

# Modelling & Simulation

## Levelled Examples

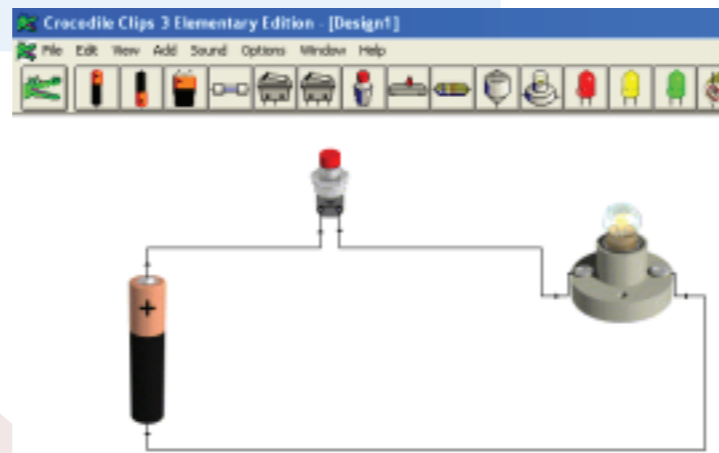


### Context:

During their science day the children completed a range of activities related to electricity. The teacher demonstrated how to drag and drop icons within Crocodile Clips and how to wire components together.

### What the children did:

A small group worked with laptops to simulate circuits on screen. The children were asked to create as many different circuits as possible and to experiment with different numbers of batteries. They talked about the effects of changing the components.



### What the children said:

One bulb was brighter than when I used two.

What happens if you add more batteries?

### Pupils should:

- Know how to navigate between screens.
- Be able to explain what is happening.
- Be confident using different tools for a reason.

### Next steps:

- Be able to explain to someone else how to use a simulation.
- Recognise some rules and make things happen.

### Suggested resources:

- See [www.kented.org.uk/ngfl/software/simulations/index.htm](http://www.kented.org.uk/ngfl/software/simulations/index.htm) for a range of online simulations e.g. BBC science clips
- See [www.kented.org.uk/ngfl/software/freesoftware.htm](http://www.kented.org.uk/ngfl/software/freesoftware.htm) for details of free software e.g. Crocodile clips and PIXIE simulator
- See [www.yenka.com/en/Yenka\\_Basic\\_Circuits/](http://www.yenka.com/en/Yenka_Basic_Circuits/) to download Yenka Basic Circuits (previously known as Crocodile Clips)

### Example Cross Curricular Activities:

- Use PIXIE simulator to explore moving around a grid and use instructional language (Mathematics / Geography).
- Explore an interactive game at Kent NGfL games e.g. shadow simulator or minibeast modeller (Science).
- Use science clips website to explore a simulation e.g. growing a plant (Science).
- Research a place of worship, or place of historical or geographical interest using online virtual tours (History / Geography / RE).
- Explore the world by navigating around aerial photographs e.g. Google Earth (Geography).

### Attainment target for ICT

**Level 1**  
Pupils explore information from various sources, showing they know that information exists in different forms. They use ICT to work with text, images and sound to help them share their ideas. They recognise that many everyday devices respond to signals and instructions. They make choices when using such devices to produce different outcomes. They talk about their use of 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.