**Advanced Virtual Reality Activities for SHSM Programs**

**Focus on *Oculus Quest 2***

***Please Note - It is the teachers responsibility to ensure that the technology and applications outlined in this resource are approved by their School Board.***

**Introduction:** Virtual Reality (VR) training is quickly becoming a widely used tool among post-secondary institutions and career sectors. For our SHSM programs, these VR tools can be used to supplement Reach Ahead experiences, Experiential Learning, and certifications.

**Materials Needed:** This page is dedicated to an overview of free resources for the Oculus Quest 2. This device is marketed as an all-in-one device, so it does not require a link to a computer, unlike the Oculus Rift. This makes the Quest 2 more reliable for educators who do not have access to a gaming PC.

Oculus is owned by Facebook, so teachers will need to use a Facebook account to log in for the app. It is possible to make a separate account for your Oculus Quest 2 instead of using a personal Facebook account.

Oculus will be releasing a new 128 GB device for $300 starting August 24th, 2021. Although it would be expensive to have each student have their own Oculus Device, you can purchase a Chromecast for $37 per unit to cast your Oculus to. This could allow you to have the class see what is happening in the Oculus or make a station activity using the Oculus Quest 2.

Some apps will not appear if you search for them in the Oculus Store. Instead, you will need to find the URL link for the specific one (those will be included in their reviews). A website such as <https://oculusapplab.com/> will have an inventory of apps that are not searchable. A direct link is included for each app listed on this page.

**Health Warning:** Educators and students using Oculus Quest 2 headsets might find these experiences disorienting, nauseating, and/or may have headaches with extended use.

You will also need to either have an open space or see if the apps you use can be used in a stationary position. When the Oculus Quest activiates, it has its users draw a “guardian” wall. What this means is that the Oculus can “see” the room the user is in, and it will make a “fence” in a particular part of the room. If the user moves past the “fence”, the app visuals will disappear and the user will be warned to move back into the playing area. There is an option for the Oculus to be told that the person will be sitting instead.

**Free VR Experiences with Oculus Quest**

On this page, you will find a list of experiences that can be experienced on the Oculus Quest at no additional fee. Each of these are ranked out of five star rating, which is based on the amount and richness of content, user friendliness, and app support. Experiences from the YouTube VR and Within VR apps are not mentioned on this page because they don’t require an Oculus Headset to be used.

[1. Gravity Sketch](#_m1l8m8juta6o)

[2. EON-XR](#_ysev2m7xi6vr)

[3. Digital Engineering and Magic Demos](#_idl5t2pqtf7g)

[4. Felix and Paul Studios](#_62j6piq2lb2f)

[5. Turbulent Sky (on Oculus Web Browser)](#_68b01twzztms)

[6. Pollinator AIR](#_1g1rf09r4s2f)

[7. Adam Savage’s Tested VR](#_7p25kr4gzn67)

[8. Trent University Medical Scenarios (on Oculus Web Browser)](#_xtn1bcglhlns)

[9. MIssion ISS](#_xs7u06x6y8ah)

[10. Open Brush](#_3mi2or3md6h8)

[11. Virtual Traveller](#_mwfw4qe7bcl7)

###### 1. **Gravity Sketch**

Gravity Sketch is a unique app that allows a user to make various shapes and layers in order to express themselves through 3D creations. The app is pitched as a tool for prototyping, and the app allows users to do this with its many options. SHSM leads and community partners will be vital in making this app relevant as students will need direction, but there are lots of YouTube videos for teachers and students to watch that will give great ideas for how to use this app.

