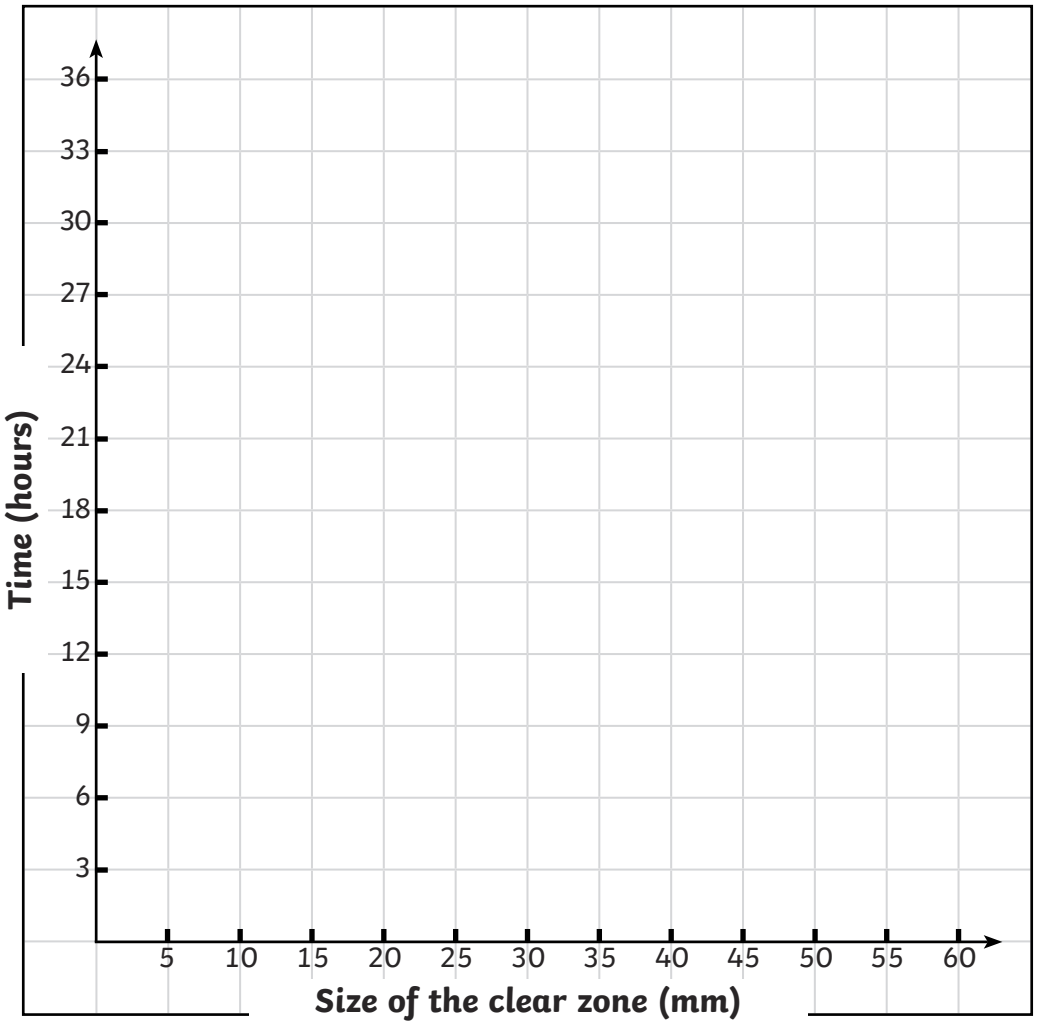
Penicillin Effects

To record and interpret data on the effects of penicillin using a scatter graph.

Scatter graphs are used to compare the correlation (relationship) between 2 sets of data. This table shows the results of an experiment in which a penicillin disc was placed in 3 different bacteria colonies, each colony measuring 100mm in diameter. As the penicillin discs kill the bacteria, a clear zone emerges around each disc. The diameter of the clear zones around the penicillin discs was measured every 3 hours.

Create a scatter graph using the results in the table to see if there is a correlation between the time the bacteria was exposed to the penicillin and the size of the clear zone around the penicillin.

Time	Size of the clear zone (mm)			Time	Size of the clear zone (mm)		
3 hours	0	0	5	21 hours	29	30	35
6 hours	6	4	8	24 hours	36	34	39
9 hours	10	9	13	27 hours	41	40	44
12 hours	15	12	17	30 hours	49	45	50
15 hours	21	20	24	33 hours	53	49	57
18 hours	25	28	31	36 hours	60	53	64



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To record and interpret data on the effects of penicillin using a scatter graph.

Answer these questions about your graph.

1. Which of these conclusions is supported by the graph?

   Penicillin kills all bacteria.

