



VR Quest® STEAM Curriculum Guide

5th Grade Social Studies

Mexico



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Please refer to the VR Quest® User Manual available at www.vrquest.hamiltonbuhl.com/user-manual for hardware requirements and step-by-step instructions on how to play.

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VR Quest® STEAM Curriculum Guide Introduction

VR Quest® is pleased to introduce its STEAM virtual reality platform using the best digital content to create a transdisciplinary education product that emphasizes social emotional learning. Designing games strengthens academic concepts by reinforcing content knowledge and expands skill sets with reliance on logic, probability, geometry and other mathematical principles.

VR Quest's® **STEAM** curriculum challenges students to create, innovate, and problem solve all while connecting them to history, science and real-world events and issues that affect their lives. It includes extensive support for teachers such as embedded professional development and instructional resources to support a differentiated learning experience for each student.

The **Science** component can be best seen through scholars being able to create various physical environments and natural resources that will influence their characters and the game. There are landforms, geographic and climate factors that scholars account for during the game's design.

Technology is evident as VR Quest® provides a full virtual reality experience for the user, but also fosters problem solving while building mindset and skills. Additionally, the game creator has the option of focusing on the game design, presentation and story, there are also elements of the programming language, LUA that can differentiate the experience for scholars.

The **Engineering** process is facilitated through the design implementation. Scholars are consistently planning, designing and building their creations. When the design process is completed, the game must be piloted or tested out. By determining if there are glitches or does not run as anticipated, scholars are able to fail, regroup and correct the approach.

Art is the actual creation process and the aesthetics of the game or how one artistically perceives what is being created. The design concepts being facilitated while the placement of colors and variety are consistently addressed.

The **Math** component is seen through sizing, scales, ratios, proportions and rotational axis. In the creation process, creators utilize logic, probability, geometry and various other mathematical principles. Scholars will need to visualize and generate geometric shapes. Using visual examples and models, they will demonstrate how formulas work.

Social Emotional Learning is prompted as scholars are guided to consider all perspectives. How did all parties feel? Were some more privileged and have an advantage over others? How do issues of power, wealth and morality influence exploration and colonization? Could the United States have shown more empathy or compassion in dealing with other countries or groups of people? If you were given a chance to lead, what would you do differently? Why is it important to always consider the human side of the equation? How can we right the wrongs of the past?

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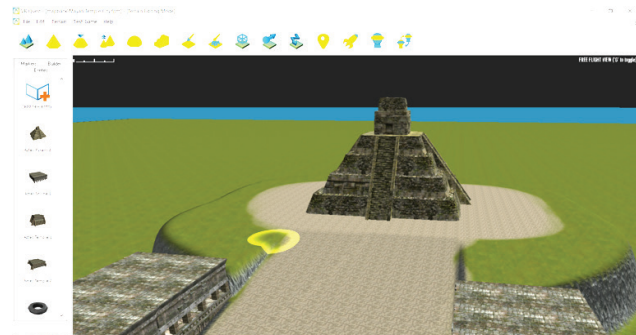
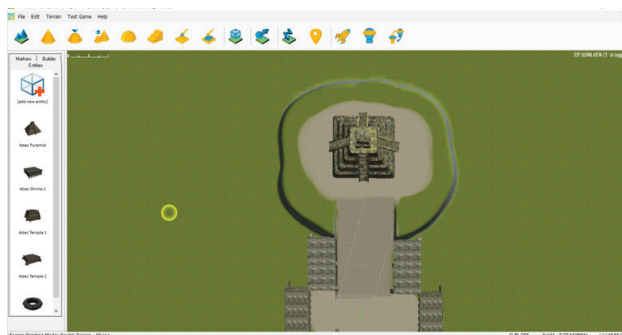
Additionally, the VR Quest® STEAM curriculum supports ENL programs as it creates equitable opportunities for scholars to develop social and academic language while improving their performance and constructing meaning. In order to accomplish this goal, scholars engage in all domains of language acquisition (listening, speaking, reading, and writing) while being active participatory learners through inquiry within meaningful contexts and authentic experiences.

