Plan for Grade 6 Unit 7: Rational Numbers

Relevant Unit(s) to review: Grade 5 Unit 7: Shapes on the Coordinate Plane

Essential prior concepts to engage with this unit	• locating fractions on number lines • graphing in quadrant I on the coordinate plane • factors and multiples
Brief narrative of approach	This unit marks the beginning of student work with negative numbers with contexts and with mathematical representations such as number lines and coordinate planes. Since the unit is written assuming no prior knowledge of negative numbers, most of the unit will be accessible to students with unfinished learning. The only adjustments have been removing lessons that are optional and replacing them with grade 5 lessons addressing graphing in quadrant I on the coordinate plane.

Lessons to Add	Lessons to Remove or Modify
These lessons incorporate grade 5 work with graphing ordered pairs in quadrant I. 1. 5.7.2 2. 5.7.11	These lessons may be removed to make room for added lessons. 1. Remove 6.7.7: This lesson synthesizes the learning of the first six lessons and features an optional activity. 2. Remove 6.7.15: This lesson has students plot vertices of polygons in the coordinate plane. It is an application of prior learned concepts to related standards. 3. Remove 6.7.18: The majority of this lesson asks students to think about the greatest common factor and least common multiple for sets of 3 whole

	numbers, where the standards only call for students to analyze pairs of whole numbers. 4. Remove 6.7.19: This lesson is optional.
Lessons added: 2	Lessons removed: 4

Modified Plan for Grade 6 Unit 7

Day	IM lesson	Notes
	assessment	6.7 Check Your Readiness assessment Note that the Check Your Readiness assessment includes item-by-item guidance to inform just-in-time adjustments to instruction within the lessons in 6.7.
1	6.7.1	
2	6.7.2	
3	6.7.3	
4	6.7.4	
5	6.7.5	
6	6.7.6	
7	6.7.8	
8	6.7.9	
9	6.7.10	
10	5.7.2	If the initial assessment shows that students are not familiar with plotting points in the first quadrant, include this lesson before continuing with grade-level content.

11	5.7.11	If the initial assessment shows that students are not familiar with using coordinate pairs to find linear patterns, include this lesson before continuing with grade-level content.
12	6.7.11	
13	6.7.12	
14	6.7.13	
15	6.7.14	
16	6.7.16	
17	6.7.17	

Priority and Category List for Lessons

High priority (+), Medium priority (0), Low priority (-)

E: Explore, Play, and Discuss, D: Deep Dive, A: Synthesize and Apply

Lesson	Priority (+, 0, -)	Category (E, D, A)	Notes
6.7.1	+	E	Negative numbers and supporting vocabulary are introduced.
6.7.2	+	D	The terms opposite (numbers) and rational numbers are introduced.
6.7.3	+	D	
6.7.4	+	D	
6.7.5	+	D	
6.7.6	+	D	The term absolute value is introduced.
6.7.7	-	A	Contains an Info Gap which may be skipped.
6.7.8	+	E	
6.7.9	+	D	Solutions to inequalities are first introduced.
6.7.10	0	A	
6.7.11	+	E	The coordinate plane is introduced.
6.7.12	+	D	

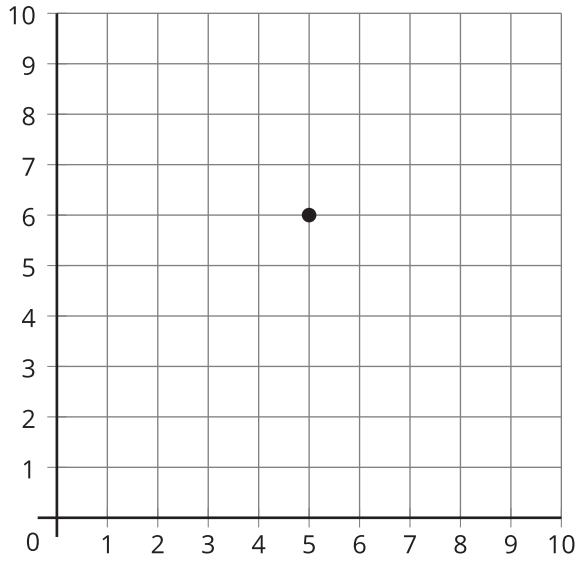
6.7.13	+	D	
6.7.14	0	D	
6.7.15	-	A	This lesson has students plot vertices of polygons in the coordinate plane. It is an application of prior learned concepts to related standards.
6.7.16	0	D	Greatest common factor is introduced.
6.7.17	0	D	Least common multiple is introduced.
6.7.18	-	A	The majority of this lesson is optional.
6.7.19	-	A	This lesson is optional.

