

Observing Wave Characteristics: Creating a Wave Model

You and your child will create a wave model using household materials to observe characteristics of a wave.

Materials you need include the following:

- 80 straws or wooden skewers
- Masking tape

Directions:

On a flat surface, roll out approximately 10 feet (120 inches) of masking tape. The sticky side of the tape should face up. Place all the straws along the tape. The center of each straw should be placed along the length of the tape, evenly spaced 3 or 4 inches apart.

Once the straws have been placed along the length of the tape, roll out another 10 feet of tape on the top of all the straws so that each straw is secured between the two pieces of tape.

Carefully lift the wave model from the floor or table. Each of you should hold an end of the wave model and stretch it out, creating gentle tension.

Demonstrate the activities below and take note of the movement of energy along the length of the tape when you create a disturbance.

1. When one person gently taps one end of the wave model, what happens?
2. What happens to the wave when it gets to the other end of the tape?
3. Take note of the speed of the waves when you loosen the tension of the tape. Does the wave travel faster or slower? What happens when the tape is extended, creating tension between the two people? Does the wave travel faster or slower?
4. Take note of the characteristics of the waves when both people slightly twist each end of the wave model. Point out the wavelengths along the wave model. How can you control your wave model to observe the amplitude of the waves?