**REFRACTION IN ACTION!**

**STATION 1: Refraction Contraption**

1. In the space below place a plastic block on its large flat side. **Trace the block.**
2. Shine a single ray of light straight at the block to create a normal. **Trace your light ray.**
3. Adjust the ray box so that the light ray hits the block at an angle. **Trace the incident and refracted light rays.**

**Q: What happens? Why?**

**Q: As you increase the angle of incidence, what happens to the angle of refraction?**

**BLOCK**

**STATION 2: Convex Hex**

In the space below, place a convex lens. **Trace the lens.**

Shine a 5-slit ray box at the lens. **Line up the middle light ray with the middle of the lens.**

Add to your diagram below: **Trace all 5 incident and refracted rays.**

**Q: How is a convex lens different from a convex mirror?**

**STATION 3: Oh Behave, Concave!**

In the space below, place a concave lens. **Trace the lens.**

Shine a 5-slit ray box at the lens. **Line up the middle light ray with the middle of the lens.**

Add to your diagram below: **Trace all 5 incident and refracted rays.**

**Q: How is a concave lens different from a concave mirror?**

**Q: How is a concave lens different from a concave lens? Include a picture of both!**

**STATION 4: Simulation!**

Take out your computers and navigate to the following cite: <https://phet.colorado.edu/sims/html/bending-light/latest/bending-light_en.html>

Click the simulation and then **Prisms**.

Select the 5- beam light source (see picture) and place the various lenses listed below and place them in front of the light source.

Draw how light interacts/refracts with the various lenses (***see next page***).

|  |  |
| --- | --- |
| **Trapezoid** |  |
|  |  |
| **Spherical** |  |
|  |  |
| **Convex** |  |
|  |  |
| **Concave** |  |
|  |  |