*\*Notes for the lecturer: A single sheet of questions should be provided. Info shown in square brackets below should be explained by the lecturer.*

**Questions while reading**

Stop and answer these questions after reading the introduction:

1. What is/are the research question(s) of this study?

2. What is/are the hypothesis/es of this study?

[Even if these are not explicitly stated, make an inference. A lot of times, the introduction of a paper will not explicitly state the questions and hypotheses. Don’t worry about “getting it wrong” – sometimes the introduction makes you think the paper is going one way, when really it’s going another. Sometimes the authors don’t make their motivations clear. Just make your best guess based on the available evidence. You will get points just for trying.]

Stop and answer these questions after reading the methods:

2. What design do the researchers use?

[*Briefly* summarize the task that had to be performed, sample, experimental conditions]

3. Do the methods appropriately address the research question? Why or why not?

[There is no right or wrong answer here, it’s just your critical opinion – of course the authors always think their methods address the question properly, but you might think differently! All I ask is that you support your answer, whichever way. “Yes-the authors want to know the difference between 2 populations, so they recruited a representative sample from those 2 groups” or, “No-the authors want to know adolescent attitudes, but they actually recruited the parents to take the test.”]

4. What analyses should the researchers use?

[if you don’t know the name of the test, describe it how you would do it: “I would compare the average scores of the two groups to see if they are different” or, “I would find out if scores on the questionnaire correlate with age in years.”]

5. What result(s) would provide evidence for the hypothesis?

6. What result(s) would provide evidence against the hypothesis?

[Yes, I want you to guess at the results. Good papers often has clear predictions which way the results would go in one case or the other. Again, a lot of authors don’t make it clear, or they don’t know how the results should turn out. This is definitely a weakness of some scientific studies – you should have a clear idea how your results would look if your hypothesis is correct or incorrect. It’s a scientist’s job to design an experiment to observe a clear outcome of some kind: for example, “If the Earth is flat, the LASER should shine straight through the holes in the measuring sticks. If the Earth is round, the LASER should shine through the first hole but not the other two.”]

Stop and answer these questions after reading the results:

7. Are the analyses appropriate for the methods? Why or why not?

[Are the actual analyses similar to the ones you proposed in the previous section? Are they what you expected? If not, do they make sense?]

8. How would you interpret the results?

[Answer this questions BEFORE reading the discussion. This might be the most important question to try to answer before you know what the authors wrote. It is important to come to your own conclusions. Sometimes, authors will spin a story around results that do not support their conclusions. Beware! You must learn to identify when authors are wrong in their own papers, because it happens.]

9. Do the results answer the research question?

[If not, is it possible the authors did not introduce their study adequately?]

10. How could the study be improved to address open questions?

[You can say: “Does not need improvement” if you truly believe it’s a perfect study, but there is rarely a perfect study.]

After you have finished the article:

11. Are you convinced by the interpretation of the results? Why or why not?

12. Please write any additional questions/comments you have about the article here:

[When you answer these questions, don’t worry about being right or wrong. Just take some time to think critically about the article in front of you and do your best. I expect that most of you will find this a difficult exercise to do, and the answers you come up with may not satisfy you, especially at first. This is OK! Forget about what you think I want you to write, and just write what you think is going on in the study. This is what will help you make the leap into science. You will not lose points for having an opinion. You will lose points for not trying.]