4.5/5 Stars

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| **Gravity Sketch**: Think in 3D. Create in 3D.  Preserve your design intent through the creative process! Communicate ideas in 3D at each stage, capture work as an image or model to use in other phases of your workflow.  A powerful yet intuitive creation tool - express 3D ideas in real-time at any scale. Create loose free form sketches, detailed models, expansive scenes, and artwork unrestricted.  - 6 creation tools  - Geometry types: Mesh, NURBS, and SubD  - Unlimited layers  - Custom environments  - Import images, videos, and 3D files (.jpg, .png, .mp4, .obj)  - Export snapshots and 3D files (.png, .obj, .iges)  - Sync all content in the cloud using LandingPad  To enable the full Gravity Sketch experience you will need to sign up for a free landingpad.me account in order for us to deploy the features for your end-to-end workflow. LandingPad is our cloud platform allowing you to upload reference images and models, download exports and screenshots, and view your 3D files, all through a web browser.  Supported Player Modes: Sitting, Standing, Roomscale  Description taken from [Oculus Website](https://www.oculus.com/experiences/quest/1587090851394426/). |
| **Relevant SHSMs**: Arts and Culture, Construction, Manufacturing, Transportation |

###### **2. EON-XR**

EON-XR’s Oculus Quest 2 app has a great library of objects that can be manipulated and examined in further detail (for example, Health and Wellness SHSM students can examine the various components of a heart, or a Transportation SHSM student can disassemble a vehicle to see its components). EON-XR also allows you to change your learning environment. Advanced users can make their own lessons with the content, and this at times becomes necessary as not all the objects in the EON-XR library have information to accompany them.

4.5/5 Stars

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| **EON-XR**:  EON-XR is EON Reality’s flagship product, providing a mixed reality experience for users to learn, train, and perform better through modern immersive technology.    Through EON-XR, users can interact with and learn by utilizing 3D models and environments in an unforgettable mixed reality experience. Lessons can be played on anything from a smartphone or personal computer to the Oculus Quest headset to provide a full “hands-on” learning and training for students and employees.    With over 20 years of experience in developing mixed reality solutions for major clients in both education and enterprise, EON Reality created EON-XR as a way to remove the need for coding and technological knowhow in mixed reality content creation — allowing subject matter experts such as teachers and industry trainers to make and share their own lessons without needing advanced development knowledge.  Description taken from [Oculus Website](https://www.oculus.com/experiences/quest/5865014566849374/). |
| **Relevant SHSMs**: Arts and Culture, Aviation/Aerospace, Construction, Energy, Environment, Health and Wellness, Information and Communications Technology, Manufacturing, Transportation |

###### **3. Digital Engineering and Magic Demos**

[Digital Engineering and Magic](https://www.digitalengineeringmagic.com/) is a company from the Ukraine that makes custom VR training for its customers. They have published free demos for trial. Although these four listed demos are short, they score high because the publishers have made the experiences hands-on, almost quite literally. Students will need to grab items from the virtual environment to put their tool kits together, and they will need to transport themselves around the worksite to complete tasks. The narrator also teaches students throughout the experience. The main drawbacks are that there aren’t more available, and the training is based on European standards.