Lesson 2: Points on the Coordinate Grid

- Let’s plot points on the coordinate grid.

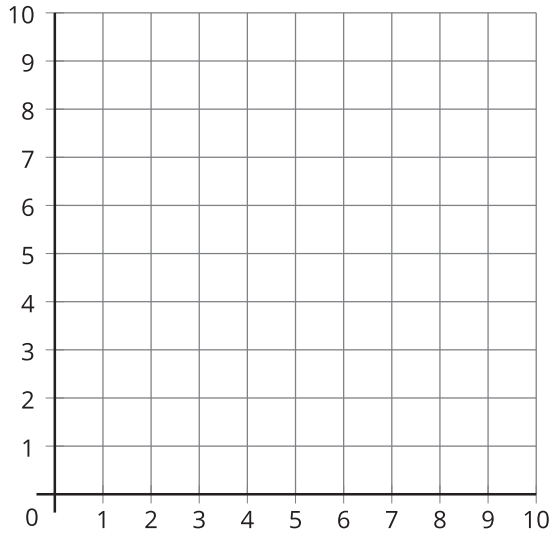
Warm-up: Notice and Wonder: A Point

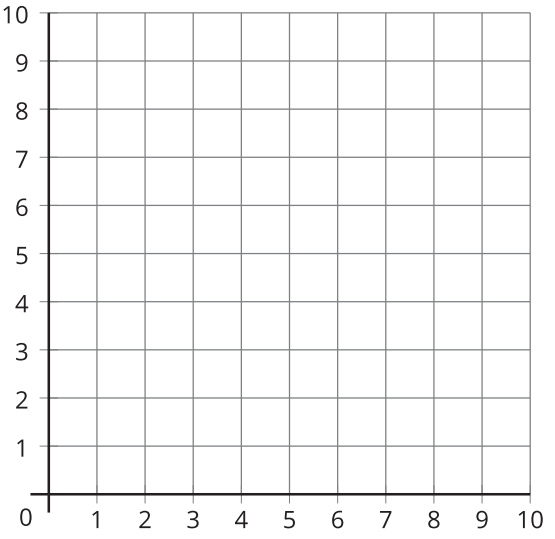
What do you notice? What do you wonder?



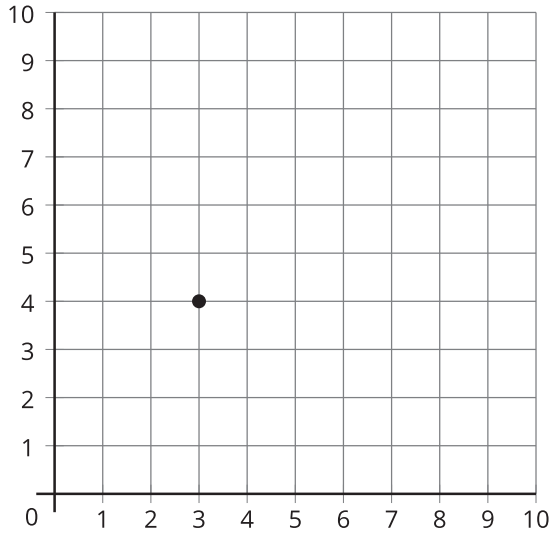
2.1: What's the Point?

1. Play 2 rounds of What's the Point so each partner gets a chance to draw.
    - Sit back to back with your partner.
    - Partner A: Choose a card. Then, describe the location of the point to your partner.
    - Partner B: Draw the point on the blank coordinate grid.
    - Compare the card with your partner's diagram.
    - Discuss: What's the same? What's different?

