

Section of Paper	The Role of This Section in the...	
	...Biochemical Tradition	...Organismal Tradition
<b>Abstract</b>	Brief summary	Brief summary
<b>Introduction</b>	Brief description of the relevant issues, with a brief literature review, bringing readers up to date on the problem under investigation, followed by a statement of precisely what the researchers investigated, and the questions answered by the investigation.	Brief description of the relevant issues, with a brief literature review, followed by a detailed description of the hypothesis to be tested by the work, and a careful listing of the predictions made by the hypothesis.
<b>Materials and Methods</b>	Details of how each experiment was done, specifying concentrations of each chemical in the solutions used, suppliers of reagents, times and temperatures of reactions, etc. --but with no mention of the logic behind any of the experimental designs because this will be in the Results section. Some of the details may be repeated cursorily in the Results section for variables that are central to the design and interpretation of particular experiments. It is assumed that <i>no one needs to read this section to follow the paper</i> , and that most readers will ignore it entirely. This section is merely the details of performance, to ensure that others can reproduce the experiments. This section is often last, and in a smaller font size.	All of the information pertaining to how the experiments were set up--logic of experimental design, technical details, etc. Because this is the only place that experimental design is mentioned, this is one of the most important parts of the paper.
<b>Results</b>	Brief introduction to the first experiment, outlining the question it asks, the approach used, and its overall design and critical variables. This is followed by a quick guide to the results of this experiment, followed by a brief consideration of alternative interpretations of the results, and identification of factors that may preclude an unambiguous conclusion. This leads into the setup of the next experiment, designed to distinguish among these alternatives. Essentially, the paper continues in this manner until the relevant issues have been addressed, and the complete set of data lead to only one reasonable conclusion--and a statement of what that conclusion is.	Straightforward guide to the findings, which may be as simple as "the result of Experiment 1 is shown in Figure 1; the result of Experiment 2 is shown in Figure 2." There is no description of experimental design or setup, because that is in the Methods section. There is no discussion of the interpretation of results, because that is in the Discussion.
<b>Discussion</b>	A return to the literature review, in order to put the new findings into the larger context of the field.	Interpretation of the results, and comparison of the findings to the predictions stated in the Introduction, with a conclusion of whether the original hypothesis is supported or ruled out.
<b>References</b>	List of other papers cited in the report	List of other papers cited in the report
<b>Overall Summary</b>	Starts with a Question, then describes the experiments, then reasons from the data to develop an overall interpretation, often called a "model" of how the system under investigation works. "Model" is a synonym for "hypothesis." In both formats, <i>the fundamental process is the same</i> : reason from data to build a model of how things work. The difference is that in one format, the model is presented at the end of the paper to show how the data lead to that particular model. In the other format, the model is presented at the beginning to set up the "formal test" of the model.	Starts by reasoning from existing data to develop an hypothesis (synonym: "working model") for how the system under investigation works. Then describes the experiments, and assesses whether the model remains valid or must be discarded.