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A general essay about the Rule of Three – numerical, algebraic, and graphical perspectives + modeling with one illustration about Irish population.

Excellent design process for making good modeling problems offered and some sources sited.

Principle I. Be ambiguous.
Use poorly posed problems.
Provide too much or too little data in otherwise standard problems.
Formulate questions with many solutions or no solution.
Replace numbers with parameters.
Admit multiple solution strategies,

Principle II. Ask about, not for.
Ask about the results of a process or method, not for its application.
Ask students to match problems and methods with outcomes.

Principle III. Explore vocabulary.
Ask students to provide examples of concepts, properties, and terms.
Inquire about the interdependence of concepts, properties, and terms.

Principle IV. Shift context and perspective.
Employ the rule of three: pose questions from the graphical and numerical perspectives, not just the algebraic.
Use mathematical modeling to set questions in a physical context.

Keywords: modeling, questions, design, Ireland, population, differential equation, model