Subject	Human Biology Level 3
Context / relevance	You have been provided with a Human Biology bridging work booklet. This booklet has been designed to help you secure and process your knowledge of core biological concepts and scientific skills needed throughout the course. There is an expectation that you will complete the Securing and Processing tasks (section A and B) of the work booklet. Please be aware that you will sit a baseline assessment in your first human biology lesson. This assessment will cover GCSE content only. Those of you who have entered the course from a combined pathway (synergy or trilogy) there is information in the reviewing section you may want to familiarise yourself with prior to starting the course.
Securing	Complete Section A of the bridging work booklet. You must complete all 7 activities which secure your understanding of core concepts across the human biology course and are transferable skills for the course.
Processing	Complete Section B of the bridging work booklet. **Part 1** 1. Watch the video about Vital Signs 2. For the following Vital Signs: ➢ Blood Pressure ➢ Heart Rate ➢ Breathing Rate (respirations) ➢ Temperature ➢ Blood Oxygen Saturation For each vital sign make sure your notes include: 1. Equipment used to carry out the test. 2. Basic method on how the test is carried out. 3. Image of patient having the test carried out. 4. Unit of measurement e.g. heart rate – beats per minute. 5. State normal reference range. Vital Signs (youtube.com) https://www.youtube.com/watch?v=gUWJ-6nL5-8 **Part 2 -Evaluating an investigation.** Key features of an A grade student's work, the level of detail and criticism that they can apply when evaluating their own practical procedures or those of others. Consider the following scenario: Some students investigated the effect of the Bt toxin on insect pests that feed on maize plants. They divided the field into 3 plots and planted the following: *Plot 1 – untreated maize seedlings* *Plot 2 – seedlings genetically modified to produce the Bt toxin that kills insect pests.* *Plot 3 – seedlings sprayed with Bt toxin every week.* Each week a different student counted the number of seedlings that had died in each plot. The teacher was concerned about the investigation and suggested that a) the method may not be very valid b) not all of the variables have been controlled c) the results may not be accurate.

<table>
<tr><td></td><td>To do:
Explain why the teacher's concerns are justified and suggest improvements to the investigation. a). Why is the method not valid? What are your suggestions for improvement?
b). Which variables have not been controlled? How could you suggest overcoming this?
c). Why may the results not be valid? What are your suggested improvements?
Use this resource if you need some prompts;
https://www.bbc.co.uk/bitesize/topics/zr8wfdm/watch/z9hsdnb
You can also use any other research sources and materials you wish.</td></tr>
<tr><td>Exploring</td><td>Optional- complete Section C
DNA and the Genetic Code In living organisms' nucleic acids (DNA and RNA have important roles and functions related to their properties. The sequence of bases in the DNA molecule determines the structure of proteins, including enzymes. The double helix and its four bases store the information that is passed from generation to generation. The sequence of the base pairs' adenine, thymine, cytosine and guanine tell ribosomes in the cytoplasm how to construct amino acids into polypeptides and produce every characteristic we see. DNA can mutate leading to diseases including cancer and sometimes anomalies in the genetic code are passed from parents to babies in disease such as cystic fibrosis,or can be developed in unborn foetuses such as Downs Syndrome.
Read the information on these websites (you could make more Cornell notes if you wish):
http://www.bbc.co.uk/education/guides/z36mmp3/revision
http://www.s-cool.co.uk/a-level/biology/dna-and-genetic-code
And take a look at these videos:
http://ed.ted.com/lessons/the-twisting-tale-of-dna-judith-hauck
http://ed.ted.com/lessons/where-do-genes-come-from-carl-zimmer
<u>Task:</u>
Produce a wall display to put up in your classroom in September. You might make a poster or do this using PowerPoint or similar
Your display should use images, keywords and simple explanations to:
Define gene, chromosome, DNA and base pair
Describe the structure and function of DNA and RNA
Explain how DNA is copied in the body
Outline some of the problems that occur with DNA replication and what the consequences of this might be.</td></tr>
<tr><td>Reviewing</td><td>If you have entered the course from the combined pathway (trilogy or synergy) you may need to review the following topics;

<table>
<tr><th>Topics</th><th>Trilogy</th><th>Separate</th></tr>
<tr><td>Thermoregulation</td><td>X</td><td>  </td></tr>
<tr><td>Advanced Genetics and gene expression</td><td>X</td><td>  </td></tr>
<tr><td>Biotechnology</td><td>X</td><td>  </td></tr>
<tr><td>Reproduction hormones and IVF</td><td>Basic</td><td>In-depth</td></tr>
<tr><td>Genetic Engineering and Cloning</td><td>Limited</td><td>Detailed</td></tr>
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	Please use the following websites to support your understanding; https://www.bbc.co.uk/bitesize/examspecs/zpgcbk7 https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/ Complete the 10min test booklet and review your results and provide evidence of how you have addressed your weaknesses; mindmaps/practice questions/flashcards. **Massive Open Online Courses (MOOCs)** You might enrol on these online courses and complete the following to push you a little further (this is optional). These courses are a fantastic addition to your UCAS: HarvardX: Cell Biology: AdelaideX: Essential Human Biology: Cells and Tissues | edX StanfordOnline: Introduction To Food & Health | edX