**Trapping the Light Fantastic**  **[Activity]**
This activity introduces the light beam viewing tank and addresses refraction. Total internal reflection is the principle underlying fiber optics. Inkjet printers also use the refraction of light to determine when cartridges are out of ink. The “Going Further” demonstration is very engaging and highly recommended. It is possible to use an aquarium for this activity and do it as a demonstration. Be sure to instruct students on safe laser pointer usage.

*Answers to Procedure Questions*

**Step 2.** The laser beam can be seen, but it’s barely visible.

**Step 4.** The laser beam is much more visible; the scattering agent scatters the laser light to make it visible from different angle.

**Step 5.**

![Diagram of light refraction](Image)

Step 7. Supercritical.

“Total Internal Reflection” is a good name because the refracted ray is gone. All of the light is reflected.

Going Further
Step 3. The laser beam follows the stream of water.

Answers to Summing Up Questions
1. When traveling from air to water, the beam bends downward, deeper into the water.
2. When traveling from water to air, the beam bends downward, staying closer to the surface of the water.