**Ways of Investigating the brain- Flip 7**

In this flip your task is to develop an understanding of the various ways in which scientists will study the brain. There are four methods that you need to be aware of for the course, fMRI, EEG, ERPs and post-mortem examinations. Watch the video clips, pause when necessary, (as well as using your bio-psychology pack) and answer the following questions on each of the following procedures.

* **fMRI**

**Watch this video on fMRI:** [**https://www.youtube.com/watch?v=Rb\_mdzgw-Jc**](https://www.youtube.com/watch?v=Rb_mdzgw-Jc) **(stop at 2 minutes 41 seconds)**

**Answer the following questions:**

1. What does fMRI stand for?
2. What does it mean when a brain area is more active?
3. What are the problems with trying to measure brain activity from the scalp?
4. What happens to oxygen levels when a neuron becomes more active?

* **Watch this video on fMRI:** [**https://www.youtube.com/watch?v=lLORKtkf2n8**](https://www.youtube.com/watch?v=lLORKtkf2n8) **(stop at 2 mins 40 seconds)**

**Answer the following questions:**

1. In order to get an accurate fMRI scan what does the patient have to be careful to do?
2. What does the fMRI measure?
3. What can we do with that information?
4. What part of the brain is active when the man in the video imagines playing tennis?

* **EEG**

**Watch this video on EEG:** [**https://www.youtube.com/watch?v=I3j2VrhqTAA**](https://www.youtube.com/watch?v=I3j2VrhqTAA) **(stop at 4 minutes 40 seconds)**

**Answer the following questions:**

1. Why do we use EEG?
2. Why is EEG a good method?
3. What does temporal resolution mean?
4. How does EEG work, on a basic level?
5. What is the most important part of the kit? How many electrodes does it have?
6. What happens to the brain waves when the individual blinks?

**Event –related potentials (ERPs).**

**Watch the following short clip on ERPs (use your booklet also) and answer the following questions (from 4:25 to 6:25)**

[**https://www.youtube.com/watch?v=0PokyYvuL7Q**](https://www.youtube.com/watch?v=0PokyYvuL7Q)

1. In what way is ERP *related/similar* to EEG?
2. What is the key *difference* between EEG and ERP?
3. Why is the stimulus presented hundreds of times?
4. What is graphed over a period of time?
5. Do ERP’s have good *temporal resolution* or *spatial resolution?*
6. *Using your pack for this question page 26 –* Research has shown various forms of ERP (waves) what types of cognitive processes have they been linked to?

* **Post-mortem examination**

**Read the information on post-mortem examinations in your information booklet (page 27) or use the internet to answer these questions:**

1. What is a post-mortem?
2. Why or when would a post-mortem examination be carried out?
3. Areas of damage in the brain are carried out, but why exactly?
4. What is **one** of the weaknesses of a post-mortem examination?

* Watch the video ‘Dissecting brains’ on psych205 (stop at 5 minutes) and take notes on the ways in which the Professor carries out his analysis of a brain.

Notes: