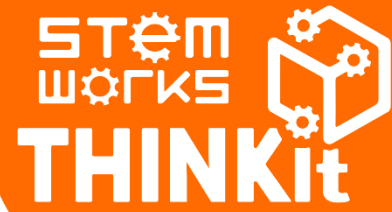


VIRTUAL REALITY



Virtual Vacation Activity

Grades

K-12

Career Pathways

Travel Agent
Financial Advisor
Tour Guide
Marketing
Advertising

Academics

Science: Environment, Geology
Social Studies: Geography, History
Math: Budget
Technology: Creative Communicator

Professional Career Skills

Collaboration
Communication
Presentation
Creativity
Researching

Materials

iPod or smartphone
Google Cardboard App
Google Street View App
Notes App
Virtual Reality (VR) Headset

Team Goal

Level 1

Choose virtual locations that you would like to travel to. Be able to explain why these would be great travel destinations!

Level 2

Create a virtual travel itinerary by choosing meaningful travel destinations. Communicate the value of visiting each location on this trip to your audience.

Level 3

Create a virtual 'sneak peek' experience that entices customers to pick your travel package! Include prices and design an accompanying advertising pitch or brochure.





Think like a Virtual Reality Developer

Erfahren Experience

Everyone can learn from experiences, and sometimes you recall these experiences because you have learned useful information from them. VR can be a learning tool, where experiencers have experiences that they not only remember, but also learn from.



Field of View (FOV)

Immersive VR attempts to mimic the eye's natural field of view. The human eye can see about 200 degrees. The larger the angle, or field of view, the more realistic the immersive VR will feel!



Simulator Sickness

When your brain's visuals are out of sync with your body's movement, you may experience some disorientation that leads to motion sickness. For example, if you're immersed in a 360° motion video, while your body is sitting still, you may experience simulator sickness. This is a big challenge for VR developers!



Augmented Reality

Virtual images can be overlaid, or superimposed, onto our vision of the real world. Our brain combines a composite image of both reality and virtual reality into one. Augmented reality is slightly different than full virtual reality.



Haptics

VR developers are working on ways to experiencing touch! This means that when you view something and reach out to 'feel' the object, your hand might feel a vibration or pressure. VR developers are working on haptics, to make an immersive experience even more realistic!



Presence

When immersed in VR, you might forget that you aren't really 'there.' This is the goal of many VR immersive experiences! Having a familiar virtual anchor, called a 'cockpit' helps ground the viewer. Head tracking that orients (look left, right, up, down) with the position of a person's head helps to make the experience feel very realistic.



Cinematic VR

Virtual reality can be designed from actual video and photography from the real world. Cinematic VR is best captured using high quality cameras and camera rigs. Cinematic VR experiences may try to create 'emotional presence' which is accomplished if you feel joy, fear, empathy or other emotions.



Computer Generated VR

Computer graphics can be designed, built and programmed to interact with the viewer, creating an immersive VR experience. These graphics can be realistic or cartoon-like. Dollhouse views, or top-down views from above, are easy to create with computer generated graphics.



Gaze-Activated Content or Hotspot

A hotspot usually glows and has interactive content. If the VR experience is interactive, the experiencer might be able to decide on what they do next. Gaze-activated content only 'plays or moves' when the experiencer 'looks' at that object.



Stitching

Some cameras have automatic software that seamlessly overlaps images together to create a 360° experience. If not automatic, images need to be downloaded into special software. Some apps, like Google Street View will guide you through stitching photos together as they are being taken.



Signposting

To help the experiencer understand the environment better, cues can be added. These cues can be direct, like informational signs or images, or less direct, like icons or objects. A navator, or VR 'tour guide' might also help guide your experience or choices.



Avatar

A VR experience may be in first person view, you may see avatar hands, or see a full bodied avatar. Avatars can be especially helpful in Social VR, where you can interact with others in a virtual environment! Ghost stories have no avatar, you just observe the story as it goes.

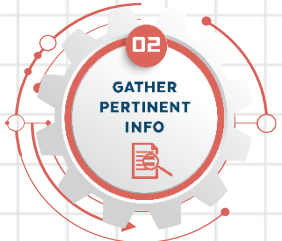


Engineering Design Process Directions:



Define the Problem

Choose a goal to tackle with your team!



Gather Pertinent Information

Explore the apps.

Learn how to locate, view and save 360° images.

Learn how to stitch together your own images.

Practice safe digital citizenship!

Research places to visit that fit your itinerary!



Google Cardboard:
VR viewer app, it helps your device 'view in 3D'



Google Street View:
360° photos posted around the world & stitches 360° photos



Notes:
(memo app) Save 360° photos from Google Street View



Generate Multiple Solutions

Brainstorm and make a list of possible places that fit your itinerary.

Explain why each of these locations might be worth visiting.

If you are budgeting, include costs for each experience.

You may need to do research outside of the app to get more information!



Choose a Solution

Decide on the trip itinerary that best aligns with your purpose and goal.

Save each one of these experiences in the Notes App.

If you are budgeting, trip cost might help you narrow your choices.



Design a Culturally Responsive Solution

Refine your rationale for including each destination in your itinerary.

