Main Sections of a Scientific Paper:

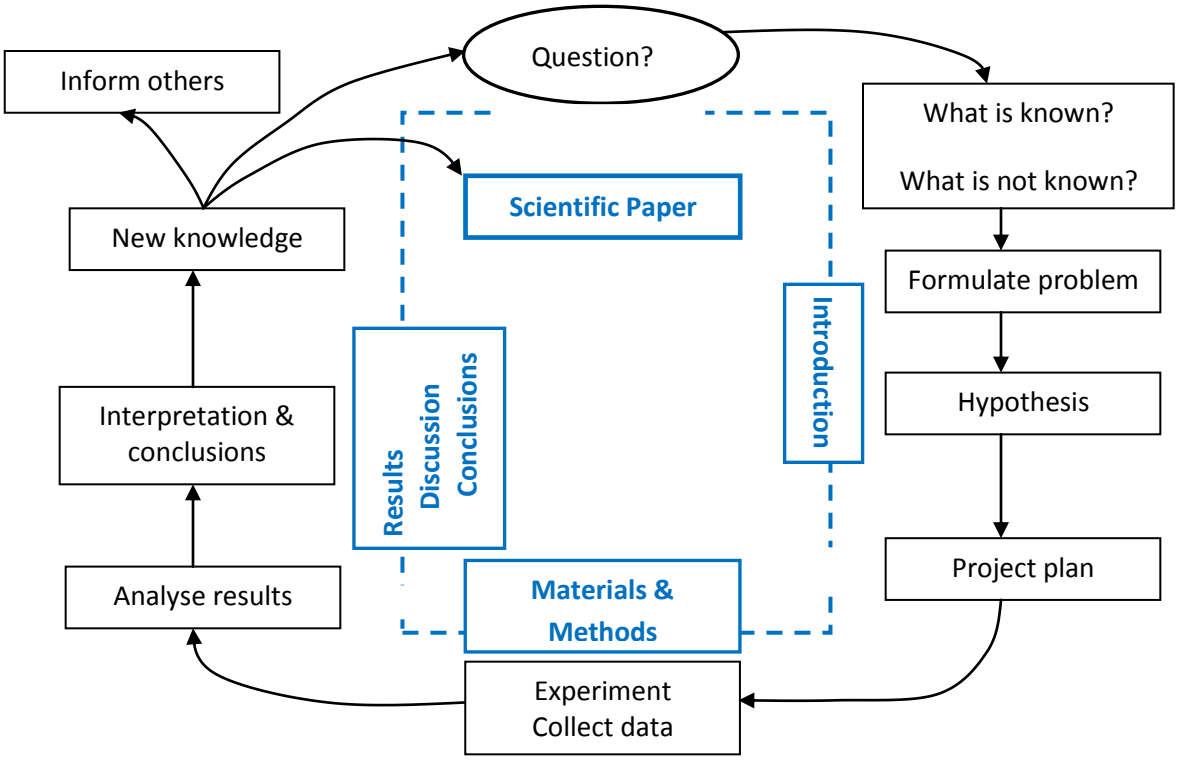

Figure 1: The Research Process: The outer circle depicts the major steps in the research process, the inner circle the corresponding sections of a scientific paper (Taken from: Malforms, B., *et al.,* 2004, p5).

Title:	What the paper is about
Abstract:	Short summary, which can also "stand alone"
Introduction:	What is already known and address the problem
Materials and Methods:	What you did
Results:	What you found, data collected
Discussion:	Interpretation of the results and compare to current knowledge
Conclusions:	Possible implications
Acknowledgements:	Who contributed to the work, include funding bodies
References:	How to find the papers referred to – format appropriate for journal

Paper: Deak et al., 2009. α-latrotoxin stimulates a novel pathway of Ca^{2+} - dependent synaptic exocytosis independent of the classical synaptic fusion machinery. Journal of Neuroscience 29 (27): 8639 - 8648.

Each group will have one figure to present, describe and discuss using the questions below.
The **Introduction**, **Materials and Methods**, **Conclusions** and **Abstract** will be open for group discussion, however, there are questions listed below that you must think about and answer prior to the session to enable engagement in discussion.

TUTORIAL 1:

- Read the abstract and look at the format of the paper
- Briefly look through the paper
- In pairs / groups – identify areas that need clarification
- Spend 10-15 minutes read through the Materials and Methods, you need to be clear on these before you can discuss the results
- Consider the questions below for group discussion of Materials and Methods

Group Discussion: Materials and Methods

Questions to consider:

1. Why use different ages of tissue source?
2. What are CNQX and AP-5? What are they used for?
3. FM2-10 staining protocol – how does it work?
4. Blind experiments – what are they? What is there value?
5. Is an appropriate statistical test used?
6. Are there better ways to do this study?

TIME BETWEEN TUTORIALS:

- Read the paper
- Meet in your groups to discuss the figure you need to present
- Answer the questions for each section to enable discussion during the next tutorial
- Ask peers or tutors if there are any areas that need clarification
- Prepare to engage in discussion with peers at the next tutorial

TUTORIAL 2:

Group discussion: Introduction

Present the background to the paper

1. Identify the known and unknown / what are the assumptions?
2. What are the central findings of the paper?
3. Why are they important?
4. What are the aims of the paper?

Individual groups: Results

Each group will present one figure and answer the following questions:

1. Briefly, describe the method used, clarifying any terms / reagents used
2. What kind of data will this experiment produce?
3. Describe the main points of the results –project figures onto board if necessary to point out main findings
4. Are these the best methods to obtain these results?
5. Would you consider alternate methods? Why?
6. Are the controls conducted and do they validate the data?
7. How else may the data be interpreted?
8. How could these experiments be made more relevant to *in vivo*?

Group discussion: Discussion / Conclusions

1. Are the conclusions justifiable and supported by the data?
2. What are the main conclusions?
3. What is the evidence to support these conclusions?
4. Do the conclusions the authors deduce match their findings and does this fit in the context of the literature?
5. In your view what would be follow up experiments?

Group discussion: Abstract

1. Does the abstract detail what is in the paper accurately?
2. Does the abstract “Stand alone”