

# Hologram Zoo Teaching Guide – Years 7–8 (STEM Focus)

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## Program Summary

This STEM-focused program introduces students to the science and technology behind the Hologram Zoo experience. Students explore the principles of light and laser projection, the role of polarisation in 3D imagery, and the creative and technical processes behind immersive digital environments. Through guided rotations and inquiry-based learning, students engage with real-world applications of physics, optics, and design.

## Connect – Pre-Visit Activities

- Introduce students to key terms: reflection, refraction, polarisation, projection.
- Watch videos or read articles about immersive experiences (e.g., The Lume, Van Gogh Alive).
- Brainstorm: How do illusions work? What's the difference between a real hologram and a projected illusion?

## Understand – On-Site Experience

- Students rotate through:
  - Technology Walkthrough – guided session explaining how the 3D hologram system works.
  - Design & Observation Challenge – observe how motion graphics, timing, and light direction create realism.
  - Green Screen Studio – apply visual layering concepts in a media-rich environment.
- Key focus: perception, visual systems, and technological design.

## Act – Post-Visit Classroom Activities

- Design a concept for an immersive experience (theme park, education, art installation).
- Compare different visual illusion techniques (e.g., Pepper's Ghost, lenticular printing, AR).
- Explore wave behaviour and polarisation using simulations or lenses.
- Create a storyboard or mock-up for a science-focused hologram scene.

## Curriculum Links (Victorian Curriculum – Years 7–8)

- VCSSU103 – Energy appears in different forms and causes change within systems.
- VCSSU104 – Light can be absorbed, reflected and refracted.
- VCSIS111 – Construct and use a range of representations, including graphs and models, to

represent and analyse patterns or relationships.

- VCDTCD044 – Analyse how characteristics of technologies influence design decisions.
- VCDTDS034 – Critique needs or opportunities for designing and investigate and select technologies to produce designed solutions.

### **STEM or Inquiry Extensions**

- Research the difference between true holography and projection-based illusions.
- Build a physical prototype using lenses or mirrors to demonstrate visual distortion.
- Explore careers in experience design, projection mapping, or immersive media production.

### **Teacher Reflection**

Use this space to reflect on student engagement with STEM and visual technologies, conceptual understanding, and group collaboration.