4/5 Stars

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| **Digital Engineering and Magic Demos available on Oculus**:  [*High Voltage Electrical Substation Training*](https://www.oculus.com/experiences/quest/3522494514525780/)  The training application represents an electrical substation environment (EU standard) and features audio and visual guidance.  The HV Electric Power Substation training will help participants become more familiar with the layout of industry-specific equipment, power transformers, oil circuit breakers, re-closers, and switchgear through exploring a virtual substation environment. During training, participants will be provided with information on substation terms, brief parameters, and performance rates.  What skills do you acquire from this VR experience?  Basic High Voltage equipment  The purpose of each piece of equipment;  Inner components of High Voltage equipment;  Electric Power Substation layout;  [*Transformer Oil Sampling VR Training*](https://www.oculus.com/experiences/quest/3703180206404314/)  Through the training, attendees are given a task to perform a preventive maintenance procedure — transformer oil sampling. Participants are invited to collect the necessary tools and step-by-step carry out the sampling procedure for transformer oil of voltage class 110 kV  What Skill Do You Acquire After Completing  After successful completion, attendees will know what tools are required to perform transformer oil sampling, set up a workspace, be aware of all safety considerations and requirements to be observed.  [*Occupational Safety and Health for Electricians*](https://www.oculus.com/experiences/quest/3745316658847625/)  According to statistics from Health & Safety organizations, 90% of accidents are due to behavioral issues.  This virtual reality experience addresses electrical safety requirements to safeguard employees and contractors who work near exposed energized parts, electrical equipment, and wiring in hazardous locations. This training will include isolation of energy, hazard identification, premises wiring, distribution panel operations, use of personal protective equipment, and insulated tools.  [*Feeder Protection Relay Training*](https://www.oculus.com/experiences/quest/3733139593449477/)  Feeder Protection Relay VR Training is an interactive step-by-step introduction into the modern feeder protection relay systems. The training presents a general overview of the feeder protection relay as well as the description of the user interface, inputs and outputs, monitoring and control features.  Training outcomes  Training provides a basic understanding of the feeder protection relay devices and describes their purpose and features, as well as the user interface, and audio and visual tips help to memorize information much more efficiently.  Descriptions taken from Oculus Webpages. |
| **Relevant SHSMs**: Construction, Energy, Transportation |

###### **4. Felix and Paul Studios**

Felix and Paul Studios have created immersive stories. When you are in the application, you are taking on the role of someone that makes it as if you are in the room having a conversation with someone. Even though the controllers are not used throughout the experience, the design of the experiences will make students feel as though they are in the experience.

4/5 Stars

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| **Felix and Paul Studios**:  Explore the vast and varied cinematic virtual reality worlds of EMMY award-winning Felix & Paul Studios.  Go from awe-inspiring romps through Jurassic World, feeling the presence and close proximity of a dinosaur, to a first-hand tour of The White House guided by President Barack Obama and First Lady Michelle Obama. Visit historic Ben's Chili Bowl and join patrons as they share and reflect on their experiences as black Americans traveling through the US. Or, step into the studio for an exclusive and intimate musical performance by Patrick Watson.  Start now and watch this space blossom with more and more of Felix & Paul Studios’ award-winning work featuring top franchises, leaders and performers from around the world.  Description taken from [Oculus Webpage](https://www.oculus.com/experiences/quest/2451131601675079/). |
| **Relevant SHSMs**: Arts and Culture, Environment, Hospitality and Tourism, |

###### **5. Turbulent Sky (on Oculus Web Browser)**

Turbulent Sky is a Disaster Management Exercise that is a 360 training tool created by Nursing, Paramedic, Disaster and Emergency Management experts. This makes it a great website to explore on the Oculus Quest 2’s web browser. The website includes Disaster Management Theory (lessons), quizzes, and debriefings that can be used before and after students enter into the 360 environment. In that environment, students will explore the various tools needed to respond to a disaster. There is also an area in which patients must be treated, and wearing the Oculus headset makes it a very real experience, especially when a patient panics and grabs “your” arm in a panic. Turbulent Sky falls lower on the list because there aren’t manipulatives for users to pick up, it’s narrower focus, and it isn’t an app designed specifically for Oculus devices.

4/5 Stars

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| **Turbulent Sky**: Introduction taken from [Turbulent Sky](https://etvlabs.com/TurbulentSky/) Webpage  OVERVIEW- DISASTER  Each year, 1/5 of countries worldwide have an emergency resulting in massive health, social and economic consequences. The public health workforce must be well prepared to respond and provide essential services during disasters  Health care educators are continually seeking creative learning resources for application of concepts in ways that will engage students, and that can generate the feeling of being part of a disaster event without actually being part of the event. Students need to feel competent in their ability to act responsibly, collaborate with other health and community professionals and provide holistic care in their role in the event of a disaster. Didactic content may be provided in the curriculums, and helps prepare students with knowledge of disaster management, however, does not allow actual experience in preparation to respond in the event of a disaster.  This simulation is an ideal method of introduction to disaster management for students. It provides an experience to gain skills, and the ability to manage an emergency situation, without risk to the population or the students.  This virtual disaster simulation can be used with any health care students/providers, for education and training purposes.  The goal of this Disaster Management Virtual Simulation is to increase the participant’s understanding and confidence in skill acquisition, critical thinking and decision making while providing healthcare during a disaster. |
| **Relevant SHSMs**: Health and Wellness, Justice Community Safety and Emergency Services, Transportation |