Through its multi-ethnic characters, settings and variables, VR Quest® showcases different cultures and heritages as valued assets to learning and offers an opportunity for the learning community to expand its understandings of global awareness international mindedness.

Regardless of whatever communication level an ENL student is at, he or she can display knowledge and create something special unique while reinforcing written and spoken English.

As a classroom or content teacher:

- Collaborate with other teachers in different disciplines and grades about the most important concepts and skills to be taught and transferred into the game.
- Seek out the school librarian to support the research and to design instructional curriculum maps.
- Implement assessment rubrics with information fluency skills to guide the design process.
- Incorporate students' knowledge and use of multimedia resources.



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Curricular Alignment

DOK Tags	Common Core	IFC Standards	AASL	ISTE
Analyzing Comparing	W.5.1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information.	Analyzes and evaluates what is known, observed or experienced to form tentative thesis or hypothesis.	1.A1 1.A2	6c 4c
Contrasting Evidence	a. Introduce a topic or text clearly, state an opinion and create an organizational structure in which ideas are logically grouped to support the writer’s purpose.	States and verifies what is known about the problem or question and makes connections to prior knowledge. Writes questions independently based on key ideas or areas of focus.	IV.A1 II.A2	6a 3b
Information Text	b. Provide logically ordered reasons that are supported by facts and details.	Determines what resources will most likely offer quality information.	IV.A2	5c
Reasoning	c. Link opinions and reasons using words, phrases and clauses (e.g., consequently, specifically).	Considers culturally divergent and opposing viewpoints on topics.	IV.A1	5c
Summarizing	d. Provide a concluding statement or section related to the opinion presented.	Uses the categorization of materials within Dewey areas to locate resources and browse for additional materials.	II.A2	1a
Questioning Quotation Categorization	W.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	Uses technology resources such as online encyclopedias, online databases, and Web subject directories to locate information on assigned curriculum topics.	V.A1 I.D1	1b 3c
Dialogue Domain Specific Vocabulary Explanatory Text	a. Introduce a topic clearly, provide a general observation and focus and group related information logically; include formatting (e.g., headings), illustrations and multimedia when useful to aiding comprehension.	Uses organizational systems and electronic search strategies - key words, subject headings) to locate appropriate resources. Uses multiple sources to acquire background information and brainstorms ideas for further inquiry.	III.B1 IV.B1 IV.B4 III.B2	6d 3a 4b 5b

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DOK Tags	Common Core	IFC Standards	AASL	ISTE
Facts Graphics Illustrations	b. Develop the topic with facts, definitions, concrete details, quotations or other information and examples related to the topic.	Questions the differences between sources and seeks additional sources to resolve.	II.B3 IV.C1 I.C1	1b 4c 3d
Informational Text Key Details	W.5.3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details and clear event sequences.	Evaluates and paraphrases information that answers research questions. Evaluates quality of electronic and print information for usefulness, currency, authority, and accuracy.	VI.B2 VI.B3	4a 4d
Multimedia Narrative Opinion	a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b. Use narrative techniques, such as dialogue, description and pacing to develop experiences and events or show the responses of characters to situations.	Uses both facts and opinions responsibly by identifying & verifying them. Takes notes by paraphrasing or using quotation marks when using someone else’s words. Interprets information and ideas by defining, classifying, and inferring.	II.B2 III.B2 I.B3	6d 3b 3a
Organization Purpose/ Point of View	b. Use narrative techniques, such as dialogue, description and pacing to develop experiences and events or show the responses of characters to situations. W.5.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose and audience.	Interprets information and ideas by defining, classifying, and inferring. Uses common organizational patterns to organize information in order to draw conclusions.	VI.C1 VI.C2	4a 6d
Quotation Sequence of Events	W.5.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose and audience.	Forms opinions and judgments backed up by supporting evidence. Publish final product for a particular audience and purpose.	III.B1 II.B3	6b 6a
Point of View	a. Produce text (print or nonprint) that explores a variety of cultures and perspectives.	Interprets information and ideas by defining, classifying, and inferring.	I.C3	3b

