

# NEXT-TIME QUESTION

CONCEPTUAL Physics



Does the wind affect the pitch of a factory whistle you hear on a windy day?

If so, why?

If not, why not?



ARBOR SCIENTIFIC  
TOOLS THAT TEACH.

Hewitt  
Draw it!

# NEXT-TIME QUESTION

Does the wind affect the pitch of a factory whistle you hear on a windy day? If so, why? If not, why not?



Answer: no

The wind does not affect the pitch. The wind does affect the speed of sound because the medium that carries the sound moves. But the wavelength of the sound changes accordingly, which results in no change in frequency or pitch. This can be seen by an analogy:

Suppose a friend is placing packages on a conveyor belt, say at a "frequency" of one per second. Then you, at the other end of the belt, remove one package each second. Suppose the speed of the belt increases while your friend still places one package per second on the belt. Can you see that the packages (farther apart now) will still arrive to you at a rate of one per second?

