Human Biology Transition

Coursework Prep Tasks:

Write out in full prose the following topics. Please use the internet to research.

This needs to be in your own words.

	First check	Proof reading
Draw the main features of the different types of microorganism using a named example from each of the subgroups (prokaryotes, protists, fungi, viruses and prions)		
State roles of all of the structures found in bacteria, viruses and protists on diagrams		
Analyse the classification methods for bacteria e.g pros and cons for different methods		
Explain the Baltimore system of classification of viruses and explain how each subgroup is different in their mode of infectivity		
Analyse why we classify bacteria and viruses based on features such as nucleic acid content and shape in viruses and morphology, staining properties of the organism, as well as oxygen requirements in bacteria.		
Growth and virulence of bacterias in terms of cell division, oxygen requirements and temperature factors.		
Growth and virulence of viruses in terms of cell division(latent and lytic), oxygen requirements and temperature factors.		
Explain the factors that affect the growth of microorganisms		

Content Prep Tasks:

Draw the General structure and function of biological molecules:

o carbohydrates

o proteins, to include primary, secondary, tertiary and quaternary structures of globular and fibrous proteins

o triglycerides

o glycoproteins

o high density lipoproteins (HDLs) and low density lipoproteins (LDLs).

o deoxyribonucleic acid (DNA)

o ribonucleic acid (RNA), to include messenger RNA (mRNA), transfer RNA (tRNA) and short interfering RNA (siRNA)

o adenosine triphosphate (ATP) o collagen.

List the function of the following:

You need to include the function/structure and small diagram→

1. Nucleus
2. Nucleolus
3. Ribosomes
4. Rough endoplasmic reticulum
5. Smooth endoplasmic reticulum
6. Mitochondria
7. Centrioles
8. Lysosomes
9. Golgi apparatus
10. Cytoskeleton
11. Cell wall
12. Chloroplasts
13. Vacuole
14. Tonoplast

Suggested reading:

Genetics

- The Serpent's Promise. Jones, S
- In the blood. Jones, S.
- Y: the Descent of Men. Jones, S.
- Genome. Ridley, M.

Evolution

- The Selfish Gene. Dawkins, R.
- The Blind Watchmaker. Dawkins, R.
- Wonderful Life. Gould, SJ.
- Trilobite. Fortey, RA.
- The Rise and fall of the Third Chimpanzee. Diamond, J.
- The Ancestor's Tale. Dawkins, R.
- The Thinking Ape: Evolutionary Origins of Intelligence. Byrne, R.

Physiology

- Why Elephants Have Big Ears. Lavers, C.
- The Energy of Life. Brown, G.
- Keep on Running. Newcastle Leech Duester
- Oxygen. Lane, N.
- Immunology: A Comparative Approach. Turner RJ
- Friendly Fire: Explaining Auto-immune disease. Isenerg, E.

Neuroscience/Psychology

- The Man Who Mistook His Wife for a Hat. Sacks, O.

Microbiology

- Missing microbes: Martin Blaser
- Gut: The inside story of the body's most underrated organ: Guilia Enders

Suggested education visits:

- Science museum
- Natural history museum
- Wellcome collection
- St Bartholomew's Hospital museum