Bad Vibes

Bad Sounds Enquiry

That's really bad!

What sound really gets on your nerves? Fingernails on a blackboard? A baby crying? Mobile phone ring tones? In this enquiry you will find out what sounds people really hate. Some of this work has already been done by Professor Peter Cox at Salford University. He has collected horrible sounds and asked people to rate them.

It is impossible to control the variables fully in this enquiry so we need to sample the responses from a large number of people. Decide on a suitable sample size. Be prepared to change the sample size if you need to later on. You need to design a data collection sheet. An example data collection sheet has been done for you.

Questions

1. Why is a large sample size important?
2. Which sounds do you think will be the worst in the survey?
3. What makes a sound bad? Is it the sound itself or something it makes you think about?
4. How could you collect evidence to find an answer to question 3?
5. Does the order in which people hear the sounds make a difference to how unpleasant they think they are?
6. Is a combination of two bad sounds worse than one bad sound on its own?
7. Does gender have an effect on the judgements made?
8. How reliable do you think your data is?

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Sample data collection sheet

You may need to change this data collection sheet to match the data you want to collect.

Sound	How bad is the sound?			
	OK	Bad	Very Bad	Awful!
Aircraft				
Baby crying				
Barking dog				
Dentist's drill				
Polystyrene				
Violin				
Aircraft + Baby crying				
Aircraft + Barking dog				
Aircraft +Dentist's drill				
Aircraft + Polystyrene				
Aircraft + Violin				
Baby crying + Barking dog				
Baby crying + Dentist's drill				
Baby crying + Polystyrene				
Baby crying + Violin				
Barking dog + Dentist's drill				
Barking dog + Polystyrene				
Barking dog + Violin				
Dentist's drill + Polystyrene				
Dentist's drill + Violin				
Polystyrene + Violin				

Method

You have two presentations that include a selection of Professor Cox's bad sounds.

Bad Sounds Collection 1: Single sounds
Bad Sounds Collection 2: Combined sounds

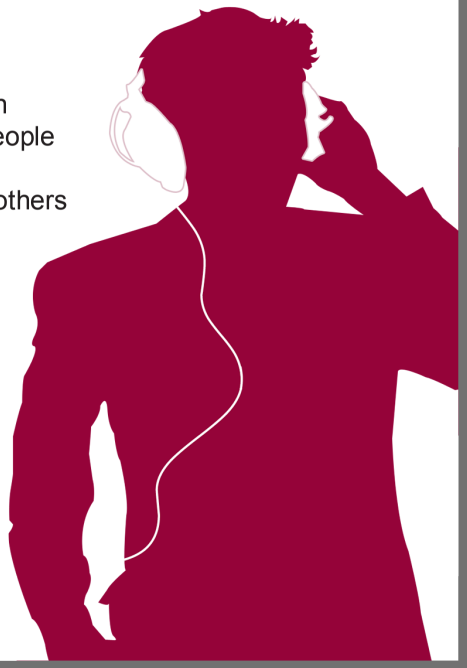
1. Play the sounds in Collection 1 to volunteers. Ask them to rate the sound on a scale from 1 (OK) to 4 (Awful!).
2. Note down their responses in your data sheet. You could use a pencil for males and a pen for females or choose another way to note down this data.You might want to ask people what makes the sound 'bad'. Is it the sound itself or something it makes them think about?
3. Repeat the test with enough people to give you a reasonable data set. 30 is a good number. You may want to work with a partner and gather 15 answers each to save time.
4. Does the order in which people hear the sounds make a difference to how unpleasant they think they are?
5. Does gender have an effect on the judgments made?
6. Once you have completed 'Collection 1' you could try 'Collection 2' (the combined sounds).
7. Work out the total scores for each sound. The higher the score the worse the sound.
8. Look at your results and use them to answer the questions on the *Investigating Bad Sounds* worksheet.

Science Facts

Some people are more sensitive to sound than others. They hear sounds louder than other people

Some people are more easily distracted than others when they are listening to sounds.

People associate different things with different sounds.

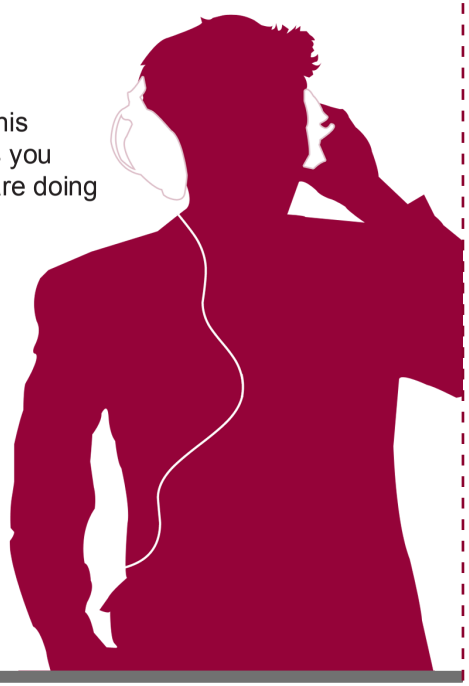


Need a Clue?

Draw up a good data table before you start. This makes it easier to collect evidence and makes you less likely to miss important things while you are doing the enquiry.

Headphones may be useful to help people concentrate on the sounds you are testing.

The variable you are changing is the source of sound. How will you try to control other variables?



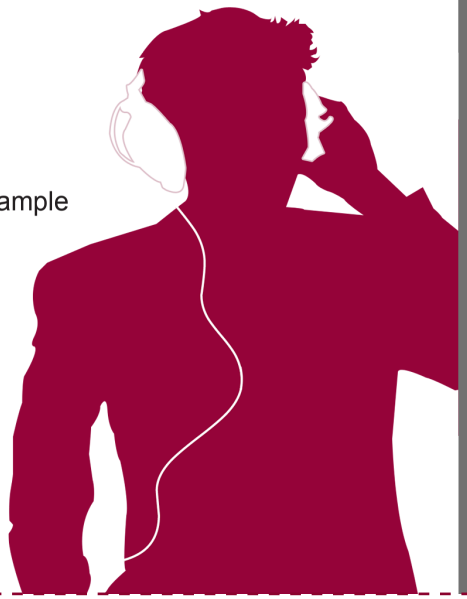
Glossary

Data
Pieces of information.

Value
A measurement of a particular variable, for example the values people give to different sounds.

Variable
A variable can change in an enquiry to have different values. In this enquiry gender is one **variable**, (it can have the value 'male' or 'female').

Reliable
If repeated measurements are close together, then the data is probably reliable. You can have more confidence in conclusions that are based on reliable data.



More Clues

Think about working in a pair - if you each collect results and then add them together you will have a larger data set.

But make sure you use the same method to collect the data or it will not be possible to combine the results!