Prism
Light

Materials:
- Green and red lasers in stand
- Prism
- Screen or blank wall (not too far away)
- Slide projector
- Slide with narrow slit

Key Points:
- Different colors of light bend different amounts.
- Some shapes and materials (i.e. polyester resin prism) show this better than others.
- White light is made up of all the different colors.

Warnings:
- Don’t shine the lasers at people.
- Handle the prism with care. It takes an entire day to cast a new one, and it involves a significant amount of preparation and work.
- Be careful with the slide projector and the lasers. They are worth a great deal of money and are difficult to repair/replace.
Things to talk about:

- Now we know that light can be bent when it passes through different materials.
- Show them the prism, and describe its shape (triangle, wedge, whatever you prefer)
- The prism not only bends the light, but it bends different colors different amounts.
- Have someone hold the laser stand so the beams are next to each other (horizontal as opposed to vertical)
- Emphasize that the two lasers are different colors (one red, one green).
- Put the prism in the path of the lasers. Hold it so the unfinished surface is facing up.
- You will need to tilt the laser stand down about 45 degrees so the spots will appear on the screen again. Tell the kids this is because the prism bends the light a lot (you can show this by shining the lasers through the vortex generator as in the lens demo).
- Show that the green spot is higher on the screen than the red dot. Take away the prism and again show the kids that the spots are the same height when the prism isn’t bending the light.
- This proves that the prism bends different colors of light different amounts.
- Now turn on the slide projector, (position and focus the image of the slit on the screen)
- Ask the kids what color the light is, and what they think will happen if you put THIS light through the prism.
- Perform the experiment, and show them the rainbow!
- Explain that white light is really all the different colors of light, all mixed together. When you see all the colors together, it looks white. The prism bends each color different amounts (like the green and red lasers) and it lets you see each color separately.