

Pupils understand the overall structure of the model, variables and rules, and that rules govern the behaviour of a model. They organise data suitable for processing.

Pupils ask 'what if ...?' questions to test the plausibility of the model and interpret the results.

Pupils can identify features and limitations of a given model or simulation.

Pupils can define the problem to identify variables, the relationships between variables and the outcome, and the type of outcome relevant to the audience.

Various scenarios are identified that will enable extensive testing of the model. Input (preferably regular) – process – testing – output.

Pupils become more critical in their use of models, exploring relationships, pattern and predicting consequences of changing values in a model.

Pupils create models to solve a given task and explore validity by changing variables and rules. Pupils identify appropriate information sources to compare with the model behaviour.

Pupils create simple models using a range of variables. Pupils understand that changing data (data within variables and variables themselves) can change the way in which the model behaves and can predict some of the effects of these changes.

Pupils understand that a model consists of three main stages, input data, process of data (rules) and output (charts, data etc.). The type of output data is considered in relation to the audience, e.g. a report on the profitability of a fundraising venture includes forecasts of various scenarios (line charts). Linking these charts from the report to the model allows changes in the model to be efficiently integrated into the report.