Using the Grid World

ACTIVITY 5.4.1

Using the Grid World

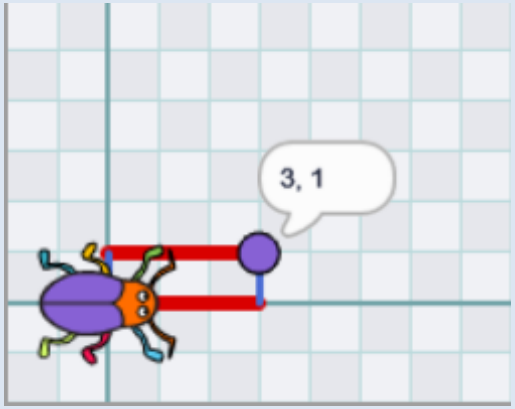
Exploring relationships *within* rectangles and *between* rectangles

Module 5: Investigation 4

Activity 5.4.1 – Using the Grid World

Use your final **53-Grid World** project, or the provided **53-Grid World FINAL** project.
Use the *grid 20* backdrop.

A is the **base** of the rectangle and B is the **height**.



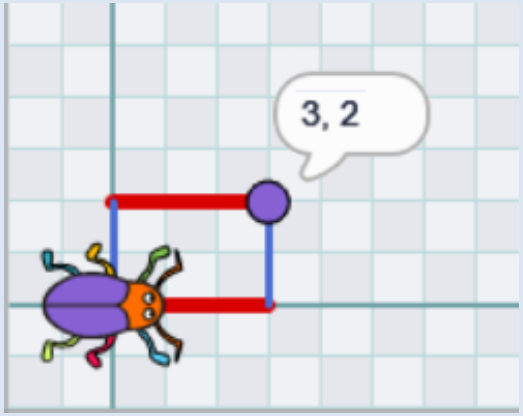
1. Draw a rectangle where A = 3 and B = 1.
2. Draw a rectangle where A = 6 and B = 2.
3. Add the magic line.
4. Explore and draw two more rectangles which fit on the magic line.
5. *Does the rectangle where A = 15 and B = 5 fit on the line? Can you explain your answer?*
6. *If A = 21, what is the value of B? Explain your answer.*
7. *If B = 10, what is the value of A? Explain your answer.*
8. Transfer your answers into the table on Worksheet 1 and complete the calculations.

Module 5: Investigation 4

Activity 5.4.1 – Using the Grid World

Use the *grid 20* backdrop.

A is the **base** of the rectangle and B is the **height**.



1. Construct a rectangle where A = 3 and B = 2.
2. Construct a rectangle where A = 6 and B = 4.
3. Add the magic line.
4. Explore and draw two more rectangles which fit on the magic line.
5. *Does the rectangle where A = 12 and B = 6 fit on the line? Can you explain your answer?*
6. *If A = 18, what is the value of B? Explain your answer.*
7. *If B = 10, what is the value of A? Explain your answer.*
8. Transfer you answers into the table on the Worksheet 2 and complete the calculations.

ACTIVITY 5.4.2

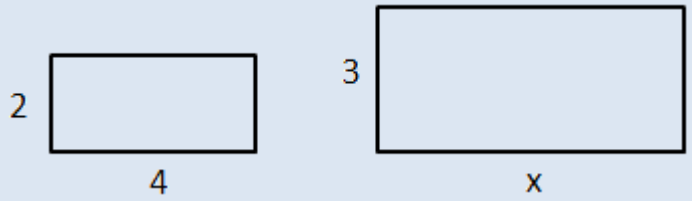
BridgEing And Solving Problems

Module 5: Investigation 4

Activity 5.4.2 – BridgEing And Solving Problems

Use the Grid World to solve the problems, draw diagrams and explain your working.

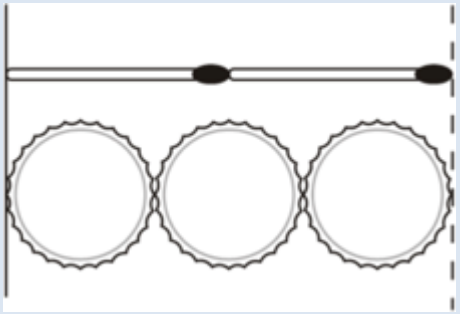
1 The two rectangles are proportional (mathematically similar) to one another.



Find length **x** and give a reason for your answer.

2 Two matchsticks have the same length as three bottle tops.

How many bottle tops will have the same length as 12 matchsticks?



3 Here is a picture of Mr. Short.

Mr Short is 4 buttons or 6 paperclips in height.

Mr Tall measures 6 buttons, how high is Mr Tall in paperclips?

Module 5: Investigation 4

Activity 5.4.2 – BridgEing And Solving Problems

4 Adam is making a spicy soup for 3 people. He uses 9ml of tabasco sauce.

a) Create a rectangle in the Grid World which has a **base** of 9 and a **height** of 3. Draw the magic line.

b) Davina is making the same soup for 6 people. How much tabasco sauce should she use?
[*Clue: Draw a rectangle which fits on the magic line and has a height of 6.*]

c) Find another solution that works (i.e. fits on the magic line).

d) What is the relationship between pairs of numbers?

e) If Matt is making the same soup for a large party of 30, how much tabasco would he need?

f) Tabasco is sold in 57ml bottles. How many people could be served the same spiciness of soup using one bottle?

Module 5: Investigation 4

My Investigation 4 check list:

- ☐ I constructed mathematically similar rectangles in the grid world.
- ☐ I used the "magic line" to find other mathematically similar rectangles.
- ☐ I have explored the relationship of the side lengths **within** a rectangle and **between** rectangles for mathematically similar rectangles.
- ☐ I can explain what it means when two rectangles are mathematically similar.
- ☐ I can solve problems which involve proportional relationships.