Forms part of the Gr 10 Physical Sciences 3-in-1 Class text and Study Guide.
See p. 82 MODULE 2 TOPIC 1 Unit 1 for the theory.

PRACTICAL DEMONSTRATION

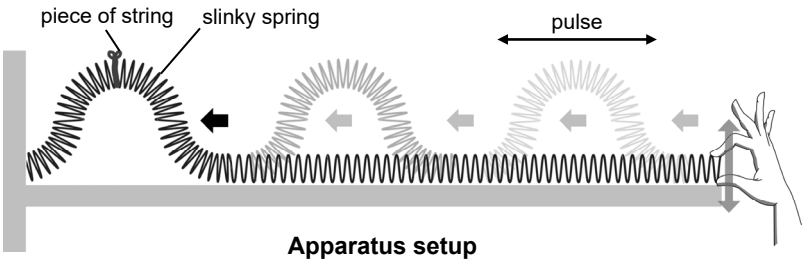
Transverse pulses

Materials

- slinky spring or a heavy rope
- piece of string

Method

1. Let a slinky spring (or rope) rest on a smooth surface like a table.
2. Attach the one end of the spring to a fixed point and flick the other end quickly to one side and then back again. Observe the shape of the disturbance and what happens to it.
3. Tie a piece of string to one coil. Flick the one end of the spring in the same manner as before and observe what happens to the string.



Apparatus setup

Observations and discussion

- Your hand moves the first coil at the end of the spring to the side.
- The successive coils of the spring then move to the side, one after another, and the disturbance is propagated to the other end of the spring.
- The disturbance that moves through the spring is called a **pulse**.
- The piece of string represents one particle in the spring (medium). Notice that the pulse moves along the whole length of the spring, but the piece of string only moves to the side and back.

NOTE

The medium does not create the pulse and does not move/travel with the pulse. It only carries the pulse.

Conclusion

- Energy is transferred to the particles in the spring from one point to another by means of a disturbance (sideways flick).
- The pulse travels forward along the spring, but the coils of the spring, i.e. the particles of the medium, move sideways, perpendicularly, to the direction of propagation of the pulse.
- Such a pulse is called a **transverse pulse**.