**Mike Mountain Horse Unit Plan**

**“Exploring the World Virtually, and the Virtual Tangibly”**

**Subject:** Art, CTS, Social, Science

**Grade:** 4

**Unit/Topic:** VR experiences and 3d modelling

**Date and Unit Duration:** March 7th start, 5 classes.

**Project Overview Description and link to student engagement (rationale):**

This unit will begin with guided experiences in virtual reality. In so doing the student will be able to go places they normally cannot, like the space station, and learn from these experiences. These experiences will be tied to subjects ranging from science to social studies, primarily through the use of Google Expeditions. Once these learning experiences have been conducted, the student will create a 3d designs using 123design (or another application) and then view these completed creations in VR with sketchfab. The use of VR takes a virtual object created and allows for conceptualizing the creation. Finally, once the object is finished and viewed in 3d, it will be printed to complete the cycle from tangible to virtual, and back again.

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| **1. Unit Overview – Critical Inquiry Question** |
| What components of the virtual world can we interact with physically, and how can we interact virtually with learning experiences we could not feasibly interact with physically? |
| 2. General Learning Outcomes for Unit |
| **Social**: Students will demonstrate an understanding and appreciation of how elements of physical geography, climate, geology and paleontology are integral to the landscapes and environment of Alberta.  **CTF**: CTF is exploring interests, passions and skills while making personal connections to career possibilities. CTF is working independently and with others while exploring careers and technology.  **Science**: Identify patterns and order in objects and events studied; and record observations, using pictures, words and charts, with guidance in the construction of charts; and make predictions and generalizations, based on observations.  **Art**: Employ technological media techniques, practices and capabilities to promote art understanding and create designs and compositions. |
| 3. Focusing Questions for Unit (Related Questions) |
| I wonder…   * What are the most effective ways to guide a virtual tour? * What can we learn through VR we cannot learn from a textbook? * How can I help a student to overcome the learning curve of 3d design? * What value is added when interacting with 3d objects in VR and when 3d printed? |
| 4. Key Concepts for Unit |
| * Inquiry (through google expeditions) * Creative Thinking (3d design) * Problem solving (problems inevitably arising during 3d modelling) * Managing information (3d design and VR experiences) * Cultural and Global Citizenship (google expeditions trips to other parts of the world) |
| 5. Specific Learning Outcomes for Unit |
| * I make decisions in response to challenges. * I create products, performances or services in response to challenges. * I communicate my learning. * I determine how my actions affect learning. |

**Detailed Visual Organizer of Unit Lessons and Assessment**

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| **Dates/Topics** | **Outcome** | **Learning Activities** | **Assessment**\*\* |
| March 7th | * TSW be familiarized with google expeditions and complete at least one expedition in VR. | * Pre-experience prep * Questioning during expeditions * Post-experience debrief | * Questioning showing engagement and learning, guided by teacher resources. |
| March 9th | * TSW engage with video VR experiences. | * Pre-experience prep * Questioning during expeditions * Post-experience debrief * Brainstorming 3d design | * Questioning showing engagement and learning, guided by teacher resources. |
| March 14th | * TSW begin creating a 3d object virtually | * Planning * Usage of 123design | * Did the student create a 3d object? |
| March 16th | * TSW finish creating a 3d object virtually, and view it in VR. | * Usage of 123desing * Uploading and viewing in skecthfab | * What does viewing it in 3d reveal? |
| March 21st | * TSW appreciate the 3d printed object * Remaining time to be used on educational VR experiences of student’s choice | * (I shall arrange for 3d printing, or have it done for final day.) * Interact with the 3d printed object | * What does viewing the object once 3d printed reveal? |

**Sponge Activity:**

As a sponge activity, there will always be more VR experiences to undertake. Alternately, the 3d design could be modified for 3d printing.

**Resources**

1. Ipad with Google Expeditions Installed
2. Smartphone(s) capable of running VR software and viewing Sketchfab
3. Google Cardboard or equivalent
4. Computer with ability to run 3d software, such as 123design
5. Access to local wifi connection or personal hotspot
6. Alberta POS
7. Tables to work at