L3 HUMAN EVOLUTION
CHEAT SHEET

STUDY TIME

ABOUT THE STANDARD

- This standard boils down to one key idea: trends - how things have changed over time. Hence, it will pay for you to know the key changes – biological and cultural, that have occurred over the different species.
- Typically, every year, the content you are taught, comes down to three questions;
  - Biological Evolution
  - Cultural Evolution
  - Dispersal Theories

BIOLOGICAL EVOLUTION

- Biological evolution is all about those changes across species that have been inherited. When we answer questions about Biological Evolution trends we must be thinking of a few things:
  1. What are the trends?
  2. What prompted those trends?
  3. What evidence supports it?
  4. What adaptive advantage did it provide the species?
- There are key biological trends to think about:
  1. Bipedalism – this one always comes up so make sure you know about it
  2. C-shaped spine to S-shaped spine
  3. Skull changes
  4. Pelvis size and shape
  5. Feet and toes
- Overall, biological evolution is a tough one but if you study it the right way, you will be fine. We suggest you use TEEE column charts:
  - T - trends
  - E - explanation
  - E - evidence
  - E - excellence ideas
  - By studying biological evolution this way, you get to see how each trend occurred, what evidence there is to support it and why it is significant. This way you're able to demonstrate higher level thinking in your exams and that means better grades.

CULTURAL EVOLUTION

- Cultural evolution is all about those changes across species that have been taught and transmitted. It is not just about tools. It is about the use of fire, agriculture, animal domestication and burial.
- However, knowing the tools will probably be the most important thing for you. Instead of just knowing the

different names of the tools, provide other information in your answers. Think about how over time, the ways the tools were made changed, think about how the advanced-ness of each tool group increased and most importantly, think about how they impacted biological evolution.

- Showing how cultural elements impact biology demonstrates higher level thinking and again, this gives us better grades.

DISPERSAL THEORIES

- Dispersal theory is all about answering the question: how did the human species colonise the world?
- There are two main theories for this:
  - Multi-regional – this theory is all about saying humans left Africa as homo erectus and evolved at the same rate, across different areas of the world, with gene flow between the different populations still happening.
  - Out of Africa – this theory is all about saying SOME, but not all, homo erectus' left Africa and evolved into Neanderthals, all around the world. However, those homo erectus that stayed in Africa evolved into homo sapiens that then left Africa 100,000 years ago to outcompete and make extinct, the Neanderthals.
- Because there are only two dispersal theories here, NCEA will ask you to tell them which one you think is correct and to do this, you have to justify your answer. To justify an answer you need to do a few things:
  1. You need to explain the dispersal theory
  2. You need to provide evidence. This is important; NCEA have no reason to believe your and my ideas. But, they have to believe us when we provide evidence.

BIPEDALISM

- Bipedalism is always in the exam. Make sure you know about it. Think about what evidences there are to support this change in locomotion? How is it significant? How was it caused?
  - When talking about bipedalism, you have the perfect opportunity to discuss the excellence ideas of adaptive advantage and positive feedback:
  - Adaptive advantage is saying how an adaptation gave humans an advantage over others!
  - Positive feedback is saying how one positive thing led to another positive thing that led to another positive thing to give us an advantage over others! For example, Bipedalism meant we were free to use our hands to build tools. Building tools meant that we had the capacity to start fires by banging two rocks together. This means that we had the ability to cook. This means we had the ability to have an increased calorie diet. This increased the energy we had. This increased the ability to outcompete other species and exploit ecological niches. This increased our access to mates and food. This allowed us more opportunity to have more offspring and this fulfils purpose of life, biologically speaking.
  - Make sure you do not just identify the benefit or positive feedback. You need to comprehensively explain it. Also, if you see the opportunity to link an advantage that biological or cultural evolution gave us to increased reproductive success, then do so! In biology the more offspring you have, the more successful you are considered. So if there are any things that could increase the likely-hood of those hominins giving birth to more children, it is a benefit and you should talk about it.

STRATEGIES FOR SUCCESS - ANSWERING THE QUESTIONS

- Remember to always give definitions. If you look at the schedules, they will always give you achieved for these.
- Instead of just describing something, explain HOW and WHY the things they have asked you about occur. For example; HOW did the change in locomotion from quadrupedalism to bipedalism occur – think of the skeletal and skull changes. You must also answer the WHY! What environmental, genetic or other factors promoted this biological change? For Biology, think of an increased access to food, protection from predators and environmental factors.
- Also you have to apply what you know, to the scenario they give you! Mention the key dates they gave you, maybe there is a species name in the scenario that you can use. Any link, big or small that you make with the resource material, will be good for you!
- Lastly, when answering a question, you should be discussing the adaptive advantages or positive feedback that this change could provide! To get excellence you must include the ideas of positive feedback and adaptive advantage.
- You need to be explicit and not assume the examiner knows the links you are making. Sometimes it's the explicit nature of your writing that makes all the difference between Merit and an Excellence.

OVERALL ADVICE

- Know your trends, what prompted them and why they have survived as remnants of natural selection.
- Write more explicitly and always work from basic definitions to explanations to those more tricky excellence ideas.
- Of course we have not covered everything in here so it might pay for you to check out our study guides and other online resources.