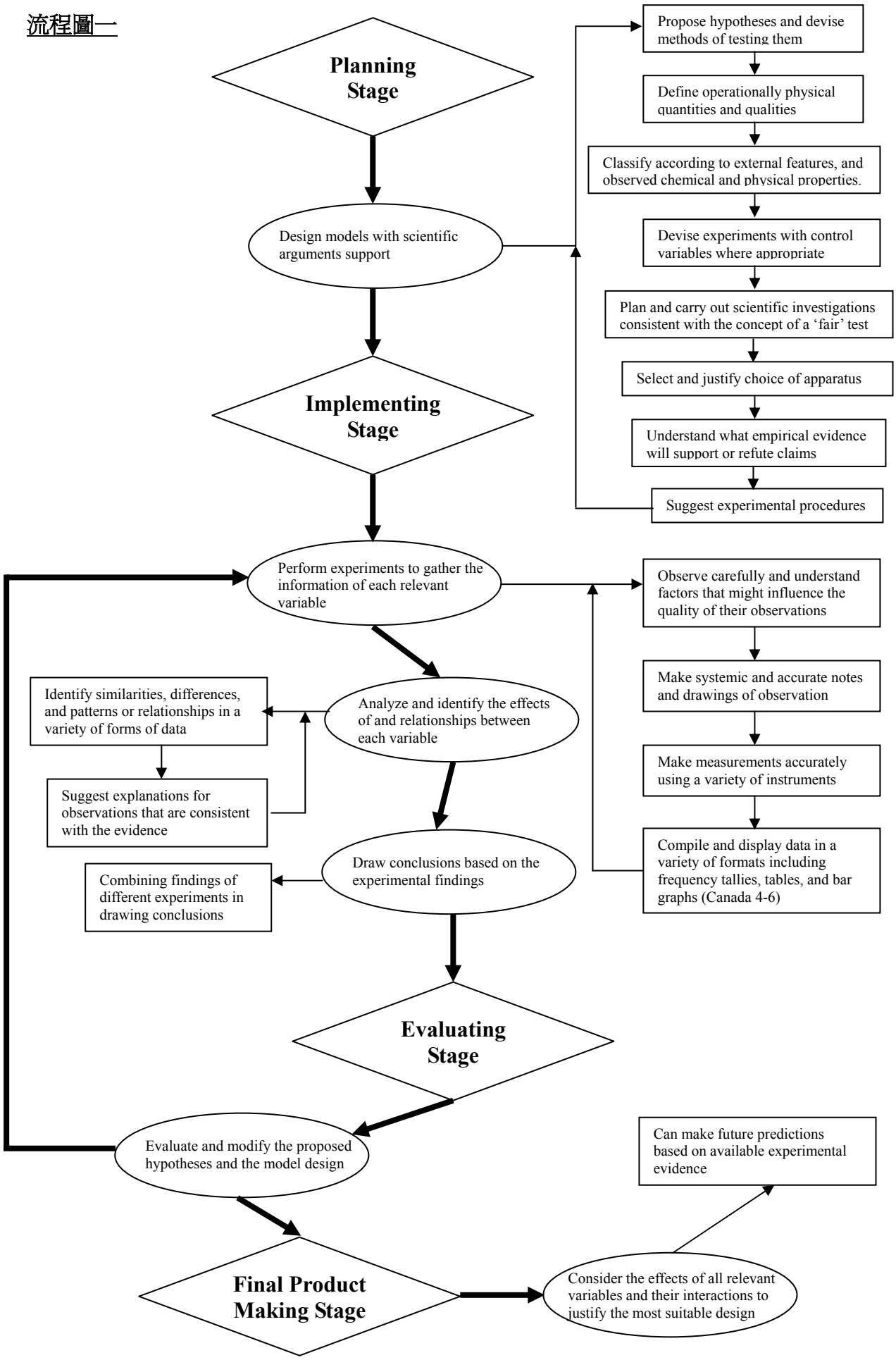
流程圖一


Planning Stage
Design models with scientific arguments support
Propose hypotheses and devise methods of testing them
Define operationally physical quantities and qualities
Classify according to external features, and observed chemical and physical properties.
Devise experiments with control variables where appropriate
Plan and carry out scientific investigations consistent with the concept of a 'fair' test
Select and justify choice of apparatus
Understand what empirical evidence will support or refute claims
Suggest experimental procedures
Implementing Stage
Perform experiments to gather the information of each relevant variable
Observe carefully and understand factors that might influence the quality of their observations
Make systemic and accurate notes and drawings of observation
Make measurements accurately using a variety of instruments
Compile and display data in a variety of formats including frequency tallies, tables, and bar graphs (Canada 4-6)
Analyze and identify the effects of and relationships between each variable
Identify similarities, differences, and patterns or relationships in a variety of forms of data
Suggest explanations for observations that are consistent with the evidence
Draw conclusions based on the experimental findings
Combining findings of different experiments in drawing conclusions
Evaluating Stage
Evaluate and modify the proposed hypotheses and the model design
Final Product Making Stage
Consider the effects of all relevant variables and their interactions to justify the most suitable design
Can make future predictions based on available experimental evidence