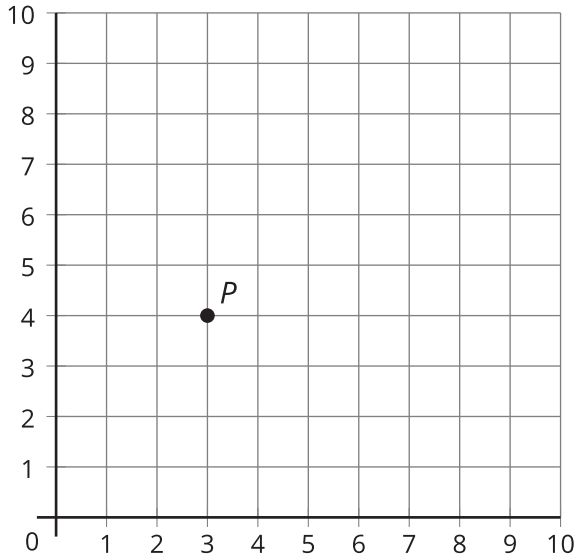


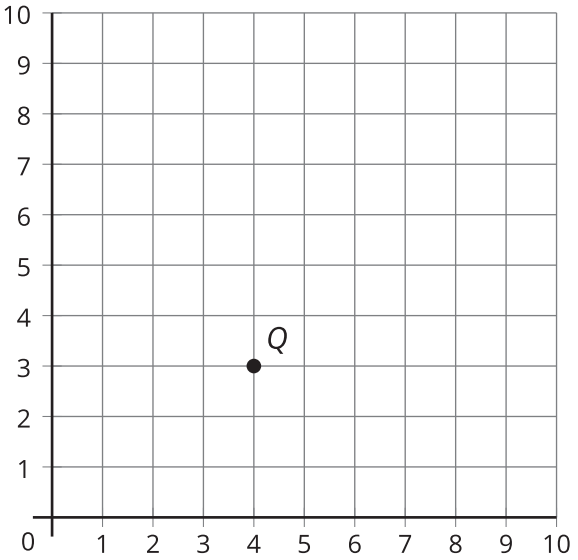


2. Use words to explain the location of the point on the grid.

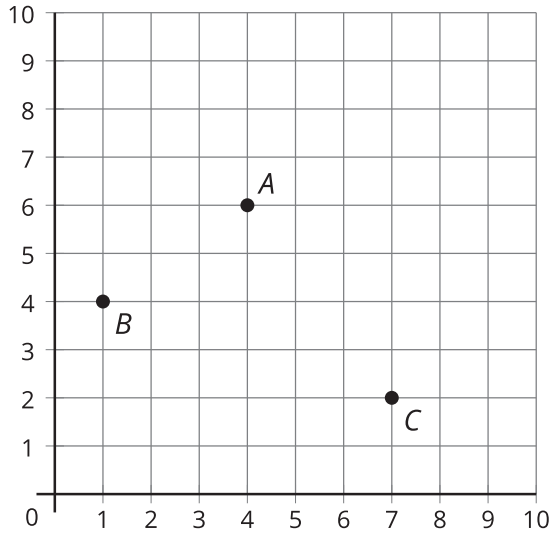


2.2: Plot and Label Points





1. List the coordinates for each point.



	coordinates
A	(___ , ___)
B	(___ , ___)
C	(___ , ___)

2. Plot points D, E, F on the same grid.

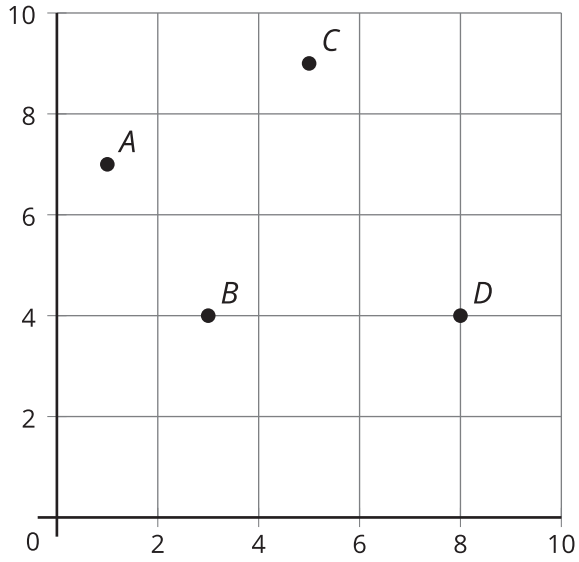
	coordinates
D	$(6, 4)$
E	$(2, 5)$
F	$(8, 3)$

Lesson 11: Patterns and Ordered Pairs

- Let’s graph patterns on the coordinate grid.

Warm-up: Notice and Wonder: The Coordinate Grid

What do you notice? What do you wonder?



