

# Visual Displays Magnification Functional Testing

#### **GOAL**

Visitors will discover how tuning the color of subpixels within a visual display can create an apparently continuous image.

#### **MATERIALS**

- Smartphone display screens on smartphones, computers, and other elect
- Printed image of pixel magnification
- 17.5X power magnifier 11 see seed to be seen 1887 x \$5017 to a greene sold to not bloker
- 20-40x pocket microscope
  - Subpixel color mixing device hallowing land without as all one may be valigable gried against

#### **PROCEDURE**

## how much of each color is emitted within the pixels. To our eyes, these different levels of qu-tag

1. Turn on phone and display a photo preferably with both colors and significant amount of white.

crystals are like twisting ladders inside the subpixels. Normally, the crystals twist at right an

- 2. Make sure microscope is set to highest magnification.
- 3. Turn on color mixing device.

### Demonstration taked the light through to the color fillers. When energy is added, they be wish to be be been presented in the light through the light throug

- 1. Ask visitors what they know about how the color display on a smartphone works.
- 2. Show visitors the picture on the phone. Explain that even though the picture looks continuous to our eyes, it is actually made up of tiny individual dots called pixels. Show visitors the printed image of pixel magnification.
- 3. Place the 17.5X magnifier over the screen to show visitors the individual pixels.
- 4. Explain that each pixel is made up of three subpixels red, green, and blue. The computer inside the phone precisely controls the color of these subpixels so that together, they make the pixel appear to be the color that our eyes perceive. If we look even closer, we can actually see these subpixels.
- 5. Help visitors hold the 20-40x microscope to the display (preferably over an area of white) and look into the eyepiece. Ask visitors if they can see the red, blue, and green subpixels.