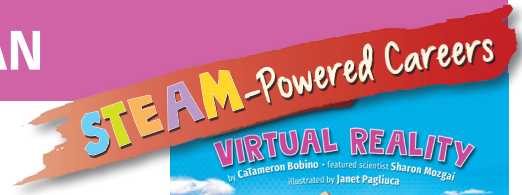


VIRTUAL REALITY LESSON PLAN



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Subject / Grade Level: Virtual Reality / Lower elementary

Materials:

- ▶ props for the play: paper, markers/crayons
- ▶ computer to play the videos
- ▶ optional: popcorn popper or a microwave and popcorn kernels
- ▶ optional: one large bag of popped popcorn to pass out to the class

NGSS Essential Standards and Clarifying Objectives:

- ▶ **K-2-ETS1-1:** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- ▶ **K-2-ETS1-2:** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Lesson Objectives:

- ▶ Students will understand how virtual reality emulates the real world.
- ▶ Students will learn about the role that the five senses play in our actual environment.

Differentiation Strategies to Meet Diverse Learner Needs:

- ▶ Think-pair-share, for students who learn through engaging with others
- ▶ Multisensory learning, to accommodate students who are auditory learners and visual learners, and to encourage students to engage their senses in the learning process

ENGAGEMENT

- ▶ Ask students what they know about virtual reality, also called VR, and if any of them have experienced it before.
 - ▶ Response examples:
 - ▶ museum experiences, phone apps, Google Cardboard, console video games
- ▶ Read the VR book to capture student interest in the topic.
 - ▶ In the VR book, Jae and Felicia travel to Egypt and experience the sights, sounds, and scents of the area.
- ▶ Tell students that today they are going to mimic how VR environments are created.
 - ▶ Have students close their eyes and imagine their favorite place on the planet.
 - ▶ Ask students to think about what this favorite place looks like.
 - ▶ Ask students to think about what scents are in this place.
 - ▶ Ask students to think about what sounds are prevalent in this place.
 - ▶ If applicable, see if there are any tastes associated with this place.
 - ▶ For example, a hot dog at a baseball stadium, or elote at your abuela's house.
 - ▶ Have students open their eyes.
 - ▶ Have students draw their favorite place.



- ▶ Have students break into small groups to share their favorite places.
 - ▶ Tell students to think about how they drew their favorite locations and described them to their friends. Ask students what they would include if they were to make their favorite locations into VR experiences.

EXPLORATION

- ▶ Have the students close their eyes again and play one or both of these YouTube videos. Don't tell students what they are listening to. Listen to either video for two minutes.
 - ▶ the sound of popcorn: <https://www.youtube.com/watch?v=yCSkXWO497s>
 - ▶ the sound of rain: https://www.youtube.com/watch?v=jX6kn9_U8qk
- ▶ Have students break into small groups to share what they think they experienced.
 - ▶ Ask these questions:
 - ▶ What did you hear?
 - ▶ Do either of the sounds you heard remind you of any scents?
 - ▶ How does hearing these sounds make you feel?
 - ▶ Have students share their answers with the class.
- ▶ Ask students what senses are missing when they only hear the sounds of popcorn popping or rain falling.
 - ▶ Response examples:
 - ▶ sight, smell, taste
- ▶ If applicable and available, pass around recently popped popcorn to add additional senses (sight, smell, taste).
 - ▶ Have students share this experience.

EXPLANATION

- ▶ Explain to students that VR is a computer-generated environment that they can physically interact with. VR environments can be designed or recorded by a camera that uses a 360-degree viewer. The recordings can be watched with a VR phone app or with a headset. VR is usually heavily focused on the sights and sounds of a particular location, but scents and tastes are up and coming in the newer technologies.
- ▶ Watch this YouTube video to further explain VR: <https://www.youtube.com/watch?v=i4Zt3JZeibg>
- ▶ The most commonly used VR equipment:
 - ▶ Smartphones and VR applications with Google Cardboard
 - ▶ VR headsets—Oculus, Sony PlayStation VR
- ▶ VR allows you to travel to a real place, to a time from your life (past or present), or to an imaginary new place.
- ▶ With the equipment in the VR book, Jae and Felicia are able to see Egypt, smell the spices in the market, and hear the sounds of the people around them. They can walk around, turn 360°, and feel like they are actually in Egypt.
- ▶ Ask students to explain how they think VR can help them or someone else.
 - ▶ Response examples:
 - ▶ it can help them overcome fears, play games, explore places (real and imagined), exercise, watch movies, attend live events, learn a new skill, travel

- ▶ Many different professionals are needed to create a VR world: artists, psychologists, designers, computer programmers, storytellers, and writers.

ELABORATION

- ▶ Ask students to write a short play about their favorite place.
 - ▶ Who will be in the play?
 - ▶ Response example: Jae and Felicia
 - ▶ Describe where it takes place and what would be included in the scenery.
 - ▶ Response example: Egypt, with pyramids, sand, the market, etc.
 - ▶ What will your play be about?
 - ▶ Response example: overcoming fear and traveling to a new place to learn information
- ▶ Have students write or describe one page of dialogue between two people.
- ▶ Ask students how they can get their audience to feel as if they are in that location.
- ▶ Have students share their short plays with the class.

EVALUATION

- ▶ Share the “favorite place” drawings to demonstrate that VR can convey information about another place or time.
- ▶ Discuss with students what they’ve learned about VR and what it can be used for.
- ▶ Have students rate how immersive the play experience was upon sharing the short plays with their classmates.