**Learning Goals** (I started with the sample goals on the sim page, but ordered them to align more with my use of the screens. Also, I felt that some gave away information that I wanted the students to discover via inquiry and I changed the wording in several in particular getting rid of many “how”s, and used “vary” instead of “change”)

1. Describe what happens to light when it shines on a medium.
2. Explain light direction changes at the interface between two media and what determines the angle.
3. Describe the effect of varying wavelength on the angle of refraction.
4. Explain why a prism creates a rainbow.
5. Apply Snell’s law to a monochromatic light incident on the interface between media.

**Sample learning Goals** (on [sim page](https://phet.colorado.edu/en/simulation/bending-light))

* Explain how light bends at the interface between two media and what determines the angle.
* Apply Snell’s law to a laser beam incident on the interface between media.
* Describe how the speed and wavelength of light changes in different media.
* Describe the effect of changing wavelength on the angle of refraction.
* Explain how a prism creates a rainbow.

**Learning Goals addressed per section**

Everyday physics: The question is very open ended; I would expect at least some thing about light changing direction and their observations about real things under water like things look different size and the stick looks broken.

Intro screen questions 1 and 2 goals: A, B

More specifically:

* + wavelength of light decreases in media of more high index,
  + what determines the angle variation in index of refraction :Ray bends towards normal if second medium has more high index of refraction
  + reflected ray is at same angle as incident
  + Intensity of light is divided not equally into reflected and refracted rays. The amount of refraction decreases as the incident angle increases

More Tools screen question 3 goals C (all my questions relate to refraction)

More specifically:

* + Angle variation #1b and incident wavelength (blue is more bent)
  + Speed decreases (more for blue)
  + Students could use the Time tool, but I probably would not recommend it for learners at home.

Prisms screen questions 4 and 5 goals A, B, C, D

Test your understanding question 5 E