

Discovering Waves

Materials (per group)

basin or large bowl
aluminum or plastic bottle cap
rope (3-4 m)
blow dryer

Procedure

Part A

1. Tie one end of the rope to a doorknob or other stationary object. Take the free end of the rope and stand so that the rope is not quite fully stretched.
2. Quickly jerk the free end of the rope. Notice the movement of the rope.
3. Let the rope come to rest. Move your hand up and down continuously for several seconds. Observe the motion of the rope.
4. Alter the movement of your hand so that it goes higher than before. Again change the movement of your hand so that it goes lower than before. Observe the changes in the motion of the rope.
5. Move your hand up and down much faster than before. Observe the motion of the rope.

Part B

1. Fill a basin or large bowl with water.
2. Drop an aluminum or plastic bottle cap in the middle of the water.
3. Remove the bottle cap from the water. Hold the blow dryer at an angle just above the surface of the water. **CAUTION:** *Never touch an electrical appliance or outlet with wet hands.* Turn the blow dryer on low speed and observe what happens to the water.
4. Hold the blow dryer at different angles and distances from the water. Then try changing the speed of the blow dryer. Notice the changes that occur.

Observations

Part A

1. What happens when you jerk the rope?

2. What happens to the rope when you continue to move your hand up and down?

3. How is the motion of the rope affected by moving your hand higher and lower?