11.1: Patterns on the Coordinate Grid, Part 1

Partner A

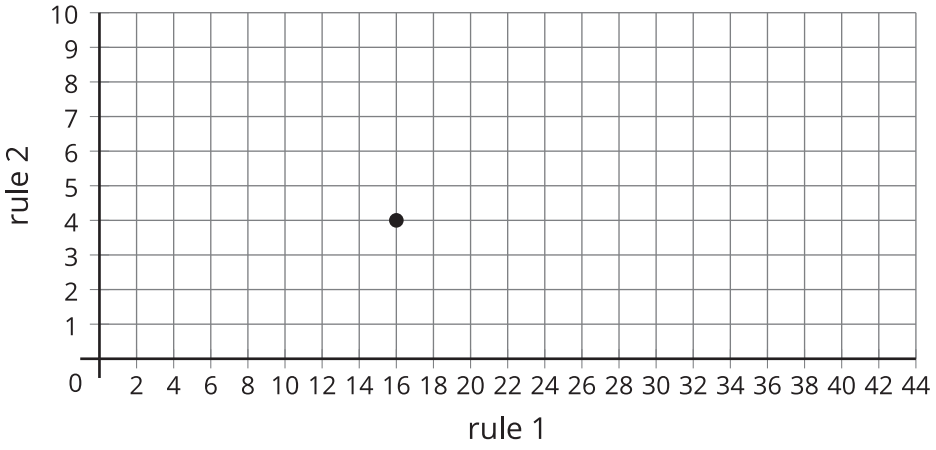
Rule 1: Start at 0. Keep adding 8.

Rule 2: Start at 0. Keep adding 2.

1. Use the rules to complete the table.

	A	B	C	D	E	F
rule 1						
rule 2						

2. Which table column represents the point on the coordinate grid? Label the point with the appropriate letter.



3. Plot and label the rest of the points.

Partner B

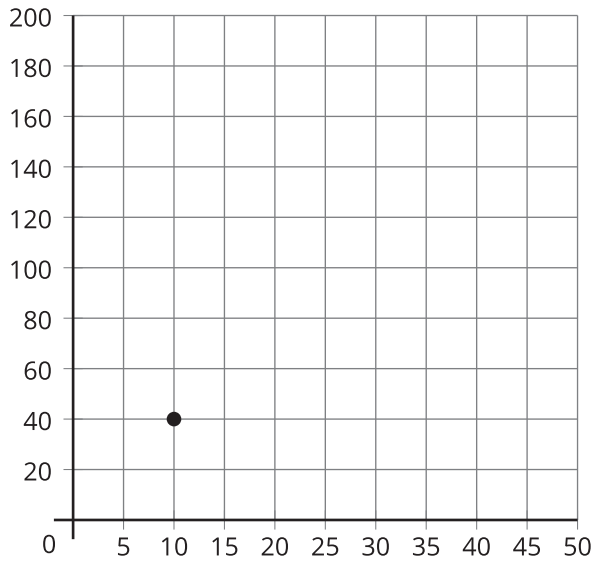
Rule 1: Start at 0. Keep adding 10.

Rule 2: Start at 0. Keep adding 40.

1. Use the rules to complete the table.

	A	B	C	D	E	F
rule 1						
rule 2						

2. Which table column represents the point on the coordinate grid? Label the point with the appropriate letter.



3. Plot and label the rest of the points.

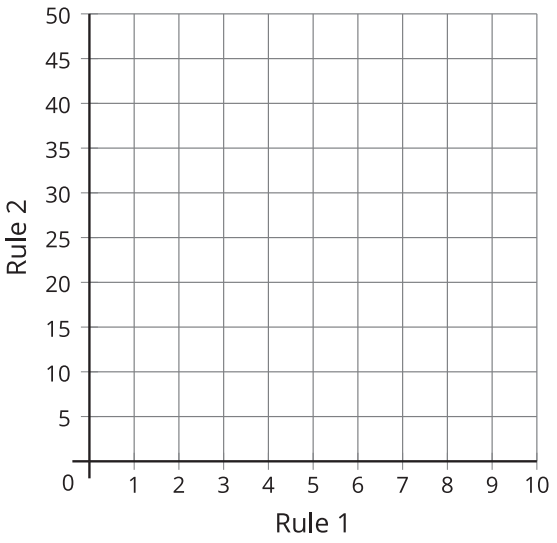
11.2: Patterns on the Coordinate Grid, Part 2

1. Use the rules to complete the table.
   - Rule 1: Start with 0. Add 2.
   - Rule 2: Start with 0. Add 5.

	A	B	C	D	E	F
Rule 1						
Rule 2						

2. What patterns do you notice between the corresponding terms of the two patterns?

3. Plot and label the points from the table.



4. What does the point C tell you about Rule 1 and Rule 2?