1. Nadine has made a musical instrument with three stretched strings on a metal tin. She wants to improve it.
   a. What can she do to the strings to make the sound louder?
   
   b. All the strings make a similar-pitched note when plucked. How can she change a string to make it higher pitched?

2. Jack is investigating sound with a microphone and a cathode ray oscilloscope (CRO).
   Look at patterns A, B and C below.
   Which pattern shows:
   a. the lowest-pitched note?
   b. the highest-pitched note?
   c. the loudest note?
   d. the softest note?

3. Complete these sentences using the words below.
   Sound is caused by __________________. These can pass through
   __________________, __________________ and __________________ but not through a
   __________________ because there are no __________________.
Sound and hearing (continued)

4 These statements describe how the ear hears sounds. Put them in order by writing numbers in the boxes.

- Electrical signals travel along the nerve to the brain.
- The tiny ear bones vibrate too.
- The eardrum vibrates.
- The vibrations enter the ear.

5 Amy is seven years old. She tells her family that the television has been left on. There is no picture or sound, but she can hear the high-pitched whistle that televisions give out.

a Why can Amy hear the television whistle when her parents can’t?

b Amy’s great-grandma is 90 years old. Her granddad is 62 and used to work in a steelworks. She has a friend at school who uses a hearing aid. All these people have hearing loss for different reasons. Suggest a reason for each one.

great-grandma
granddad
friend

c Amy has an older brother who goes to rock concerts. Afterwards he says it feels as if his ears are full of water – he can’t hear clearly. Why is this?

d He says it doesn’t matter because he can hear the next day. Is he right? Explain your answer.

6 There are lots of examples of noise pollution in our modern world. Suggest a way of reducing the noise in each of these situations.

a inside a house close to a runway where a jet aircraft is taking off

b for the operator of a pneumatic drill

c inside a noisy primary school classroom