   The longer bacteria is exposed to penicillin, the more of it dies off.

   Penicillin kills most bacteria in the first 12 hours.

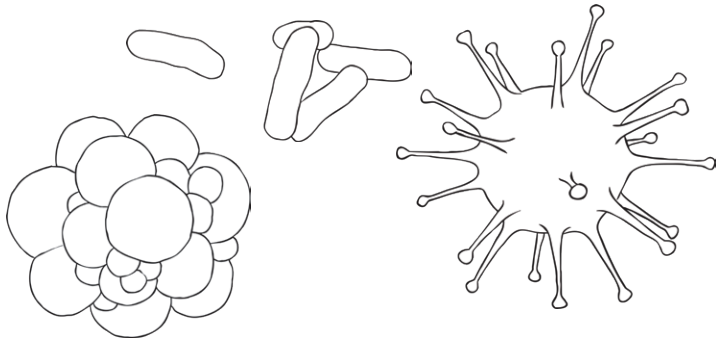
   It takes 36 hours for penicillin to kill bacteria.

2. How long do you predict it would take for the penicillin to kill all the bacteria in the colony? Remember, the original bacteria colony measured 100mm.

3. Describe the effect of penicillin on bacteria using the results shown in your graph.

You may want to use these words in your answer:

penicillin	kills	bacteria	time	more



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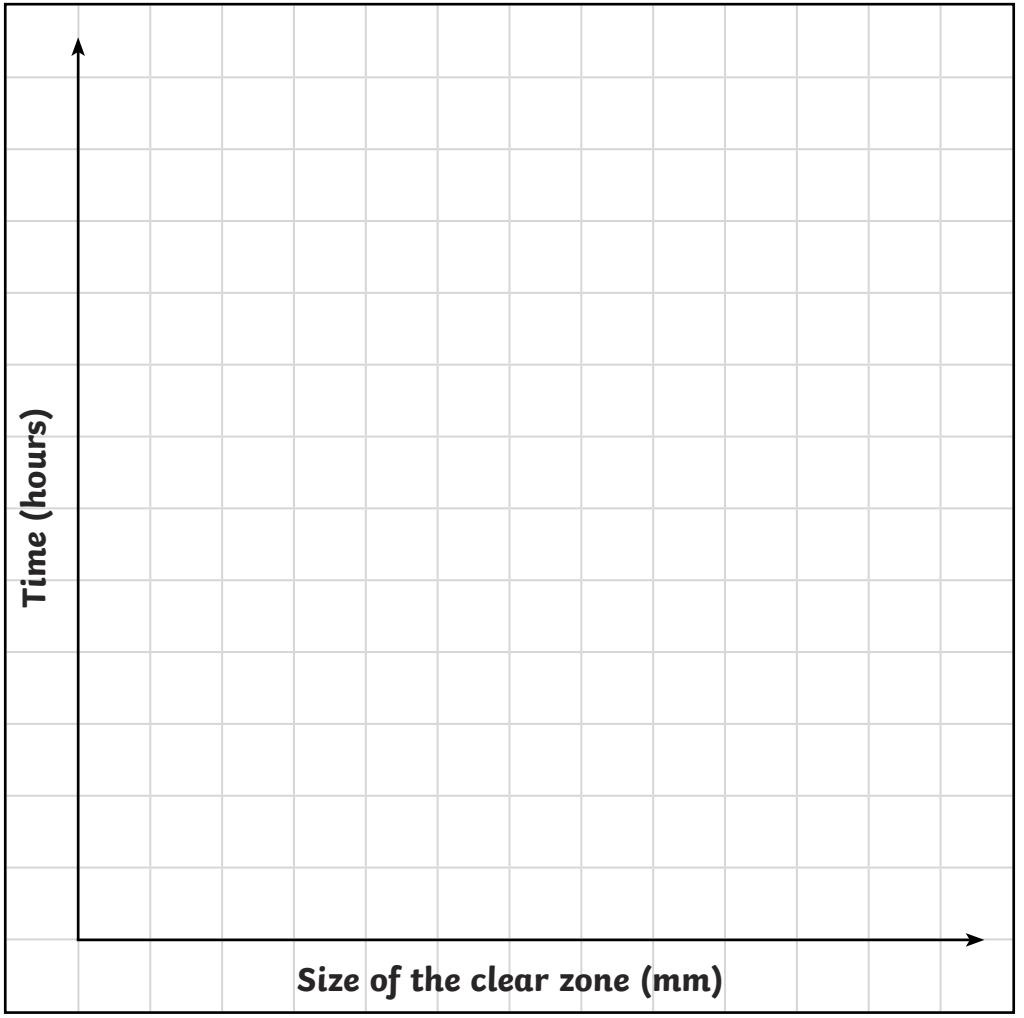

