



EXPLORING VIRTUAL REALITIES (VR) AND AUGMENTED REALITIES (AR)

Augmented Reality (AR) is used in Pokémon GO, which merges real and virtual worlds, while virtual reality (VR) takes us into purely virtual worlds with tech like the Oculus Rift. VR and AR are transforming how people play, learn, and experience the world around us, even in the medical field. Creating these experiences is accessible for all levels of coding knowledge.

Introducing, the Passion Project-- your chance to ask questions, research, and create! Passion Projects provide opportunities to take an intense, deep dive into a topic of interest to YOU! Then, you mix your knowledge with a massive dose of creative thinking to solve a real-world problem.

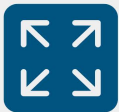
In this expedition, you will learn about AR and VR and develop a passion project of your choosing to create virtual objects and worlds. You will further develop your technical abilities and add to your portfolio to share with employers or for college admissions.

TAKE CHARGE OF YOUR LEARNING



REFLECT

Think deeply about your skill sets, learning goals, and purpose. Return to this phase throughout the process.



STRETCH

Engage in learning beyond the bell to expand your knowledge and skills.



INNOVATE

Create solutions for real-world problems you are passionate about and want to solve.



SHOWCASE

Share your innovative solutions to the world in a powerful way.

REFLECT >>



Click the thumbnail above to watch.

A group of high school students created a virtual reality experience for pediatric rehab patients at children's hospitals.

- What problem can you solve using a virtual environment?
- How can you add more fun and excitement in games with VR/AR?
- How can you use AR/VR to enhance, improve, or transform the human experience?
- How can you re-imagine a non-VR/AR app and enhance it with this technology?

STRETCH >>

Dive into these resources to expand your learning and skills in:

UNITY TO BUILD AR APPS

Enroll in Unity's self-paced [VR course](#)

Hone your skills in [Unity XR: How to Build AR and VR Apps Specialization](#)

BLENDER FOR MODELING, RIGGING, ANIMATION AND MUCH MORE

Explore [tutorials](#) to get you started with Blender, then watch [this video series](#) to learn how to use Python code to automate your artistic work.

SWIFT WITH THE ARKIT SDK TO CREATE AR EXPERIENCES FOR ALL APPLE PLATFORMS

Take a [free course](#) by Udacity

PHOTOSHOP TO CREATE 3D OBJECTS AND ANIMATIONS

Use this [tutorial](#) to learn with how to create 3D objects in Adobe Photoshop

GOOGLE'S ARCORE TO PLATFORM TO BUILD AUGMENTED REALITY EXPERIENCES

[Read the ARCore docs](#) and find Quickstart guides for Android and more

ADDING VR TO WEB APPS

Compliment your knowledge of HTML and [learn the A-Frame](#), an open-source web framework, to add VR experiences to your apps.

INNOVATE >>

On the next two pages, there are ideas to innovate and showcase your work.

BRAINSTORM

- 1
 - What problem do I want to solve?
 - What do I want to communicate with my project?
 - What skills do I need to develop to solve this problem?

RESEARCH

- 2
 - What solutions already exist?
 - What can you learn about your users?
 - What skills do I need to develop for my solution?

DESIGN

- 3
 - Inexpensively create a scaled-down version of your solution for feedback.
 - Experiment: you may create many during this step that you accept, reject, or re-examine.
 - Share it and invite others to experience your solution.

DO

- 4
 - Create your project.
 - Build a support team of mentors and supporters.
 - Join communities of creative coders, share your work and actively cultivate mentors.

TEST AND IMPROVE

- 5
 - Does my solution meet the needs of my users?
 - Am I effectively communicating my message or addressing a problem through my solution?
 - Based on feedback from my users, how can I improve what I have made?

Choose what you want to innovate from the following choices:

DEVELOP A VR GAME

With intermediate and advanced coding skills, you can make a VR game with Unity.

Watch the [VR with Andrew](#) YouTube channel to find short tutorials to incorporate in your own projects.

ORGANIZE A VIRTUAL TOUR

Use a tool like Kuula to create tours that can be experienced using with a VR headset or Cardboard.

Watch this [tutorial](#) on how to create virtual tours with your own 360° images and add code to add interactive

CURATE AN AR GALLERY SHOW OF 3D OBJECTS

Use [Adobe Illustrator](#) or Adobe Photoshop to create 3D objects with a simple [2D inflation strategy](#).