###### **6. Pollinator Park**

Pollinator Park is a virtual museum set in a Dystopian Europe in the 1950s. The museum explores a “what if” scenario based on how our current society's evolution is affecting pollinators. The museum has some portions with hands-on pieces in some exhibits, and gives concrete examples of how our environment and resources could be better managed. However, the app takes time to navigate, so it would be advisable to curate and plan to examine specific content beforehand in order to ensure that students have the best experience possible.

3.5/5 Stars

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| **Pollinator Park**:  Europe 2050 – Following a cascade of ecological crises, our world has been deprived of healthy ecosystems and wealthy flora. Amidst this dystopian landscape lies a lavish green beacon of hope: Dr. Beatrice Kukac’s Pollinator Park -a futuristic farm, a safe haven for pollinating insects and an eye-opener for its visitors.  Pollinator Park is a crossover between a zoo, theme park, an interactive museum and a crystal ball: fun, educational and emotionally engaging. As a park visitor in 2050, unravel the story of its founder Beatrice Kukac, try your hand at pollination, shop for grocery shopping in a pollinator-deprived world, rediscover nature’s perfection and find out how you can help protect it in the real world.  The European Commission's virtual Pollinator Park was built in collaboration with ‘archiobiotect’ Vincent Callebaut, in his signature eco-futuristic style.  Step into this beautiful virtual reality about the ugly future we face without pollinating insects!  Description taken from [Oculus Website](https://www.oculus.com/experiences/quest/3630788480370853/) |
| **Relevant SHSMs**: Agriculture, Construction, Environment, Food Processing, Horticulture and Landscaping |

###### **7. Adam Savage’s Tested VR**

Adam Savage’s Tested VR has two seasons worth of video content. These videos feature lots of Industry professionals, and their experiences connect with multiple SHSMs in ways that students may not have thought possible. The people featured in the episodes will also teach students about various equipment and techniques they use in their day to day work. The drawbacks of this app are that it takes time for each episode to download, and the manipulation of objects in the workshop is limited. The app mainly relies on the audience’s investment in the story of each person featured in the episodes.

3.5/5 Stars

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| **Adam Savage’s Tested VR**:  Inspired by Adam Savage’s Tested One Day Builds, Adam Savage’s Tested VR takes audiences on a journey inside the creative workspaces of incredible makers, bringing their processes to life, from ideation to creation. Featuring an eclectic roster of creators, Adam and the Tested team put viewers inside their workshops for an intimate look at their builds.    Adam Savage’s Tested VR features 12 episodes across two seasons, filmed with 180-degree stereoscopic cameras that allow for an immersive look at the creative process like never before. Bonus footage includes Adam's "Cave" workshop tours.    Makers include:  - Adam Savage, Maker/TV Personality  - Rick Lyon, Puppeteer & Puppet Designer  - Melissa Ng, Gothic Armor Designer  - Marc DeVidts, Robot Maker and Battlebots Competitor  - Andrew Freeman, Creature Mask Sculptor  - Griffon Ramsey, Chainsaw Wood Sculptor  - Alexis Noriega, Costume Wing Designer  - Ryan Nagata, Spacesuit Replica Fabricator  Description taken from [Oculus Webpage](https://www.oculus.com/experiences/quest/2586839431358655/) |
| **Relevant SHSMs**: Arts and Culture, Aviation/Aerospace, Construction, Information and Communications Technology, Manufacturing |

###### **8. Trent University Medical Scenarios (on Oculus Web Browser)**

Trent University Medical Scenarios is similar to Turbulent Sky. In each scenario, hospital staff and/or patients will interact with you. Based on your responses (multiple choice inputs) the scenario will unfold. Unlike Turbulent Sky, users will receive a report of their performance after the fact. This particular experience falls lower than others listed here due to it being specific to Health and Wellness, and the experience won’t be 360. However, it will still feel immersive on an Oculus Headset in its browser app.

