Pupil worksheet

Electrical behaviour
What were you doing on December 7th at 6pm? Were you at home? Maybe you were helping to cook the dinner or watching TV. Were you listening to music or doing the ironing?

Whatever you were doing you were using some of the most expensive (and polluting) electricity of the year.

Demand for electricity from the National Grid has to be balanced with supply. Peak demand typically occurs on winter evenings. As we start to shut down our highly polluting coal power stations, we could be in danger of not being able to supply enough electricity at peak times.

Dr Philipp Grünewald at the University of Oxford is researching into methods that could help solve this problem. He is asking volunteers to use a recorder on their electricity meter and carry out a survey to collect data about what electrical appliances households are using and when.

He will use this information to work out if any of the electricity consumption could be avoided or moved to a different time of day. Would you stop cooking dinner? Probably not. But you might delay putting on the dishwasher.

Your household can sign up to be part of the METER project by visiting the website: http://www.energy-use.org/

Motivation and incentives

The next stage of the study would be to find out what could motivate people to make these changes to their behaviour.

Volunteers would get a message on their mobile phone during peak demand. This could either be a reward such as money if they change their usage or information to tell them how others are doing e.g. ‘your neighbour achieved a 9% reduction – can you beat that?’

Their response would be recorded by the recorder on their meter.

Your task

Design a study based on a research question.

This should be based on which incentives will work best to motivate people into changing their electricity consumption habits during peak demand.
### Key Stage 5

#### Incentives

**Planning the study**

*State your aim:*

*State your research question (What relation exists between 2 or more variables?):*

*Independent variable (IV)*

*Operational definition (how it will be measured)*

*Dependent variable (DV)*

*Operational definition*

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| Extraneous variables (variables, other than the IV that can affect the DV in some way) |
| How these will be controlled |
| |
| Develop a working hypothesis. (Write an expectation/prediction about how the IV will impact the DV) |
| Explain how your research question is: |
| Reliable (i.e. not a one time event) |
| Valid (i.e. is able to answer the research question) |

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