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DOK Tags	Common Core	IFC Standards	AASL	ISTE
Investigating	W.5.5. With guidance and support from peers and adults, develop and strength writing as needed, revising, editing, rewriting or trying a new approach.	Considers culturally divergent and opposing viewpoints on topics. Cites all sources used according to local style formats.	I.D1	3d 5c
Constructing Assessing	W.5.6. With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.	Uses interactive multimedia tools to exchange data collected and to learn curricular concepts by communicating with peers, experts and other audiences.	IV.D4 II.D1	1b 1d
Differentiating	W.5.7. Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.	Writes questions independently based on key ideas or areas of focus.	IV.D1	2b
Formulating	W.5.8 Draw evidence from literary or informational texts to support analysis, reflection and research.	Uses the structure and navigation tools of a Website to find the most relevant information	I.D1 I.D4	2c 7
Critique		Take notes by paraphrasing or using quotation marks when using someone else’s words.	VI.D1 V.B1	6d 6d

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The Seven Steps of VR Quest®

Now put on your seatbelts and get ready for a fun-filled ride. You are the creator of this journey into history. As the adage so eloquently states: “in order to guide your future you must understand your past.”

As you make this game richly unique with content knowledge, the player participants will be focused on accomplishing the games’ objective or guided through an experience while being stimulated by audio, images, videos and text.

Prepare to travel through Mexican landscapes and gain insight into the responsibilities people have during periods of growth and globalization. Many have been fascinated by Mexico’s rich culture, diverse geography and multilayered economy for centuries.

As you recreate an authentic geographic region, think about ways to insert your thoughts, opinions and ideas on how many situations were handled. How could interactions have been more fair or compassionate? How do issues of power, wealth and morality influence exploration and colonization?

In this quest, you create an adventure in the unique environment of Mexico’s diverse and beautiful country. The following graphic outlines the basic steps involved in creating your learning VR Quest®. Be aware that you may not go in order. While brainstorming, you may start doing the storyboard, then do research. While building the interface, you may have to go back and do more brainstorming. Just like a paper that you edit and revise, you will be revisiting your storyboard and your game several times to fine tune and perfect it.

On the following pages, you can read how these steps apply to designing a sample quest. Though you can design a quest by yourself, you can often generate more ideas and create more in less time if you collaborate and work as a team.

Mexico



01  **Define the Objective**

An objective guides the player in your game and helps them focus on the task at hand. A good objective is clear, concise and **SMART**.

- S**pecific
- M**easurable
- A**ttainable
- R**ealistic
- T**ime-based

By the end of this quest, players will be able to _____.

Mexico

Here is a sample **SMART** objective:

Players will be able to:

- Investigate how various European powers explored and eventually colonized the Western Hemisphere.
- Compare and contrast the United States to Mexico with a focus on culture, geography, government and economics.
- Explain how diverse geography of the Western Hemisphere influenced human culture and settlement in distinct ways.
- Define how human communities in the Western Hemisphere have modified the physical environment.

Your objectives will vary depending on the type of VR Quest® you design. Your quest may have an objective that requires player participants to acquire artifacts. Or, your quest could have an objective that is based on an educational gallery walk. Regardless of which one you select, an objective is necessary to guide the game designing process, just as a thesis guides a major research paper. A good objective has no more than five main points.



Brainstorming and Collaborating

The thinking and conceptualization of process is intended to be a free-flowing period to generate as many ideas as possible. Brainstorming is the collection of all ideas. No idea is a bad idea in this stage.

Collect all ideas

Often an idea will lead to a bigger and better idea. Once you get your creative juices flowing, you start to think of other things.

Write ideas on big chart paper

If everyone takes ownership and can easily read the group work, it will generate more ideas.

Utilize pictures, colors and music

Have you ever heard the expression you are the company you keep? Writing in color will help you color code your ideas and adding drawings, photos and sketches will ignite greater creativity. This is a great organizational tool as well.

Play background music

Play some relaxing wordless music. If you have Amazon's Alexa available, she can play beach sounds, pink noise, healing or mediation sounds. You name it, she has it. Studies show that music can make you more productive.

