



Modelling & Simulation

Levelled Examples



Context:

The teacher asked the children to describe how their parents took their coffee, i.e. sugar, milk. The teacher asked the children to describe how she took her coffee, the answer to which was in an envelope.

What the children did:

Children worked in pairs to use an interactive website to investigate how Colin likes his coffee. How much coffee does he need? How much sugar does he like? Does he like milk? How hot does he like it? The children explored effective ways to record their trials.



What the children said:

You need to change one thing at a time.

Let's use our drywipe boards to record our answers.

Pupils should:

- Know how to make appropriate choices when using ICT based models or simulations.
- Know how to use a simulation to help find things out and solve problems.

Next steps:

- Understand the impact of changing variables.
- Solve a problem by changing variables systematically.

Suggested resources:

- See Kent ICT Subject zone for useful websites linked to each subject
- See Kent ICT Software zone for a range of online simulations e.g. Colin's coffee and BBC science clips
- See Kent ICT Software zone for details of free software e.g. www.yenka.com/en/Yenka_Basic_Circuits/ to download Yenka Basic Circuits (previously known as Crocodile Clips)

Example Cross Curricular Activities:

- Use an online simulation to explore the water cycle (Geography).
- Change variables within an interactive game to investigate scientific concepts e.g. shadow simulator (Science).
- Use an adventure game to solve problems (Mathematics).
- Investigate circuits and conductors using an online simulation (Science).
- Explore online simulation linked to a class topic e.g. walk through a Tudor street (History).

Attainment target for ICT

Level 2

Pupils use ICT to organise and classify information and to present their findings. They enter, save and retrieve work. They use ICT to help them generate, amend and record their work and share their ideas in different forms, including text, tables, images and sound. They plan and give instructions to make things happen and describe the effects. They use ICT to explore what happens in real and imaginary situations. They talk about their experiences of ICT both inside and outside school.

Level 3

Pupils use ICT to save information and to find and use appropriate stored information, following straightforward lines of enquiry. They use ICT to generate, develop, organise and present their work. They share and exchange their ideas with others. They use sequences of instructions to control devices and achieve specific outcomes. **They make appropriate choices when using ICT based models or simulations to help them find things out and solve problems.** They describe their use of ICT and its use outside school.

Level 4

Pupils understand the need for care in framing questions when collecting, finding and interrogating information. They interpret their findings, question plausibility and recognise that poor quality information leads to unreliable results. They add to, amend and combine different forms of information from a variety of sources. They use ICT to present information in different forms and show they are aware of the intended audience and the need for quality in their presentations. They exchange information and ideas with others in a variety of ways, including using email. They use ICT systems to control events in a predetermined manner and to sense physical data. They use ICT based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions. They compare their use of ICT with other methods and with its use outside school.