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Innovation Starts Here!

**How is Bending Light Used in Semiconductors?**

**Photolithography** is used to put a pattern on the **chip** before etching. **Photo** means light, and **lithography** means printing, so in photolithography, we are printing with light!

Just like with the paper plate stencil you used in the activity, in photolithography we use a special **mask**, which has dark areas and clear areas. The light shines only through the clear areas onto the wafer or chip. The mask is pretty large, like the size of a sandwich, but we want the image to end up much, much smaller (like the size of your fingernail), so we use a series of very powerful lenses.

The lenses are **convex** (curved) and made of glass. When light travels through the air, and then travels through glass, the rays of light bend to create a much smaller image onto the chip. This is known as **refraction**. If you used the magnifying glass in the activity, you saw how the rays of light bent to create a smaller image.

Now you know why bending light is so important in making semiconductors!