Mexico

Set a timer

A solid half-hour for brainstorming is usually sufficient time. When you work on a timer, you are focused, clear and productive. Do not allow anything to distract you during this time. Cell phones should be put away and the only task at hand will be brainstorming.

Be comfortable

Make sure you have water to drink, ample room to write and draw and the atmosphere is a pleasant temperature. When you are comfortable, you will get more done.

Now that you have completed formulating and generating ideas, you have officially completed the brainstorming process. Go through all the ideas and separate the great ideas from the rest of them. Using teamwork, read through the list and discuss what you like and dislike about each. As a group, vote on what works and what doesn't then cross off the not so good ideas. Finally, think about what you can realistically create in the given time period.

03



Research

Use the objectives you wrote in Step One to guide your research, answering any questions. Here's some of the research associated with the objectives in our example:

Critique a comparative case study of Western Hemisphere Cultures:

The countries of the Western Hemisphere are diverse, and the cultures of these countries are varied and rich. Because the United States and Mexico's proximity to each other, they share some of the same concerns and issues.

Mexican architecture and communities illustrate an astounding level of engineering. Mexico has the greatest number of declared World Heritage sites in all the Americas. They are of artistic and historical significance as exemplified by the archeological finds of the Mesoamerican civilizations. While some structures were very simple, others were quite complex. Early churches and monasteries were built on classical Arabic and Spanish principles.

- Describe the geographic features (regions, states, rivers, mountains, deserts, landforms, oceans, seas and gulfs).
- What different regional characteristics (physical, political, economic or cultural features) are there?
- Define how physical environment influences human settlement, land use and economic activity.
- Explain their religion, beliefs and cultural contributions.
- Compare and contrast the United States' to Mexico's key cultural characteristics: sports, leisure activities, music, dance, literature, traditions, arts, language and architecture.

Mexico

Know the significance of math and science throughout everyday life:

Mathematics and art were hand-in-hand as an important part of Mexican life. This can be illustrated by their pyramids, cathedrals and government buildings. The structures, symmetry and strategic placements of columns, arches and openings are mathematically and artistically based. The cultural dances, music and storytelling traditions are based in sequences, repetitions, and timing.

Additionally, the Mexican art of paper cutting is based on patterns and math skills. Math and art are pre-dominant features in everyday Mexican life.

Explain the past and current economy:

The people of the Western Hemispheres have developed various ways to meet their wants and needs. They may trade with each other, as well as other countries around the world. Determine the characteristics of traditional, market and command economic systems, imports from and to other Western Hemisphere markets and define the free market economy. Define NAFTA. Assess the major natural resources and industries of Mexico with specific reference to regional production and manufacturing.

Social emotional learning:

How do issues of power, wealth and morality influence exploration and colonization? How did it affect all those involved as well as subsequent generations? To what degree did the Western Hemisphere hinder equality and Civil Rights?

Please make sure to support any opinions you form with text evidence so the person who plays your game understands how you came to the conclusions you did.

Taking it to the next level with critical thinking:

How do key forces and events shape nations? Mexico shared traditions with Western Hemisphere nations that affected its growth and transformation. Various regions developed differently because of their interactions and often struggled for equality and civil rights or sovereignty. In addition, the political systems of the Western Hemisphere vary in organization and structure across time and place.

Mexico

- Independence from Spain (1821)
- The Alamo and San Jacinto
- Mexican-American War
- Battle of Puebla (1862) and Cinco de Mayo
- Mexican Revolution (1910)
- Political Constitution of the United Mexican States (1917)
- Indigenous Rights
- Women's Rights
- Multinational and Nongovernmental organizations: United Nations, World Bank, Project Hope, local maize vs GMO corn, The Nature Conservancy

VR Quest® encourages scholars to practice while they are learning game creation, but do not copy. Be creative, try new things and bring new ideas and aspects into the VR experience with your fresh take and stimulating outlook.

