

Light Obstacle Challenge

This activity was created by Victoria.

In this activity you will bend a ray of sunshine through an obstacle race. Use the materials listed below to complete the following levels! Be careful not to reflect light towards anyone's eyes as it can damage their eyes and be painful.

Pro tip: Closing the curtains allowing only a thin ray of sunshine pass through might help you to see its reflection more clearly.

MATERIALS

- > 2 mirrors or light reflecting objects*
- Glass
- Water
- Prism. Depending on the shape, a glass of water can function as a prism and create a rainbow.
- A target. This can simply be a drawing taped to a wall or something that is already on your wall.

The light from your window is what I call an **"input"**: the information or data that enters a program. An **output** is what is returned after processing that data. In this example, light is interacting with different materials on its way to the target. With each material, the light acts differently, so that when the light exits it (the output) it might look different than what went in (the input).

- Level 1** Place the target 90 degrees from the light source. Use the mirror to hit the target.
- Level 2** Ask someone to place the target at a different / more complex angle. Use one mirror to hit the target.
- Level 3** Use two mirrors to reflect light twice and hit the target.
- Level 4** Place the target where light would naturally hit. Use two mirrors to bend the light in a way that it still hits the target.
- Level 5** Use a mirror to make the light hit a glass of water.
- Level 6** Use a mirror to make the light hit a glass of water. Then use another mirror on the other side to bend the light that passes through the glass of water.
- Level 7** Use a prism to create a rainbow. Sometimes depending on the shape, a glass of water will create a rainbow. Use mirrors to reflect the rainbow - see how many times can you reflect the rainbow.
- Level 8** Use an object that's NOT a mirror to reflect light to your ceiling.
- Level 9** Use your non mirror object to reflect light, then use a mirror to reflect it again so it passes through a glass of water.
- Level 10** Use 3 objects to reflect light through a glass of water, then use 2 more on the other side to reflect the light that crosses the glass.

