A description of light

This activity should be done with the use of the simulation « Waves Intro »
https://phet.colorado.edu/sims/html/waves-intro/latest/waves-intro_en.html

Waves

- Click on the « water » tab
- Position in side view
- Select pulse mode (a single disturbance)
- Select maximum amplitude
- Open the valve by pressing the green button.

A wave is defined as the propagation of a disturbance between 2 points.

1. **PROPOSE a definition of the term "disturbance".**
2. **Take a screenshot of a disturbanc, and show WHAT YOU THINK is the wavefront on this screenshot.**

Periodic waves

- Remain on the "water" tab, still in side view
- Select periodic mode (a succession of disturbances)
- Select maximum amplitude
- Select an intermediate frequency
- Open the valve by pressing the green button.

3. **PROPOSE a definition of the time period of a periodic wave.**

The frequency of a wave is defined as the number of disturbances per second. It is measured in hertz (Hz).

4. **PROPOSE a mathematical formula relating frequency f and time period T (en s).**
5. **Derive a unit equivalent to Hz.**

The wavelength λ of a wave is defined as the distance travelled by the disturbance in one time period. It is measured in meters.

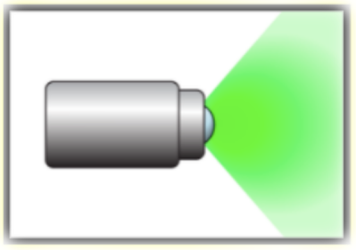
6. **Take a screenshot showing WHAT YOU THINK is a wavelength.**
7. **PROPOSE a mathematical formula relating wavelength and time period.**
8. **Derive a mathematical formula relating wavelength and frequency.**

- Click on the « light » tab

9. **HIGHLIGHT an information that might indicate that color and frequency are linked**
10. **PROPOSE and implement an experiment demonstrating that color affects the wavelength of light**

Measuring the celerity of light

- Remain on the « light » tab.



11. Using the tools provided on the simulation, PROPOSE and implement an experiment to determine an approximate value for the celerity of light.

Note: celerity ≡ speed of propagation.