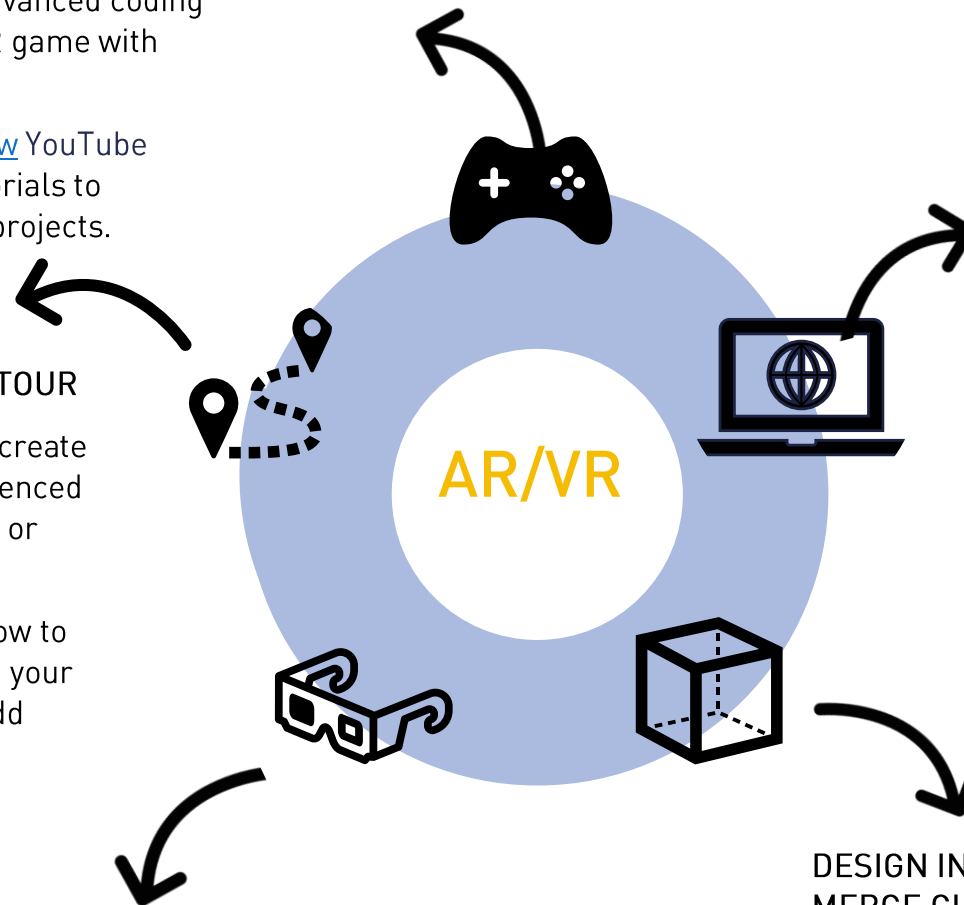
DELIVER A VR EXPERIENCE ON THE WEB

Easily create and publish 3D objects with options to add code for more functionality on [Cospaces](#).

Use an API called [Model Viewer](#) to add 3D objects to web apps as an HTML element.

DESIGN INTERACTIVE 3D OBJECTS WITH MERGE CUBE \$

Sign up for a free-trial on CoSpaces to create interactive 3D objects using Merge Headset or a foam or [paper Merge Cube](#). You can turn a Google Slides presentation to 3D objects for the Merge Cube.



** If there is a passion project that does not fit any of these choices, that's OK! We want you to design something that excites you!*

SHOWCASE »»

Use the choice board as a source of inspiration and select a creative method to showcase your passion project.

SHARE YOUR 3D
OBJECTS FROM
COSPACES

[How to Share a Space](#)

PUBLISH YOUR APP IN
A PUBLIC GALLERY

[Publishing App - Code.org](#)

PUBLISH YOUR UNITY
APP IN AN APP STORE

[Publish in Google Play \\$](#)

[Publish in Apple App Store \\$\\$](#)

PUBLISH YOUR 3D
OBJECTS ON A
WEBPAGE

[Wix](#)

[Google Sites](#)

[GitHub Pages](#)

CREATE AN
IN-PERSON VR EXHIBIT

[How to Set Up an Art Exhibition](#)

[How to Organize an Art
Exhibition](#)

[Make your own VR Exhibitions](#)

CREATE AN ONLINE
PORTFOLIO TO SHARE
WITH COLLEGE
ADMISSION OR A
POTENTIAL EMPLOYER

[Bulb](#)

[Google Sites](#)

ENTER A COMPETITION

[Games for Change](#)

[Enter the Congressional App
Challenge](#)

CREATE A YOUTUBE
VIDEO DEMO

[Upload videos](#)

[Best practices](#)

PUBLISH ON
SKETCHFAB & OTHER
TOP PLATFORMS

[Upload on Sketchfab](#)

[Embedding models](#)