Mexico gives you a wealth of opportunities and challenges to design a quest where players discover more about this amazing country as they face and overcome obstacles and problem solve. Here are a few ideas:

- Tell players that they are the architects of Mexican pyramids and are being pursued for their blueprints. They need to know different geography terrains and location to avoid encounters with unknown entities that are trying to destroy the blueprints. Creators can alter structures by changing aspects of the physical environment.
- Challenge players to create a detailed cultural Mexican museum. What does each object represent and what is its significance?
- Explore a pyramid to find artifacts within and create a portfolio capturing the historical content. What other artifacts would you add from different time periods and why?

Mexico

Websites for Student Use

Here are a few vetted websites to help you conduct research:

http://softschools.com/facts/cultures/mexican_culture_facts/2378/

<https://educ5428.wordpress.com/culture-community/cultural-norms-beliefs-and-values/>

<https://www.thoughtco.com/famous-people-in-mexican-history-2136677>

<https://historyplex.com/mexican-family-culture-values-traditions-beliefs>

<https://kids.britannica.com/students/article/Mexico/275813>

<https://www.kids-world-travel-guide.com/mexico-facts.html>

<https://kids.nationalgeographic.com/explore/countries/mexico/#mexico-dancers.jpg>

<https://www.ducksters.com/geography/country/mexico.php>

Student Voice and Empowerment

Educators often feel as if they must know everything before they can teach it. The beauty of game design and integrating technology to support the curriculum is scholars can become the experts. There is nothing scholars love more than to be able to teach their cohorts or even adults how to do something.

Studies show that scaffolding learning helps to not only reinforce new knowledge, but to also foster and promote a growth mindset, as well as build confidence, empower scholars and reinforce a strong sense of voice.

Mexico

04



Storyboard

In order to have your game make sense to the player participants, you must create your storyboard. A storyboard is a physical layout or a sequence of directions, illustrations and dialogue of the order of your story. A good storyboard depicts significant action and changes.

Think about the last good book you read. The author sat down to think about exactly what would happen when. One of the best ways to do this is to create a series of panels that almost look like a comic book.

Going through the process of planning and creating this will help you to envision both the actions that the player will be experiences, and the environments in which they'll be doing it.

Every story will have the following main components:

Introduction

Here, the player is introduced to the characters, environment and objective of the quest. You will also establish the player as the 'main character' of the story, and let them know what is expected of them.

Body

The body is where all the action takes place. Your player will face challenges, solve puzzles, meet other characters, and build toward the climax.

Climax

A climax is the ultimate challenge, where the main character uses all they've learned during the course of VR Quest® to achieve their final objective.

Summary

The summary congratulates the player for a successful quest and reminds them of all the amazing things they did to get here.

In order to create a good story, you will need to define the challenges that the main character will face on their journey. Ideally, all of these will build upon one another getting harder and harder as the player moves forward.

As you devise your story, be sure that the problems the main character needs to solve are not too easy, but also not too hard. If they need knowledge to answer questions, be sure to embed the answers somewhere or explain clearly where they can be found. On the following page is a sample storyboard for a Mexican VR Quest®.

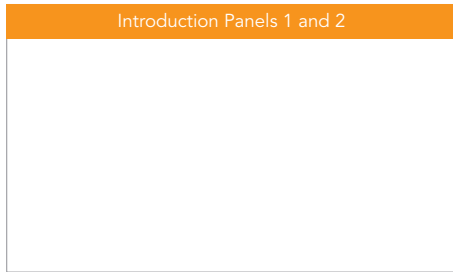
Mexico

This illustration highlights different Mexican regions.

