PROGRESSIVE WAVE - ROPE - EXERCISE with https://www.youtube.com/watch?v=9Hs9jeuDzwg

Act. 1 a) What does the **orange** "curve" represent? . . . . . .

b) What do the **red** and **blue** curves represent? . . . . . .

c) By moving one of **blue** or **red** mark, you can see sometimes **blue** and **red** curves in tandem.

Copy out and complete the following text :

If the marks move together (both on top in the same time, etc), we say they are in . . . . . .

The minimum distance between two points oscillating in this way is called . . . . . .

This distance is traveled by the wave during a . . . . . .

Act. 2 - Place the period cursor "far left".

- Place the red mark on the source S.
- Give abscissas (x in cm) of the points of the **rope** which have the same movement as the source S (indication: when the **blue** and **red** curves overlap).
- What is the value of period T_2 in this case? ("break" box could be ticked)
- What is the value of wavelength λ_2 for this period? . . . . . .
- Calculate the speed of the wave . . . . . .

Act. 3 - Place the period cursor "far right".

- Place the red mark on the source S.
- Give abscissas (x in cm) of the points of the **rope** which have the same movement as the source S (indication: when the **blue** and **red** curves overlap).
- What is the value of period T_3 in this case? ("break" box could be ticked)
- What is the value of wavelength λ_3 for this period? . . . . . .
- Calculate the speed of the wave . . . . . .

Act. 4 a) Compare the values of speed found in activities 2 and 3: . . . . . .

b) How do you describe the environment for which we obtain such a result? . . . . . .

Act. 5 a) x_R **= 10 cm** and x_B **= 120 cm.** Note this delay: $\tau_1 = t_B - t_R =$ . . . . . .

b) Is this delay a multiple of the period (measured in activity 2)? . . . . . .

c) The **blue** and **red** curves will they overlap? . . . . . .

d) x_R **= 10 cm** and x_B **= 110 cm.** New delay: $\tau_2 = t_B - t_R =$ . . . . . .

e) Frequency ***f*** of oscillations for this period: . . . . . .