

Pepper's Pyramid (hologram-like) Projector

Materials

Flat, transparent plastic

Scissors

Template for Trapezoid Graph Paper and Ruler

Transparent Tape

Sharpie (fine point)



Directions

- 1) Collect some flat, transparent plastic from the packaging of something you purchased. In this case, a plastic box from purchasing a tape dispenser was used.
- 2) Trace four trapezoids onto the plastic as shown in **Image 1**. (Templates provided or you can draw the trapezoid yourself. 5x5 quad paper is great for having students draw their own trapezoids because 1 cm = 2 squares on the graph paper.)
- 3) Carefully cut out the trapezoids as shown in **Image 2** and then tape them together to form a cone shape as shown in **Image 3**. Try to use a minimal amount of tape.
- 4) Go to YouTube and search for "3d hologram videos". Select one, maximize it to full screen, place your cone in the middle of the screen, shut out the lights and enjoy the show! (See **Image 4**.)

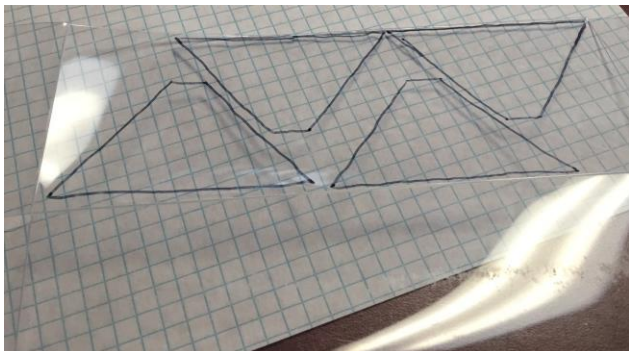


Image 1

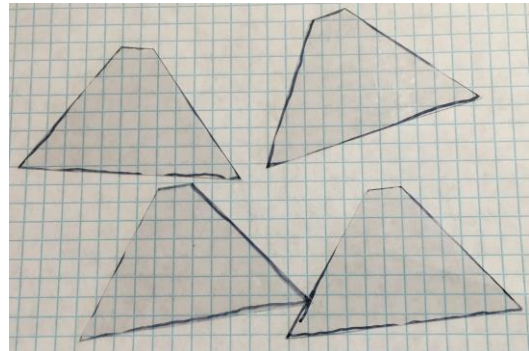


Image 2

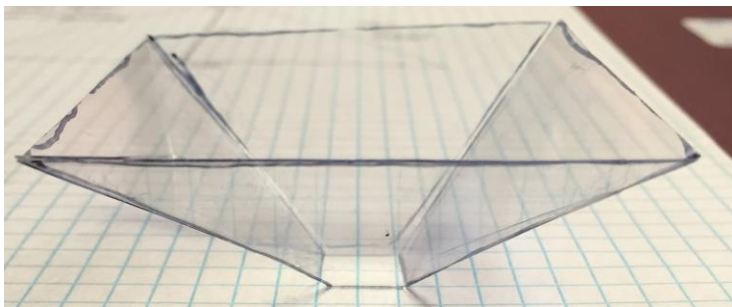
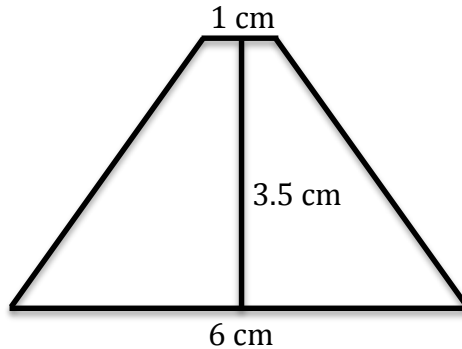


Image 3



Image 4

Templates for Pepper's Pyramid (hologram-like) Projector

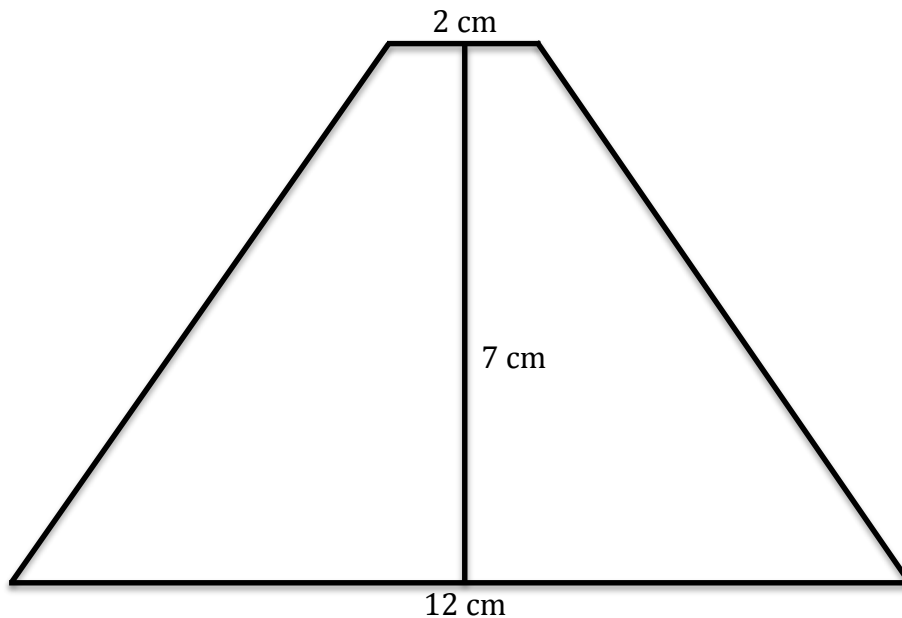


Cell Phone Template

HINT ONE: The darker the room the better!

HINT TWO: View with your eye level with the plastic pyramid! You may have to turn the system over if the video is upside down.

HINT THREE: Fold the projector up flat to keep in your wallet for on demand 3-D shows!



i-Pad or Tablet Template

Adapted from YouTube Video from "Mrwhosetheboss": <https://www.youtube.com/watch?v=7YWTtCsvgvg&feature=youtu.be>

Physics Connection: This illusion, created by a reflection on a transparent surface, comes in many variations. It was named Pepper's Ghost after John Henry Pepper who made it famous in 1862. While not an actual hologram, the illusion does appear 3-dimensional.