**Scientific Studies**

**Checklist for students when undertaking a deconstruction**

There are some particular features of deconstruction described in the *Science Inquiry Skills* section of the subject outline that need to be addressed when providing evidence of a deconstruction. Inquiry.

The following questions help to guide students through those aspects.

Teachers may also find that these questions are useful when reviewing students’ draft deconstructions.

Consider the problem:

* Have I stated the problem/need/opportunity?
* Have I considered a range of factors that could affect a solution to the problem?
* Have I discussed how these factors are related to the problem?
* Is there any relevant research that I could include?
* Is this related to the focus of my course?

Scientific Method

Consider testing a possible factor

* Have I selected one factor that can be tested or proposed a possible engineering design?
* Have I constructed a testable hypothesis using a conventional format?
* Is the independent/dependant variable measurable?
* Have I identified the variables which need to be controlled and how they will be controlled?
* Have I identified the variables which cannot be controlled and why they cannot be controlled?
* Are there specific details of the equipment and materials required? Have I justified them?
* Has the method to be used in the test clearly set out? Have I justified them?
* Is there enough detail in the method that it can be followed by another person without further instructions?
* Is it clear what is to be measured to obtain results?
* Is the sample size sufficiently large for me to formulate a valid conclusion?
* Is there a blank data table to show how the results will be recorded?

Engineering design

Consider a possible prototype

* Is there a sketch of a prototype?
* Have I identified the materials to be used? Have I justified them? What testing and measurements will provide evidence for their use in the model?
* Have the various components of the design that lead to a solution to the problem been identified and explained or justified?
* What testing and measurements of the components will provide evidence for their use in the model?
* Have I included measurable outcomes that will reflect the success or otherwise of the design?
* Is there a blank data table to show how the results will be recorded?
* As a result of each test, what are some changes I might make to the design to change the model for re-testing?
* Have I considered any other way of providing evidence of this investigation?

*Please note:* This series of questions is not designed to be answered one by one in a deconstruction but to provide students with prompts to think about when undertaking a deconstruction.