

Title: Shuttle Coordinates

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Subject(s): Mathematics, Science

Topic(s): Plotting Coordinates, Graphing, Space Shuttle

Grade/Level: 5-8

Summary of Activity:

Students will draw space shuttles on graph paper using x- and y-coordinates.

Objective:

By the end of this activity, students will be able to plot points on a graph that depict a picture of the Space Shuttle.

Time Allotment: 20-30 minutes

Procedures/Instructions:

1. Make sure students understand graphing, and vertical and horizontal axes.
2. Give students Worksheets 1 and 2 with coordinating graph paper.

Instructional Materials:

[Student Worksheets](#) (1 per student)

Additional Resources (Web Links, File Attachments):

Space shuttle images

<http://spaceflight.nasa.gov/gallery/images/shuttle/>

National Science or Mathematics Standards:

Mathematics

Algebra Standard

Instructional programs from pre-kindergarten through grade 12 should enable all students to—

- Use mathematical models to represent and understand quantitative relationships

In grades 3-5 all students should—

- Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.



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Instructional programs from pre-kindergarten through grade 12 should enable all students to—

- Understand patterns, relations, and functions

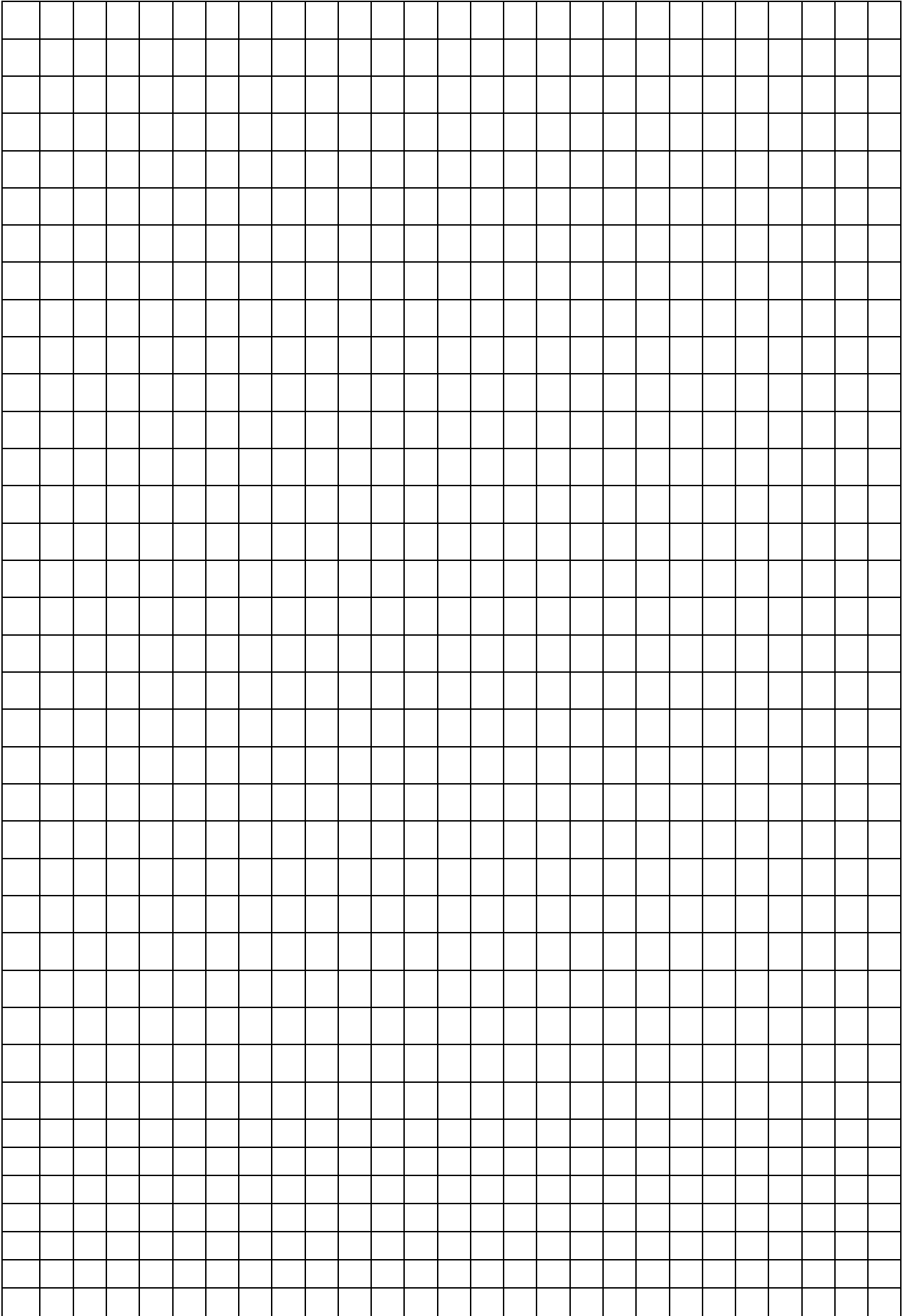
In grades 6-8 all students should—

- Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules.

Assessment Plan:

You can check for understanding based on whether the student's shuttle drawing is accurate.

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3



Draw a Space Shuttle

