**Body Systems, VR and Minecraft**

***Overview***

*In groups of three students, create a diorama (3D representation) using Minecraft of some part (organ or organ system) of the human body that is responsible for sensing and responding to the environment (internal or external).*

*This will represent a substantial body of work that thoroughly demonstrates your group's understanding of the structure and function of the selected organ or organ system. It should aim to both inform and engage other Year 9 students and your teacher.*

*The final audience will be another group of students, and will be experienced in VR (virtual reality) – Oculus Rift. The look and feel of the presentation will be very different when experienced in VR, compared to playing on a console, tablet or PC/laptop. Groups will be required to do some planning and evaluation of their own diorama in VR before the final audience experiences it, so that it is optimised for VR viewing (immerses the audience).*

*A 3-minute commentated video will also be created by each group.*

***Instructions***

1. Form groups of three. Allocate roles for each of the group members. Responsibilities may include research, server hosting, building, annotating (placing signs on parts, labelling structures or functions), team leading, VR video commentating, artistic directing and redstone circuit designing. NOTE: Each team member may have multiple responsibilities and could also share responsibilities.
2. Choose an organ system (e.g. nervous system, endocrine system) or a smaller part of an organ system (such as an organ or group of organs and tissues).
3. Research the subject of your group's diorama thoroughly. Decide which aspects of the research will be included in your diorama.
4. Create a Minecraft world that will be the server for your group's project. This should be done in Minecraft Windows 10 Edition or Minecraft Pocket Edition (These are the only versions that will be able to network with the version used by Oculus Rift). Ensure that the version used by your group is the same as the version used by Oculus Rift for VR. Other group members join the world in Multiplayer mode.
5. Build a diorama. Ensure all structures are labelled and all functions explained (signs would be useful for this purpose). Consider presentation concepts such as linear (visitors must follow a path) and freeform (visitors can go anywhere, maybe even fly). Be innovative and creative. Create new or unexpected features.
6. VR testing. Each group will have 4 VR sessions, lasting about 15 minutes each:

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| Session 1 – Become familiar with Minecraft in Oculus Rift. No building. Learn to use the touch controls and get around. Learn how to build. |
| Session 2 – Test diorama in VR. Evaluate whether it is fit for the intended audience. Decide what will be edited before the next VR session. |
| Session 3 – Record 3-minute commentated video of diorama. Press 'Windows Button' + 'G' in game to start recording. |
| Session 4 – Observe another group's diorama. Provide warm/cool feedback. |