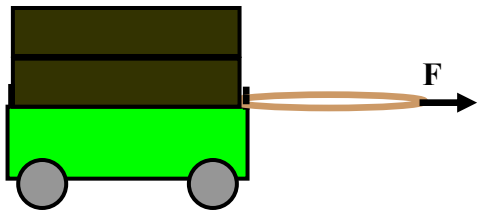
Cart, Bricks, and Bands

A Physics class has been given the task of conducting an experiment to determine the acceleration-mass-net force relationship. The teacher has provided each lab group the following materials:

- a cart with wheels
- six bricks (each having the same mass as the cart)
- a set of six identical elastic bands (easily stretchable from their rest length of 10 cm up to a length of 50 cm)
- a meter stick
- a stopwatch
- a motion detector that interfaces with computer software for measuring position and velocity as a function of time
- ticker tape and a ticker tape timer (places a tick on the tape every 0.10 seconds as it is pulled through the timer)

The teacher demonstrates to the class how to use an elastic band to apply a constant force to accelerate the cart (loaded with a couple of bricks). She explains that the force applied to the cart depends on the amount that the bands are stretched (relative to their rest length) and the number of bands that are used.



Use this information to think through the design of your experiment.

