VICTORYXR

VR SIMULATION

TEACHER SUPPORT PAGE & CURRICULAR GUIDE

Adult CPR VR Simulation

TARGET AUDIENCE	ESTIMATED DURATION	MODULE TYPE
High School Health & Physical Education, Career & Technical Education (CTE) Health Science, First Aid/CPR Certification Prep	45–60 Minutes (1 Class Period)	Interactive Virtual Reality (VR) Simulation

1 Executive Overview & Learning Objectives

This VR simulation provides students with an interactive environment to practice adult Cardiopulmonary Resuscitation (CPR) protocol. By practicing key decision-making steps, scene assessment, and physical techniques in a virtual setting, students build muscle memory and situational readiness before or alongside hands-on mannequin training.

Primary Learning Objectives:

- **Recognize Cardiac Arrest:** Identify signs of unresponsiveness and absence of normal breathing within 10 seconds.
- **Initiate Emergency Response:** Command a bystander to call 911 or call emergency services directly.
- **Master Compression Mechanics:** Locate proper hand placement, maintain a rate of 100–120 compressions per minute, and deliver compressions at a depth of at least 2 inches.
- **Execute Airway & Breathing Steps:** Perform the head-tilt/chin-lift maneuver, seal the nose, and deliver 2 rescue breaths.
- **Maintain Cycle Continuity:** Continue cycles of 30 compressions and 2 rescue breaths until an AED arrives, medical personnel arrive, or signs of life return.

2 VR Simulation Flowchart & Step-by-Step Sequence

Step #	In-Simulation Action	Key Learning Point & Clinical Rationale
1. Introduction	Simulate scenario setup; select "Continue".	Immediate CPR after cardiac arrest can double or triple a victim's chance of survival.
2. Check Unresponsiveness	Tap shoulders, shout, or perform a chest/knuckle rub.	Confirms total unresponsiveness before taking invasive emergency actions.
3. Call Emergency Services	Command a bystander or place call to 911.	Ensures advanced medical care (EMS) is dispatched without delay.
4. Position & Airway Setup	Shake shoulders gently; tilt head back and lift chin.	Opens the airway by moving the tongue away from the back of the throat.

Step #	In-Simulation Action	Key Learning Point & Clinical Rationale
5. Check Breathing	Listen and observe chest movement for up to 10 seconds.	Occasional gasping is not normal breathing; lack of normal breathing mandates immediate CPR.
6. Chest Compressions	Place heel of hands in middle of chest; give 30 compressions (2" deep, 100–120 bpm).	Maintains vital blood flow to the brain and cardiac tissue.
7. Rescue Breaths	Pinch nose shut, seal mouth, and deliver 2 rescue breaths.	Oxygenates blood being circulated by compressions.
8. CPR Cycles	Repeat 30:2 compression-to-breath ratio.	Sustains oxygenation until AED, EMS, or sign of life occurs.
9. Debrief / Return	Review performance stats and return to home menu.	Reinforces procedural execution and addresses errors.

3 Instructional Flow & Lesson Plan

1 Phase 1: Pre-VR Setup & Anticipatory Set — 10 Minutes

- **Hook Discussion:** Ask the class: *"What is the very first thing you should do if someone collapses unexpectedly next to you?"* (Highlight checking unresponsiveness and calling 911).
- **Concept Review:** Briefly cover the 30:2 compression-to-breath ratio and target tempo (100–120 bpm).
- **Safety & Controller Orientation:** Review boundary zones, headset adjustment, and controller gestures for pinching, tapping, and pushing.

2 Phase 2: VR Simulation Execution — 20–25 Minutes

- Students complete the simulation individually or in pairs (one active in VR, one acting as peer observer/checklist recorder).
- **Teacher Observation Checklist:** Observe whether students limit breathing checks to under 10 seconds and maintain proper rhythm during compressions.

3 Phase 3: Debrief & Classroom Reflection — 15 Minutes

- **Debrief Questions:**
  - Why is it critical to pinch the nose completely shut before delivering rescue breaths?
  - What three conditions allow a responder to stop giving CPR cycles? (AED becomes available, EMS/trained responder arrives, or the victim shows signs of breathing/life).
- **Hands-On Transition:** Have students apply the VR sequence to physical feedback CPR mannequins to practice physical resistance and hand force.

4 Assessment Rubric

Assessment Criteria	Proficient (3 pts)	Developing (2 pts)	Needs Improvement (1 pt)
Scene Safety & Response	Immediately checks unresponsiveness and directs a 911 call correctly.	Checks unresponsiveness but hesitates or forgets to prompt 911 call.	Omits responsiveness check or emergency call completely.
Airway & Breathing Check	Tilts head/lifts chin correctly; checks breathing for ≤ 10 seconds.	Tilts head/lifts chin but assesses breathing for too long (> 10 seconds).	Fails to open airway or skips breathing assessment before compressions.
CPR Execution (30:2)	Delivers 30 accurate compressions at 100–120 bpm followed by 2 sealed rescue breaths.	Compression rate/depth is inconsistent or rescue breaths lack complete nose seal.	Incorrect ratio used; compressions too slow/shallow or rescue breaths omitted.

5 Key Educator Notes

Common Student Misconception: Students often mistake agonal gasps for normal breathing. Remind them that occasional, irregular gasping is a sign of cardiac arrest and requires immediate CPR.

Physical Realism Note: VR excels at teaching protocol steps, timing, and sequence recognition. Pair the VR simulation with physical CPR mannequins so students build the actual physical chest compression force required (at least 2 inches deep).