

Waves along a line of students

Class experiment

Introduce transverse and longitudinal waves with a kinesthetic experience. This can help students to understand and remember what each of these wave types are.

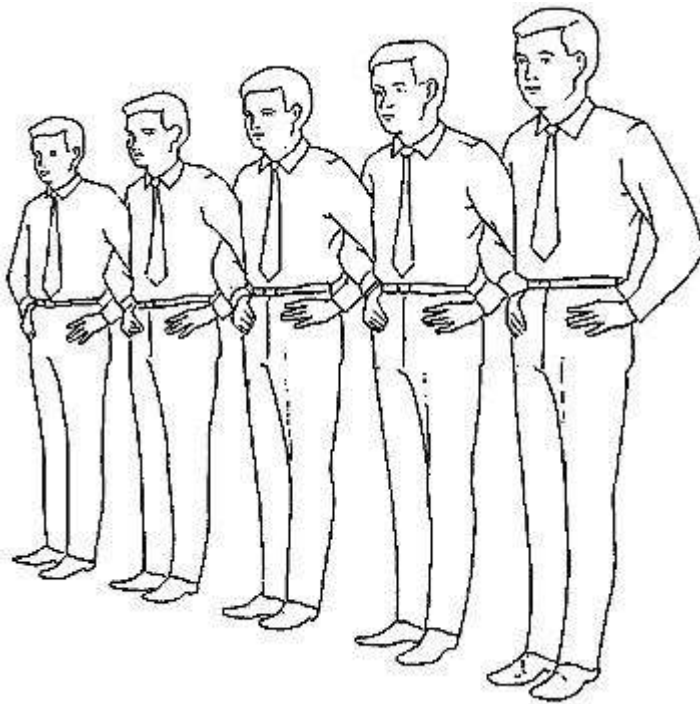
Apparatus and materials

- *Students*

Safety

[Read our standard health & safety guidance](#)

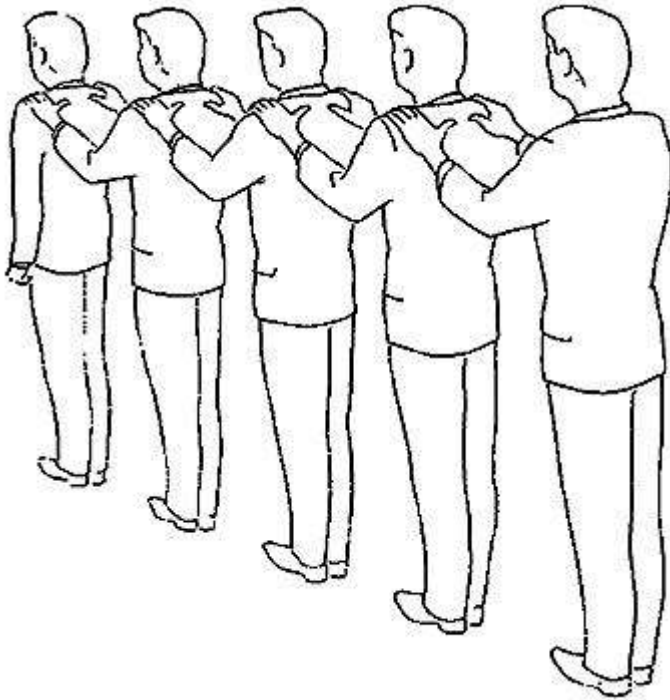
Procedure



Students stand side to side and link arms in a line. Send gentle transverse waves and pulses down the line.

For longitudinal waves and pulses, students all turn right (or left) and place their

hands on the shoulders of the student in front, with elbows kept bent.



idealised students!

Teaching notes

1 To carry out these experiments successfully, you will need class discipline almost at the military parade ground level. They do illustrate clearly, however, the motion of particles in a medium that constitutes a passing wave.

1 With students in the second arrangement, you could ask the students to imagine what happens when a medium is strained beyond its elastic limit.

1 From the rear of the line, imagine that the end student is given a good shove to send a strong pulse down the line. Think what would happen next. When the students have figuratively 'picked themselves up', discuss the difference between this pulse and all the others so far: that the particles did not, in this case, return to their original places.

This experiment was safety-checked in February 2006