

Transformers: Homework Planning Sheet

This is your homework and must be completed by lesson 3.

Title of Investigation: The potential differences across the primary and secondary coils of a transformer are related by the equation:

$$V_p = V_s \times \frac{n_p}{n_s}$$

Research a method which can be used to determine how the number of coils on the secondary in a transformer affects the voltage.

What to research	Link/Resource
Background information context	http://www.gcscience.com/pme23.htm http://www.schoolphysics.co.uk/age14-16/Electricity%20and%20magnetism/Electromagnetic%20induction/text/Transformer_/index.html http://www.youtube.com/watch?v=_MiPEHrHQRo http://www.bbc.co.uk/schools/gcsebitesize/science/add_ocr_21c/electric_circuits/mainselectricityrev5.shtml http://physicsnet.co.uk/gcse-physics/transformers/ http://www.cyberphysics.co.uk/topics/magnetsm/electro/Transformer/trnsfrmr.htm
Method	http://www.nuffieldfoundation.org/practical-physics/step-transformer http://www.innovativeeducation.org/isa-preparation.html http://www.google.co.uk/url?sa=t&rct=j&q=transformers+investigation+&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.ktaggart.co.uk%2Fphysics%2FWorksheets%2FKS3%264%2FElectricity%26Magnetism%2FTransformerTurnsRatioExperiment.doc&ei=-ECfUsHXO8iN7AajgoHgBg&usq=AfQjCNHgEEenEaIDi8hzBP50k9IUzi6Vuw&sig2=OAcMPMcTVKbYH7qSkhhAgA

Tasks:

1. Describe **briefly** how you would carry out a **preliminary investigation** to find suitable values to use for these variables.

You should also explain how the results of this work will help you to decide on the best value for this variable.

2. Describe how you plan to do your investigation to test the hypothesis given.

You should include:

- the equipment that you plan to use
- how you will use the equipment = method
- the measurements that you are going to make
- how you will make it a fair test.
- a risk assessment

3. In your research you will have found other methods you could have used.

Briefly outline **one other** method you could have used.

Explain why you chose **not** to do this method.

4. Name **two** sources that you used for your research – be very specific

Which of these sources was the more useful, and why?

5. In this investigation, you will need to control some of the variables.
Write down **one** variable that you will need to controlled.
6. When you have completed your investigation, you will be asked to share your results with others.
Explain the advantages of sharing your results with others.
7. Draw a simple table that you could record your results in. You must include headings and units