	6

Directions : Determine the pattern and complete the [...]

4)	x	y
	1	3
		9
	5	
	10	30

5)	x	y
	20	10
	30	15
		20
		30

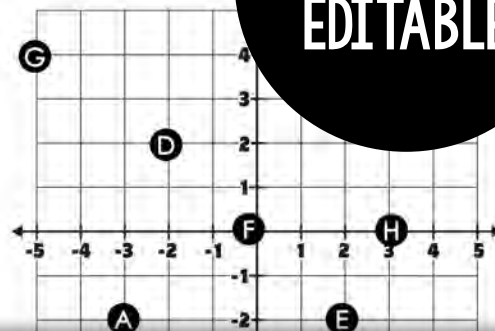**Directions :** Complete each table using the rule y = x [...]

Name _____ Date _____

The Coordinate Plane

Directions : Identify the coordinates of each point.

A. _____
B. _____
C. _____
D. _____
E. _____
F. _____

Name _____ Date _____

The Coordinate Plane Riddle
"WHAT DO YOU GET WHEN TWO GIRAFFES COLLIDE?"

Directions : Find each point and write the letter for the point on the line over the correct ordered pair.

(8, -4)

[..5, 3) | (-8, -4)
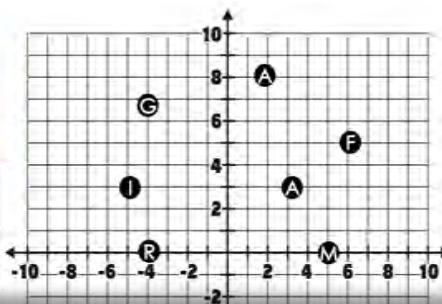
The Coordinate Plane Activity
Student Directions

Directions :

- You and a partner will take turns plotting po[ints] on the coordinate plane.
- Your goal is to plot FIVE points in a straight r[ow]. You only get to pick one coordinate for ea[ch]
- You will take turns spinning the spinner belo[w] a pencil and paperclip. The number you la[nd] will be the FIRST number in the ordered pair point you will plot. You get to pick the seco[nd] in the ordered pair.
- You will record the coordinates of the order[ed] partner worksheet.
- When one player gets five points in a straigh[t]

ACTIVITY
SPINNER

Name _____ Date _____

Coordinate Plane Applications

A coordinate grid is placed on top of the map of a city neighborhood.

1) What is located at (9, 2)?

2) Where would you end up if you started at the origin and moved 6 units right and 5 units up?

3) Where would you end up if you start at the school and move 6 units down and 8 units left?

5) Explain how you would get from the art center, to the park and then to the [school]

Name _____ Date _____

Patterns and The [...]
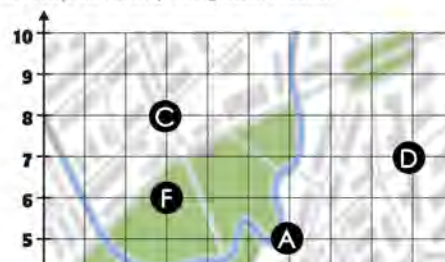## Plane Pre-As[...]

1) Determine the pattern and complete the table.

x	y
0	0
4	2
6	
	4
18	

2) Determine the patte[...]
write the rule for the [...]

x	y
0	6
1	7
2	8
3	9

4) Identify the coordinates of the point.

5) Plot

Score :

Name _____ Date _____

The Coordinate Pl[...]

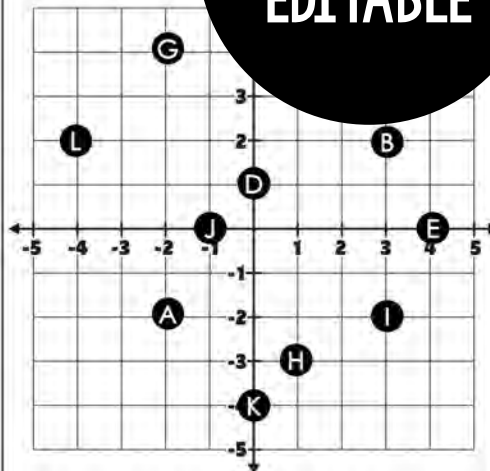1) Select all points that are located in the first quadrant.
- (A) Point A   (D) Point F
- (B) Point B   (E) Point H
- (C) Point D   (F) Point L

2) Which point is located an equal distance from each axis?
- (A) Point A
- (B) Point B
- (C) Point I
- (D) Point L

3) Name the coordinates of each point.