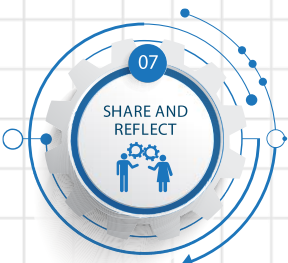
Think about your potential audience, what would they value?

Make the experience relevant for your audience.



Test and Optimize

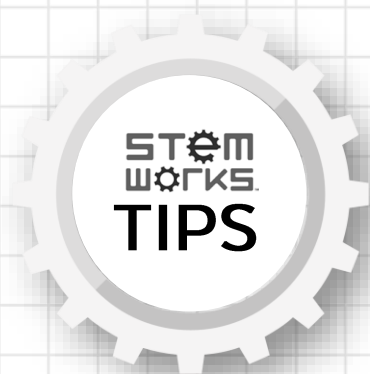
Share and explain your itinerary with others. Ask for feedback on each of your destinations. Are these places people would enjoy visiting? Would the itinerary be affordable for the audience you are marketing to? You might collect feedback in a survey. Use feedback to improve the experience.



Share & Reflect

Pitch your virtual trip to an audience. Discuss the destinations and answers any questions. Reflect on how well you and your team collaborated on research and presentation. Talk to your team: What went well?

What could have gone better?



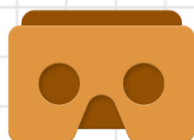
Virtual Itinerary Design Tips

Explore places around the world in virtual reality and create your own VR photos

Materials



Google Street View:
360° photos posted around the world & stitches 360° photos



Google Cardboard:
VR viewer app, it helps your device 'view in 3D'



Notes:
(memo taking app)
Save 360° photos from Google Street View

Who? Who is your 'target market?' These are the people who would purchase your vacation. Is this trip for a family? Is it for a school group? Is it a romantic getaway?

What? What kinds of experiences will your 'target audience' want to see, visit and do? Create a well rounded experience. You might find that some destinations fit into many categories!



Environmental

Experience the great outdoors in local or national parks! Go hiking, snorkeling, boating, or take a scenic drive!



Academic

Visit a museum! See an aquarium, zoo or have the past come to life at a historical site. Visit a science center or college campus!



Cultural

Festivals, food, concerts, music and art are all great ways to experience local culture! See the architecture in a city!



Historical

You might find yourself indoors or outside, but there are plenty of ways to experience history. Stop at an aviation museum, visit the pyramids of Egypt, or find yourself inside a presidential library.



Adventure

Visit a theme park, a sports game, or go on an outdoor adventure, like whitewater rafting. These are just a few places thrill seekers might like!



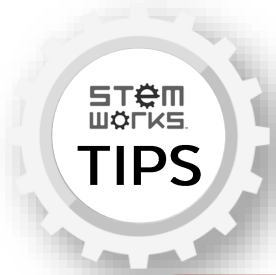
Restorative

Rest is always good. Your target audience might want to spend a day at a beach or soak in hot springs. Or spend the day sightseeing and shopping!

Where? What country are you visiting? What city or cities will be a part of your tour?
The trip may be more expensive with destinations that are far apart.
Think about what your 'target audience' might be able to afford.

Why? Your 'target audience' will experience a sneak peek of your itinerary in virtual reality.
Be ready to sell the experience and explain why each destination is included.
You need to explain the value behind each of the vacation destinations!
A brochure can help you pitch your package!

How? How much does the activity cost? Is it free? Are there tickets to purchase?
How much does it cost to travel from one location to another?
If you are getting really detailed, are there other costs like hotel and food?



Virtual Itinerary

Create a sneak peek experience of your travel itinerary in virtual reality!

Virtual Itinerary

Tour Company Name:

Who? Vacation is designed for:

What? Check all that apply!

☐ Environmental



☐ Academic



☐ Cultural



☐ Historical



☐ Adventure



☐ Restorative



Where?

Continent: _____

Country: _____

Province/State: _____

City/Town: _____

Why? Communicate with a Pitch:

Why is this destination so awesome to visit?

What will people see and do?

How? Total Cost: _____

Activities / Dining: Cost:

_____ \$ _____
_____ \$ _____
_____ \$ _____

Airline / Cruise:

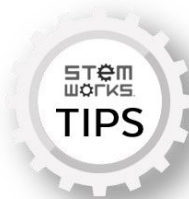
_____ \$ _____

Rental Car: _____ \$

Hotel:

_____ \$ _____

Tour Company Fee: \$ _____



Virtual Itinerary

Create a sneak peek experience of your travel itinerary in virtual reality!

Our Travel Company is called: _____

Who? Our vacation is designed for _____



Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

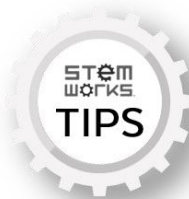
City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?



Virtual Itinerary

Create a sneak peek experience of your travel itinerary in virtual reality!

Our Travel Company is called: _____

Who? Our vacation is designed for _____



Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?

Destination # _____

Title: _____

What?

Check all that apply

- ☐ Environmental
- ☐ Academic
- ☐ Cultural
- ☐ Historical
- ☐ Adventure
- ☐ Restorative

Where?

Continent: _____

Country: _____

City: _____

How?

Cost of Activity: _____

Travel Cost: _____

Why? Pitch: Why is this destination so awesome?
