

Combined Science - Biology - Key stage 4

# Maths Skills

Miss Todd



# Independent Practice

<u>Antibiotic</u>	<u>Clear zone diameter (mm)</u>				<u>Average diameter (mm)</u>	<u>Area of clear zone (mm<sup>2</sup>)</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>		
<b>Amoxicillin</b>	27	26	37	25	26	
<b>Erythromycin</b>	13	13	17	12	13	
<b>Penicillin</b>	23	21	20	21	21	
<b>Streptomycin</b>	4	5	7	5		
<b>Vancomycin</b>	16	16	15	16		

Find the mean clear zone diameter for streptomycin and vancomycin

Check for anomalies!



# Independent Practice

<u>Antibiotic</u>	<u>Clear zone diameter (mm)</u>				<u>Average diameter (mm)</u>	<u>Area of clear zone (mm<sup>2</sup>)</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>		
<b>Amoxicillin</b>	27	26	37	25	26	531
<b>Erythromycin</b>	13	13	17	12	13	133
<b>Penicillin</b>	23	21	20	21	21	346
<b>Streptomycin</b>	4	5	7	5	5	
<b>Vancomycin</b>	16	16	15	16	16	

**Find the area of the streptomycin and vancomycin clear zones.**

Half the diameter to find radius

$$\text{Area} = \pi r^2$$

Use 3.14 if you don't have  $\pi$  button



# Conclusion

<u>Antibiotic</u>	<u>Clear zone diameter (mm)</u>				<u>Average diameter (mm)</u>	<u>Area of clear zone (mm<sup>2</sup>)</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>		
<b>Amoxicillin</b>	27	26	37	25	26	531
<b>Erythromycin</b>	13	13	17	12	13	133
<b>Penicillin</b>	23	21	20	21	21	346
<b>Streptomycin</b>	4	5	7	5	5	20
<b>Vancomycin</b>	16	16	15	16	16	201

Which antibiotic would be best to use to treat the ear infection? (2)

Use your clear zone data to back this up.

**The best antibiotics for treating ear infections is..... because.....**



# Independent Practice

The table shows the number of cases of HIV in the UK, between 2014 and 2018

<b>Year</b>	<b>Total number of cases</b>
2014	6,278
2015	6,271
2016	5,369
2017	4,761
2018	4,453

Figures from Public Health England

1. Calculate the percentage decrease in cases from 2014 to 2016 (3)
2. Calculate the percentage decrease in cases from 2017 to 2018 (3)
3. Calculate the percentage decrease in cases from 2016 to 2018 (3)



# Independent Practice

The table shows the total number of cases of gonorrhoea in the uk, between 2013 and 2017.

Year	Total number of cases
2013	31,201
2014	37,172
2015	41,382
2016	36,557
2017	44,812

Figures from Public Health England

1. Find the percentage increase in cases from 2013 to 2015 (3)
2. Find the percentage increase in cases from 2014 to 2017 (3)
3. Find the percentage decrease in cases from 2014 to 2016 (3)

