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| **Reproduction****lessons** | **Extension task 1** | **Extension task 2** | **Extension task 3** |
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| A species of bacteria divides once every hour. Calculate how many bacteria there are after 24 hours. |

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| Research into an organism that uses both sexual and asexual reproduction. Explain why it uses both. |

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| Describe the benefits and drawbacks of each method of reproduction. |

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| 2 | Predict how the pollen of insect- and wind-pollinated flowers may be different. Look up some electron microscope images of pollen from different plants. | Research the bee orchid and the titan arum plant. Find an image of the flower on each plant and explain what insects pollinate each and how they are adapted for pollination. | Discuss the advantages and disadvantages of cross and self-pollination. |
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|  Research and describe the set up the pollen tube slides.  |

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|  Write a plan to investigate how the concentration of sugar solution affects the growth of pollen tubes.  |

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|  Describe the fact that the stigma is coated in sugar solution that is thought to promote the growth of the pollen tube. Use this information to think about why pollen tubes only grow when the pollen lands on a flower of the same species.  |

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| 4 | Use the class data from the cress experiment to plot a suitable chart (number of cress seeds in the dish versus height of seedlings). | Complete the practical by completing the 'Analysing results’, 'Evaluating the practical' and ‘Writing a conclusion' parts. | Relate your knowledge of seed dispersal mechanisms to different habitats and environments, including by predicting which mechanisms will be most effective in different environments. |
| 5 | Describe the process of IVF including costings. | Think like fertility doctors. A couple having difficulty getting pregnant visits them. Write an explanation to the couple of some reasons why they may be less fertile, and suggest how a treatment might help them have a baby. | Discuss the function of the scrotum (i.e. to keep the testes away from the body because sperm production is better at lower temperatures). |
| 6 | The head of the sperm contains enzymes to break through the cell membrane of the egg.How are identical and non-identical twins are formed. | Complete a piece of creative writing called 'a sperm's journey'. This should be written from the point of view of a sperm cell and its journey to the egg. | Use the terms 'haploid' and 'diploid' and explain that sperm and eggs are produced by meiosis. |
| 7 | Draw a menstrual cycle chart.Add the timings for the release of these hormones to the diagram.  | Describe the hormones involved in the menstrual cycle. | Describe how the contraceptive pill prevents ovulation and at which times in the cycle such pills should be taken. |
| 8 | Describe what we mean by a premature baby (i.e. one that is born before 34 weeks) and how the incubator is vital for its survival.  | Draw a diagram to show the development of a foetus. Label and explain the different developmental stages of a foetus. | Explain how the mother's and foetus's blood are kept separate in the umbilical cord. |
| 9 | Explain why a mother stopping smoking is helpful for the growth of her baby.  |  Create an information leaflet for pregnant women on 'how to have a healthy pregnancy', including data in the form of tables and charts. | Discuss how antibodies from the mother can pass to the foetus across the placenta and help build immunity in the baby. |
| 10 | Research what triggers birth  | Carry out research and state what theories we have as to how birth is triggered. They should comment on the available evidence for each theory. | Describe how an epidural works.  |
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