Plot the ordered pairs in each section of the graph by finding the first number of the ordered pair on the horizontal axis and the second on the vertical axis. Plot and connect the points in each section, **drawing one line segment at a time**. No lines should be drawn to connect points listed under different parts of the instructions.

PART 1	13,1
	13,4
	6,5
	7,8
	12,16
	13,25
	14,28
	15,29
	16,28
	17,25
	18,16
	23,8
	24,5
	17,4
	17,1

PART 2	10,13
	10,32
	11,34
	12,32

PART 3	12,16
	12,34
	15,39
	18,34
	18,16

PART 4	18,32
	19,34
	20,32
	20,13

PART 5	15,25
	14,24
	14,25
	15,26
	16,25
	16,24
	15,25

PART 6	11,10
	11,8
	13,8
	13,10

PART 7	16,10
	14,10
	14,9
	16,9
	16,8
	14,8

PART 8	17,9
	19,9

PART 9	17,8
	17,9
	18,10
	19,9
	19,8

PART 10	12,4
	12,1
	13,0
	9,0
	10,1
	10,4

PART 11	18,4
	18,1
	17,0
	21,0
	20,1
	20,4

Space Shuttle Drawing 2

Draw a space shuttle by connecting points in all four quadrants of the coordinate plane. You will have to number your coordinate plane before beginning to plot points. Plot the points in Part 1 by finding the first number in the ordered pair on the horizontal axis and the second number on the vertical axis. Plot and connect the points in each section by drawing one line segment at a time (make sure you go in order). No lines should be drawn to connect points listed under different parts of the instructions

PART I	-4,-18
	-4,-15
	-11,-14
	-10,-11
	-5,-3
	-4,6
	-3,9
	-2,10
	-1,9
	0,6
	1,-3
	6,-11
	7,-14
	0,-15
	0,-18
	-4,-18

PART II	-5,-3
	-5,15
	-2,20
	1,15
	1,-3

PART III	-7,-6
	-7,13
	-6,15
	-5,13

PART IV	1,13
	2,15
	3,13
	3,-6

PART V	-5,15
	-5,-18
	-4,-19
	-8,-19
	-7,-18
	-7,-14.5

PART VI	1,-15
	1,-18
	0,-19
	4,-19
	3,-18
	3,-14.5

PART VII	-6,-9
	-6,-11
	-4,-11
	-4,-9

PART VIII	-1,-9
	-3,-9
	-3,-10
	-1,-10
	-1,-11
	-3,-11

PART IX	0,-11
	0,-10
	1,-9
	2,-10
	2,-11

PART X	0,-10
	2,-10

PART XI	-2,-18
	-2,-14

PART XII	-3,5
	-3,6
	-2,7
	-1,6
	-1,5
	-2,6
	-3,5

