

Name: _____

My target level is

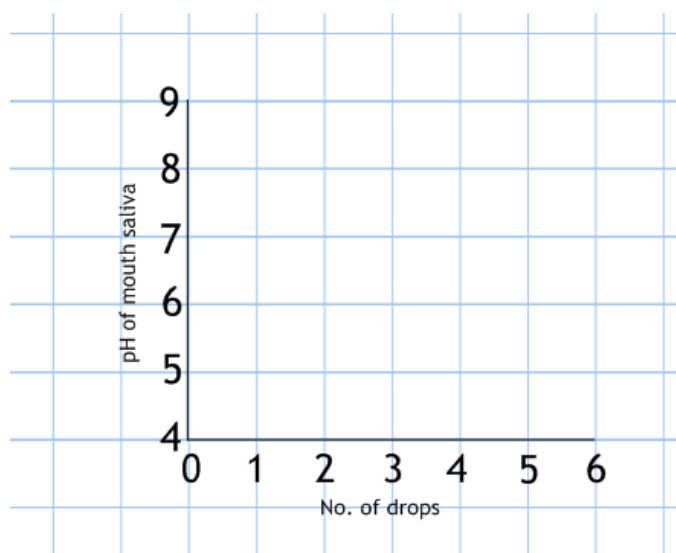
Materials HSW HW2 - Neutralisation

A group of 4 students were investigating which brand of toothpaste is the best at neutralising acid. Each student tested a different brand of toothpaste.

Jane tested 'Shiny whites' toothpaste by adding 1 drop of toothpaste at a time to the saliva sample and seeing how the pH changed. Her results are as follows:

Number of drops of toothpaste	pH of the saliva
0	4
1	5
2	6
3	7
4	8
5	9

1) Plot Jane's results for the 'Shiny whites' toothpaste below:



(2)

2) How many drops of 'Shiny white' were needed to neutralise the saliva? _____ (1)

3) Name the 2 products that are produced from neutralisation reactions such as this one.

_____ (2)

Jane compared her results with the other students in her group. They collated their results as shown below:

Toothpaste brand	Number of drops needed to neutralise the saliva
Teethcleanz	1
Big smile	4
Yellowaway	10
Shiny whites	?

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4) Plot the student's data as a bar chart on the grid below:



(4)

5) Which toothpaste brand is the best at neutralising the acid? _____ (1)

6) Which toothpaste contains the weakest alkali? _____ (1)

7) Why do toothpastes not have a 'caustic' warning sign on them?
_____ (1)

8) Tom thinks that their test may be unreliable because each student did not keep all the variables the same. Name one variable that they would need to keep the same: (1)

9) Bob concludes: 'Yellowaway is the worst toothpaste'. Explain why this not a good scientific conclusion: _____ (1)

10) Write a conclusion for the students experiment:

_____ (1)

Score /15

level

0

N

1-3

3

Mark /15

Level =

4-7

4

8-10

5

11-15

6