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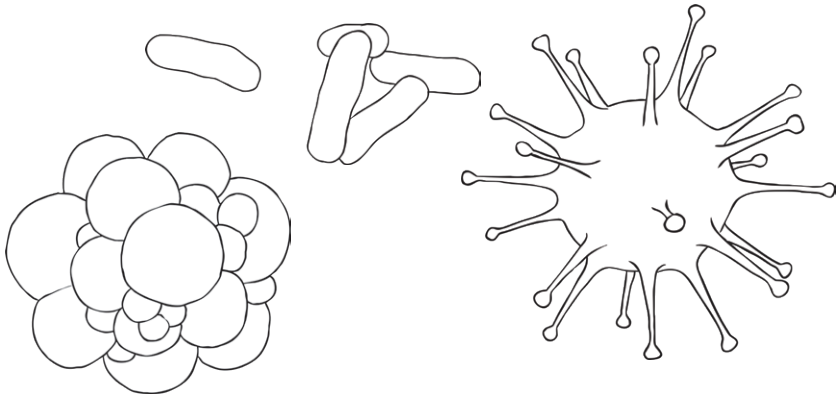

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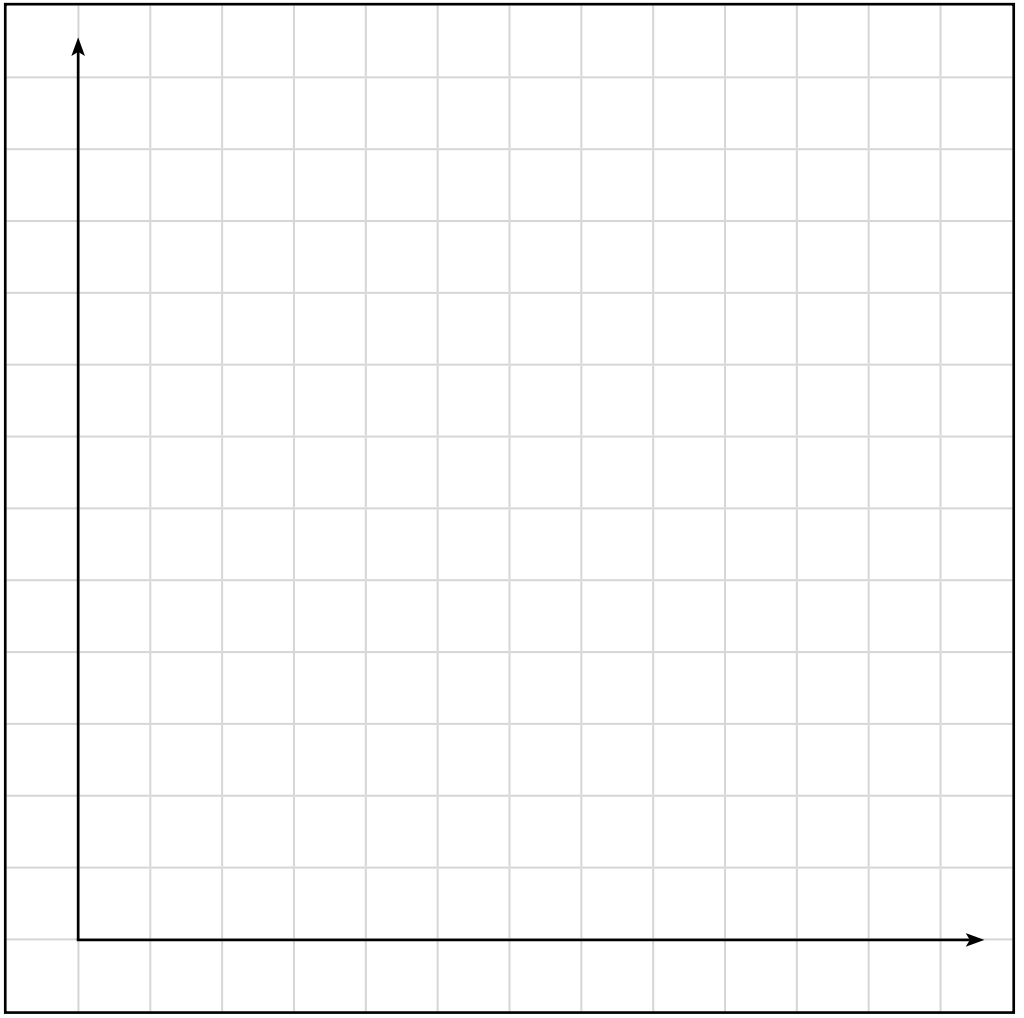

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