**Biology Revision: Investigating Bacteria**

Mastery Matrix Points TRIPLE ONLY

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| Explain how bacterial cells multiply (triple only) |
| Calculate the number of bacteria in a culture given the *‘mean division time’* (triple only) |
| Explain how to grow bacteria in nutrient broth and on agar gel plates (triple) |
| Calculate the cross-sectional and clears around colonies using  Area = πr2 (triple) |
| Explain how to prepare an uncontaminated culture (triple only) |
| Explain why there is a maximum incubation period when preparing a culture (triple) |
| (Required practical) Investigating the effects of antiseptics or antibiotics on bacterial growth (triple only) |

Key Knowledge

Binary fission –

Uncontaminated –

Clear zone -

Bacteria divide about every \_\_\_ minutes, if they have enough \_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_ is suitable.

Bacteria can be grown in either

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Equations

Area of circle =

Number of bacteria =

**Cells**

Understanding and Explaining

1. Describe how to prepare an uncontaminated culture of e-coli bacteria using aseptic technique.
2. Describe why in schools bacteria are incubated at 25⁰C.
3. Describe how to sterilise an inoculating loop. Why is this important?
4. How can plastic equipment be sterilised?
5. Why are the petri dishes secured with sellotape, but allowing some air to get in?
6. Write a method of how to investigate the effect of 4 different antibiotics on e-coli bacteria.