

Progression guide for models and modelling (Developing ideas and making things happen)

Concepts	Aspects of level	Models and modelling aspect of National Curriculum level description		Expansion of level description	Illustration What might pupils do?
		Key characteristics of National Curriculum level			
Cause and effect: Changing things.	1		Explore options and make choices.		
			They use ICT to explore what happens in real and imaginary situations. Purposeful use towards a specific outcome.	At this level pupil can describe the effects when a model is changed to make something happen.	
Using variables: Pupils make choices, e.g. changing a value, selecting a route.	3		They make appropriate choices when using ICT-based models or simulations to help them find things out and solve problems. Making changes to solve problems.	Pupils use ICT-based models or simulations to help them find things out and solve problems, e.g. by changing items in a simulation or model.	<ul style="list-style-type: none"> Day trip planner (Key Stage 2 Year 5). Lung capacity investigation (Key Stage 2 Year 5). (National Curriculum in Action).
			They use ICT-based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions. Test the plausibility of the model by interpreting results against expectations.	Pupils become more critical in their use of models, exploring relationships, patterns and predicting consequences of changing values in a model. 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.	<ul style="list-style-type: none"> Party planner (Key Stage 2 Year 5) (National Curriculum in Action). Setting up a football league table in order to model possible match outcomes (Unit 7.4 lesson 1). Using and developing (with guidance) a model to look at the financial implications of running a school disco (Unit 7.4 lessons 3, 4).
Plausibility: Pupils ask 'what if ...?' questions to interpret and explore models. Pupils consider whether the results are realistic.	4				