Instructor's guide

This activity follows Introducing quantum mechanics.

Write a function $y(x, t)$ that describes the motion of this string:

Missing /var/www/paradigms_media_2/media/activity_media/wave-sketch_IhcmUnF.pdf

Figure 1: A wave with an amplitude of 0.1 m, it travels to the right, and has a wavelength of 8 m. In one second it travels half a meter to the right.

You may put the origin of your coordinate system wherever you want. In your final expressions, do not use any symbolic variables except for y, x and t. Please do remember (as always!) to include any units that are associated with constant numbers.

First try to construct this wave on your big whiteboards and then you can check your answer by putting it into Desmos.

Extra fun Show that your answer is a solution to the wave equation:

$$\frac{\partial^2 y}{\partial t^2} = v^2 \frac{\partial^2 y}{\partial x^2} \tag{1}$$