

Grade 5 Unit 7

Geometry and the Coordinate Plane

Volume 1 Issue 7

References

Helpful Links:

<https://smart.wikispaces.com/Grade+5+Geometry>

<http://www.shodor.org/interactivate/activities/MazeGame/>

<http://www.mathplayground.com/spaceboycastle.html>

Math Grade 5 Textbook

Connection:

- Ch. 2, lesson 5
- Ch. 6 lesson 7
- Ch. 7 lessons 5 – 9
- Ch. 8 lesson 4
- Ch. 12 lesson 3

Textbook Online:

<http://connected.mcgraw-hill.com/connected/login.do>

Ask your teacher for the online passcode.

Dear Parents,

Your student's math class is calling for students to be actively engaged in doing math in order to learn math. In the classroom, students will frequently work on tasks and activities to discover and apply mathematical thinking. Students will be expected to explain or justify their answers and to write clearly and properly. Your students will receive a consumable textbook and online access from their teacher.

Concepts Students will Use and Understand

- Generate patterns using given rules
- Identify relationships between terms and between two numbers
- Form ordered pairs consisting of corresponding terms from the two patterns
- Create a coordinate grid and graph ordered pairs in the first quadrant of the coordinate plane
- Generate line graphs to represent patterns and linear functions
- Articulate directions as students plot points
- Interpret coordinate values of points in the context of situations
- Represent real world and mathematical problems using coordinate terminology and graphed model

Vocabulary

Ordered Pairs: A pair of numbers where order is important, for example, (4,6) is different to (6, 4). Often used to indicate on a coordinate plane, graph or map.

Coordinate Plane: A plane containing two perpendicular axes (x and y) intersecting at a point called the origin (0, 0).

Patterns: A sequence of shapes or numbers that follow a logical rule.

Function: A mathematical relationship between two values. The second value depends on (is a function of) the first one.

Try <http://intermath.coe.uga.edu/dictionary/homepg.asp> or <http://www.amathsdictionaryforkids.com/> for further examples.

Symbols

(4, 6) 4 on the x-axis and 6 is on the y-axis

x name of axis

y name of axis

Grade 5 Unit 7

Example 1

For example, given the rule “add 4” and the starting number 0, and given the rule “add 8” and the starting number 0, generate terms in the resulting sequences of numbers (0, 4, 8, 12, 16, ...) and (0, 8, 16, 24, 32,...). Students should see that the terms in the second sequence are double the terms in the first sequence, or that the terms in the first sequence are half the terms in the second sequence.

Function table

x	y

Example 2

The graph of both sequences of numbers is a visual representation that will show the relationship between the two sequences of numbers.

Encourage students to represent the sequences in T-charts so that they can see a connection between the graph and the sequences.

0	0
1	4
2	8
3	12
4	16

0	0
1	8
2	16
3	24
4	32

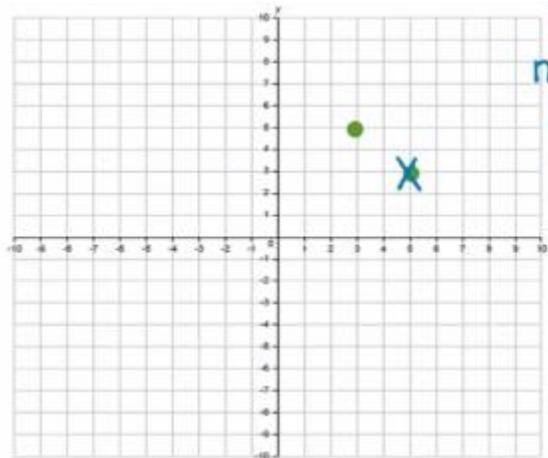
Example 3

How are (1,7) and (7,1) different when plotted on a coordinate grid?

Example 4

What is the difference between the x axis and the y axis?

Example 5



The specific way I name a point on the coordinate plane does not matter.



Playground: (3,5)

Activities at Home:

- Play battleship and practice naming coordinates
- Create rules (ex. $n = 3$) and have your student extend the number pattern (3, 6, ,).
- Create a number pattern and have your student write the rule.
- Create an input/ output machine (function table) for a given rule and have the student fill in the missing Inputs and Outputs.
- Create an input/ output machine (function table) for an unknown rule and have the student fill in the missing Inputs and Outputs and write the rule.