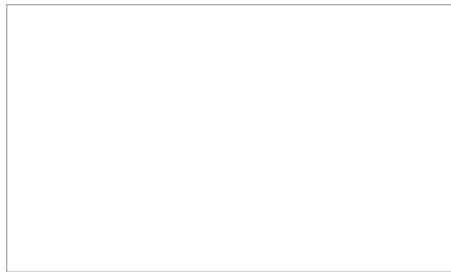


Mexico

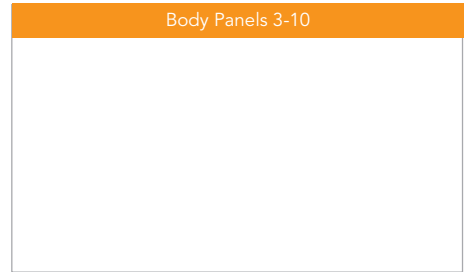
Sample Storyboard for Mexico VR Quest®



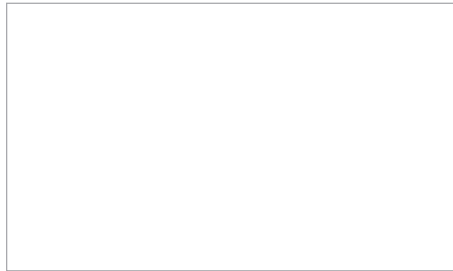
1. A native guide will lead the player through a narrow mountainous path toward an Inca community.



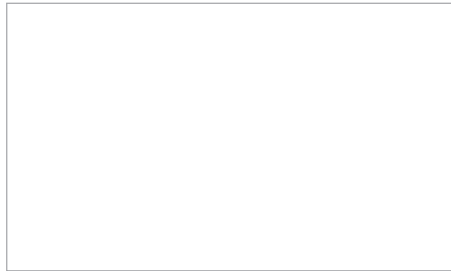
2. Player comes to several structures that illustrate family life and community. Narrate your journey as you travel.



3. Player searches for cultural artifacts within community to create a journal documenting his/her journey.



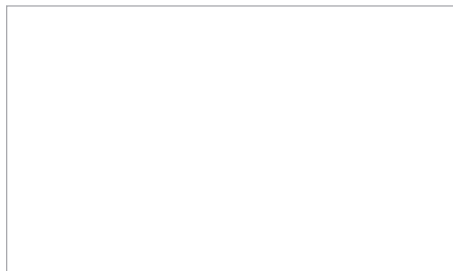
4. Player recognizes how advanced in science and tech Mexicans (Maya civilization) were with highly advanced writing systems, calendars, math, architecture and astronomical systems.



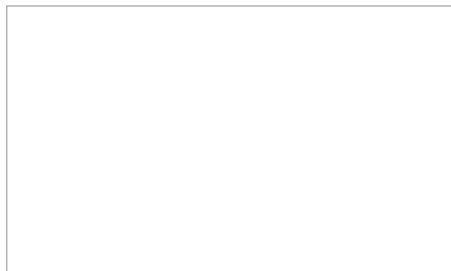
5. The dead fish supplied the nutrients for the plants while the beans grew close to the ground and kept much-needed moisture in the soil.



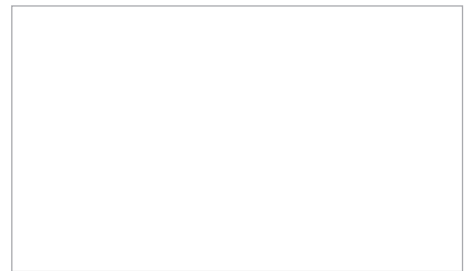
6. Player moves through the beans which also acted as a natural deterrent to maize pests. These individual plantings were built on little mounds with indentions on top to collect rainwater.



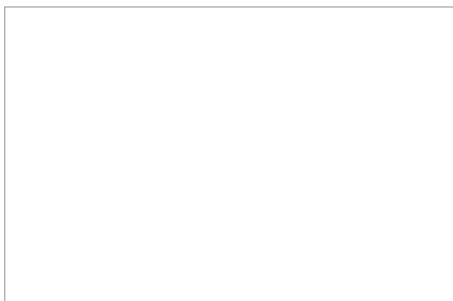
7. Young guide states, *"We are an amazing community or a growing and advanced civilization. Our government, buildings and culture have transcended time and we are often visited in the modern age."* Contributions to society and the world will be detailed here with audio and visuals.



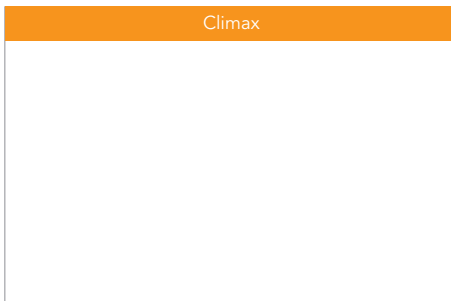
8. Voice: *"Art and science was part of everyday life for us – It was used for more than just decorations and common household objects."* Detail some important pieces.