3.5/5 Stars

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| **Trent University Medical Scenarios**:  [*Virtual Healthcare Experience*](https://de.ryerson.ca/games/nursing/hospital/index.html)  This portal provides healthcare students and professionals with an experiential learning opportunity for practising client care in a safe virtual environment. Here you can access a number of simulation experiences that will engage you in clinical decision making.  On the main ‘splash screen’, select from the following scenarios (360 and interactive ones are cited in this list):   * Emergency * Pediatrics * Gerontology * Medical-Surgical * Maternal & Child * Mental Health   Each experience lasts from 40 - 60 minutes. |
| **Relevant SHSMs**: Health and Wellness |

###### **9. MIssion ISS**

MIssion ISS is a hands-on app with engaging content; seeing the Earth from orbit during a space walk is truly mesmerizing. However, because the app simulates a low gravity environment, it can be difficult to move about the space station and to use the manipulatives that the app prompts you to explore.

3/5 Stars

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| **MIssion ISS**:  Take a trip into orbit and experience life on board the International Space Station! In this Emmy-nominated simulation, learn how to move and work in zero-gravity using your controllers. Dock a space capsule, take a spacewalk, and let real NASA astronauts guide you on the ISS through informative videos and images.  Description taken from [Oculus Webpage](https://www.oculus.com/experiences/quest/2094303753986147/) |
| **Relevant SHSMs**: Aviation & Aerospace |

###### **10. Open Brush**

Open Brush has similar features to Gravity Sketch. However, this app has more of an arts focus as opposed to giving someone an option for prototyping. That being said, there are more artistic options available that will allow for more imaginative and abstract designs to be created.

3/5 Stars

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| **Open Brush**:  Open Brush is a derivative made from the open source code of Tilt Brush, a room-scale 3D-painting virtual-reality application available from Google, originally developed by Skillman & Hackett.  Open Brush lets you paint in 3D space with virtual reality.  Unleash your creativity with three-dimensional brush strokes, choosing from a wide palette, of brushes, including stars, light, and even fire. Your room is your canvas. Your palette is your imagination.  The possibilities are endless.  A huge thank you to the Tilt Brush team and Google for making this open source, especially Patrick Hackett!  Description taken from [Oculus Webpage](https://www.oculus.com/experiences/quest/3600360710032222/). |
| **Relevant SHSMs**: Arts and Culture |

###### **11. Virtual Traveller**

Navigating an app like Google Earth can be overwhelming. Virtual Traveller has a collection of tours of cities made from curated images and a Google Map. The app sometimes has trouble with user inputs, and the images do not have manipulation options, leaving it lower on this list.

2.5/5 Stars

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| **Virtual Traveller**:  The Virtual Traveller is an application dedicated to travels enthusiasts.  It allows you to view selected 360-degree photos from Google Street View and their contributors. The photos are grouped to create travel tours of the most interesting places to visit in the world.  Aerial view Video clips created with Google Maps and Google Earth Studio, connect the visited sites and atmosphere music makes the trip more relaxing and enjoyable.  Only one controller is required (left or right) … your choice.  set your boundary on the Oculus Quest to stationary,  A swivel chair makes visits more comfortable.  Enjoy it and “Bon Voyage”.  Description taken from [Oculus Website](https://www.oculus.com/experiences/quest/3818198528247618/). |
| **Relevant SHSMs**: Arts & Culture, Hospitality and Tourism |