Point B _____
Point G _____
Point K _____
Point L _____

Plot and label the following points on the coordinate plane below.
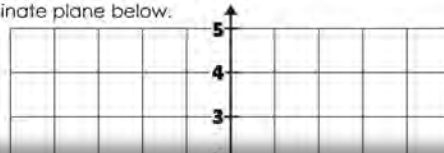
Patterns and The Coordinate Plane
▶▶▶▶▶▶▶▶ END OF UNIT TASK

Objective : Extend a pattern and come up with [...]
of ordered pairs and graph the order[...]

About : Monet is arranging candies in a pattern. H[...]
shown below.

1   2   3

1. Draw what the next two arrangements would lo[...]

2. How many candies are needed for arrangemen[...]
your answer.

Arrangement 6 _____   Arra[...]

Explanation : _____

_____

_____

3. Write a rule that could be used to find the numb[...]
number. Explain how you found your answer.

Rule: _____

Explanation : _____

Score :

Name _____ Date _____

Patterns and the Coordinate Plane Assessment

Numerical Patterns: Determine the pattern and write the rule for each table.

1)

x	1	2	3	4	5
y	0	1	2	3	4

2)

x	2	4	6	8	10
y	5	7	9	11	13

Numerical Patterns: Determine the pattern and complete each table.

3)

x	2	4		8	10
y	6	12	18		

4)

x	4		12	16	
y	1	2		4	5

Numerical Patterns: Complete each table using the given rule.

5) "add three"

x	1	2	3	4	5
y					

6) "subtract four"

7) "times two"

x	3	4	5	6	7
y					

10) At the current snowfall rate, how much snow will each city have after 8 hours? 12 hours?

Assessments

5th Grade Math CURRICULUM

Unit SEVEN

Patterns and The Coordinate

$$\frac{2}{9} + \frac{5}{9} = \frac{}{9}$$

$$1\frac{1}{8} + \frac{3}{8} = 1\frac{4}{8} = 1\frac{1}{2}$$

$$\frac{3}{4} + \frac{1}{6} = \frac{9}{12} + \frac{2}{12} = \frac{11}{12}$$

$$1\frac{1}{4} + 3\frac{5}{6} = 1\frac{3}{12} + 3\frac{10}{12}$$

$$= 4\frac{13}{12}$$

$$= 5\frac{1}{12}$$

Unit SEVEN — Patterns and The Coordinate Plane

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5th Grade Math Unit 7
Patterns and The Coordinate Plane

STUDENT TRACKING

Name	Pre Assessment	Post Assessment	Notes

Unit SEVEN Lesson TWO
The Coordinate Plane

STUDENT TRACKING

Name	Coordinate Plane Practice	Riddle	Patterns & Coordinate Plane Practice	Partner Activity

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Tracking Sheets & Binder Labels

Patterns & The Coordinate Plane

▶▶▶▶▶▶▶▶▶▶▶ 5th G...

Vocabulary	C...
• axis • coordinates • coordinate plane • ordered pairs • origin • quadrant • *x*-axis • *x*-coordinate • *y*-axis	• Generate from two • Identify a graph th... grid. • Understa system a... purpose • Solve re... using the coordina...

Name_____ Week of _____ to _____

▶▶▶▶ Weekly Warm Up Sheet

Date:	
Date:	
Date:	

COMPLETELY EDITABLE

Patterns and The Coordinate Plane Lesson Plan

Standard(s): _____ **Date(s):** _____

Student Materials:

☐ Calculator	☐ Scissors	☐ Compass	☐ _____
☐ Colored pencils	☐ Glue	☐ Graph paper	☐ _____
☐ Ruler	☐ Protractor	☐ Dry erase	☐ _____

Lesson Progression:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Exit Ticket

...cket	Exit Ticket	Exit Ticket
	Name_____	Name_____
	Date	Date

Patterns and The Coordinate Plane

(Lesson **TWO**)

THE COORDINATE PLANE

Suggested Time Frame : Two Days

Resources Included:
- Three Warm Ups
- The Coordinate Plane Notes
- The Coordinate Plane Printable
  - Students label each quadrant, each axis a...
- The Coordinate Plane Fold and Flip No...
- The Coordinate Plane Practice Worksh...
  - Can be used for classwork or homework
- The Coordinate Plane Riddle
- Patterns and The Coordinate Plane Pr...

- Understand the coordinate system and explain the purpose
  of each axis.

▶▶▶▶▶

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Planning Pages