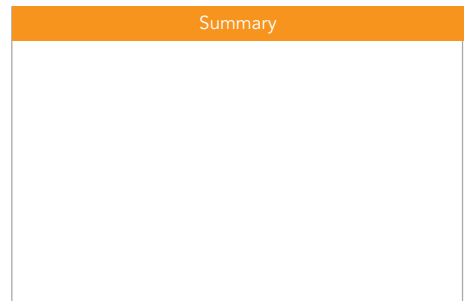
9. Player walks around the perimeter of the community taking note of all daily activities and nodding in appreciation.



10. Player returns to the center of the community and greets the most revered and the oldest leaders.



11. Player needs the most important artifacts to present to the elders. *"Oh no! I don't have the most important artifact from my journey. What will I do?"*



12. Teamwork *"Congratulations, my friend. You found it. Great job!!"*

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05 

Build the Interface

Now that you’ve decided your story line and main scenes, it’s time to build it using the VR Quest® software. Use the tables included with ‘Learning the VR Quest System’ to help you remember how to use the commands to build your quest.

Depending on what’s available and how much time you have, you may need to go back to Steps 2 – 4. Maybe you don’t have time to fill rooms with all the right equipment or build a complex series of underground tunnels. Perhaps you’re not exactly sure what equipment would be found in a space lab and need to do more research. The story might benefit from a bit more brainstorming.

How could you include different artifacts relevant to the historical period your game is describing? Would it be a series of different artifacts that will help the player participants learn more or would it be one artifact that is continually acquired?



For example, the above Diego Rivera work of art highlights the political tensions and the battle for justice and equality that everyday people fought for. Different artifacts can illustrate what daily life was like or even provide benchmarks for participants to begin to compare/contrast Mexico and the United States.

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Pilot Test

After you've finished building your first draft of the quest, you'll need to give it to people outside your team to solve. It helps to have a fresh set of eyes evaluating and making suggestions on what you need to do to improve it. This will help you to identify any problems that need fixing.

Ask the following questions of the people who try it out:

1. Did you know what you were supposed to accomplish to win the game?
2. Did everything work (switches, videos, doors, etc.)?
3. Did we provide everything you needed to succeed in this quest?
4. Was this exciting? Were you completely engaged? What do you think could make the quest better?

Professional game designers go through many pilot tests because there are almost always things that don't work the way they intend them to. Just like good writers edit and revise, as a game designer you must also seek ways to improve your game. It often helps to step away from your project and return with a fresh outlook. You may want to do several test runs.

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07  **Revise**

The pilot test will give you lots of information. Maybe players didn't understand what they needed to succeed. Perhaps they were unable to move items or open doors to move forward. Or critical information that they needed to solve the quest wasn't available.

Following are a few of the things you may need to revise:

Factual Content:

- Did players understand the quest?
- Was all the information needed available to players?
- Did the story make sense?
- Were there things that misled players because they were unclear or inaccurate?

Interface:

- Did the interactive features work?
- Could the players navigate the landscape?
- Was the setting attractive, and in line with the theme of the quest?
- Did things like maps or guides properly match the 3-D landscape?

Overall Experience:

- Was the quest at an appropriate level of difficulty?
- Did players stay interested in the quest?
- Were players able to complete the quest in a reasonable amount of time?
- Did players have an overall positive reaction to the quest?

In revising, it is likely that you will repeat some of Steps 2 – 6. If you have a chance to pilot test a second time, hopefully you will see how much better your quest is after incorporating feedback.

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Take it Home

One of the best things about VR Quest® is you can take your project home!

When you've finished, you will be able to save your file in a format that can play on any home computer. Your friends and family will be amazed that you've created your very own computerized VR Quest® and will enjoy playing it long after you've gone home.

In the future, we hope you'll be able to join us in designing a wide variety of quests, sparked by your creativity and imagination and share them with scholars across the United States!

