

# Soda Straw Wave Machine



**QUESTION:** What factors affect wave frequency?

**MATERIALS:**

drinking straw - 30  
metric ruler

paper clips  
transparent tape

**PROCEDURE:**

1. Attach a paper clip to each end of every straw.
2. Measure out about 1 meter of transparent tape.
3. Stick a straw across the tape about every 3 cm, so the middle of the straw lies on the tape.
4. Place a second, identical length of tape over the top of the straws to cover the sticky part of the first tape.
5. Hang the straw strip from a desk or table and pull it taut. Give one of the straws at the top or bottom a tap to start a wave.
6. Record what happens to the wave frequency when the tension is increased and decreased.
7. Put another paper clip into the end of each straw and record what happens to the frequency.
8. Remove all the paper clips from the end of each straw and record what happens to the frequency.

**DATA:**

FACTOR	EFFECT ON FREQUENCY
Tension increased	
Tension decreased	
Mass increased	
Mass decreased	

**QUESTIONS:**

1. What kind of energy waves are produced by your straw wave machine?
2. How does tension affect frequency? Why?
3. How does mass affect frequency? Why?