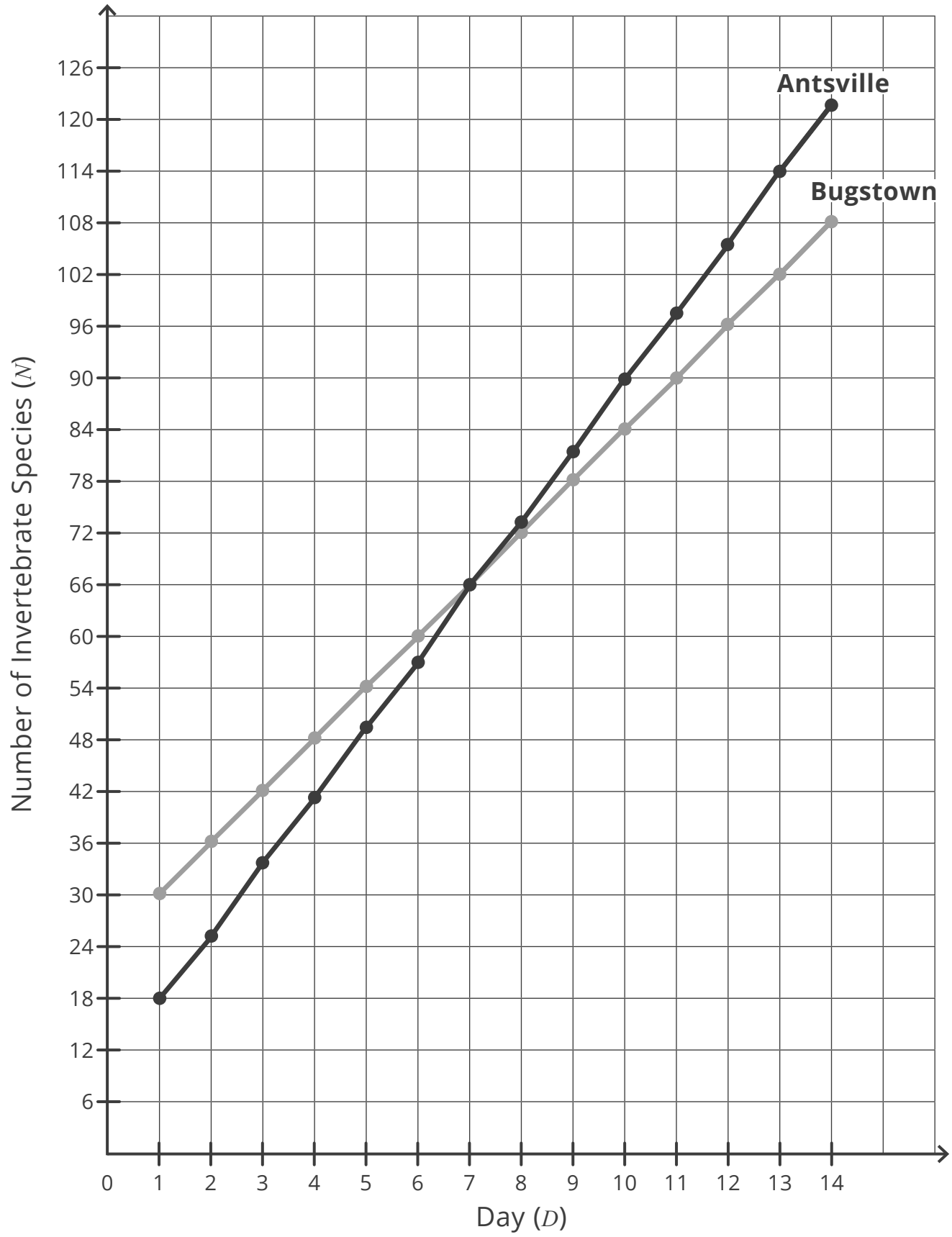
Soil Biodiversity: Linear Graphs Activity **Answers**

Question One

Plot the data points of Antsville on the set of axes below and draw a line through the points. Label this line 'Antsville'.



Question Two

Plot the data points of Bugstown on the same set of axes and draw a line through the points. Label this line 'Bugstown'.

Question Three

Describe the trends that you can see in the graphs.

From Day 1 to Day 7 Bugstown has the most invertebrate species. On Day 7 they contain an equal amount of invertebrate species. Beyond Day 7, Anstville soil contains the most invertebrate species.

Question Four

Derive a rule for the Antsville data where D represents the day and N represents the number of invertebrate species.

$N = 8D + 10$

Question Five

Derive a rule for the Bugstown data where D represents the day and N represents the number of invertebrate species.

$N = 6D + 24$

Question Six

Determine a solution (D, N) that is true for both of the Antsville and Bugstown equations. Show that it satisfies both equations.

(7, 66)

8(7) + 10 = 66

6(7) + 24 = 66

Question Seven

Deduce from the graph, the day where these two lines intersect. Explain what this means in terms of the data.

The two lines intersect at (7,66). This means that on Day 7, Antsville and Bugstown recorded the same number of invertebrate species (66).

Question Eight

Calculate the number of invertebrate species in the Anstville soil on Day 20 using your rule.

There will be 170 invertebrate species in Antsville on Day 20.

Question Nine

Using your rule, determine the day that Bugstown will have 114 invertebrate species living in the soil.

On Day 15, there will be 114 invertebrate species living in the soil.