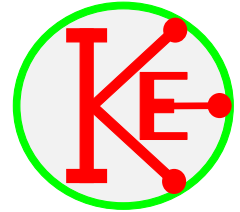


## Investigation of a Thermistor.



**SAFETY ISSUES.** Freezer spray can reduce the temperature to  $-70^{\circ}\text{C}$ . This can result in serious damage to the skin if touched. Freezer spray must never be sprayed on any part of the body and any object cooled with Freezer spray must be allowed to warm up before being touched.

- (a) Connect a thermistor between the CONTINUITY and COMMON terminals using crocodile clip leads. What do you hear?

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How does the pitch change if thermistor is warmed with a hair dryer?

.....

What has happened to the resistance of the thermistor?

.....

- (b) Cool the thermistor with ice (or freezer spray - NOTE SAFETY ISSUES ABOVE). How does the sound from Squeekie change?

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What has happened to the resistance of the thermistor this time?

.....

- (c) Complete the following sentences.

The ..... of a thermistor changes with temperature.

When hot, the resistance of the thermistor is .....

When cold, the resistance of the thermistor is .....

### Further investigations.

- (d) By using books or the Internet for research:-

- (i) draw the electrical symbol for a thermistor in the space below. Remember to state where you found the information.

.....

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- (ii) name the material that is used to make thermistors.  
Remember to state where you found the information.

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- (e) Connect the thermistor the other way round to Squeekie.  
Does it make any difference? Try to explain your answer.

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- (f) The thermistor you have used is described as being a

*negative temperature coefficient (ntc) thermistor*

- (i) Suggest why it has this description.

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- (ii) Describe the behaviour of a positive temperature coefficient thermistor.

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