

# Key Stage 3 Using ICT

## Enhancing Learning through: Using Modelling Teacher Notes

You can use modelling for a variety of purposes, for example:

- organising, representing and analysing data graphically;
- making alterations and quickly seeing the outcomes; or
- learning from 'what if' scenarios.

You can contextualise a modelling activity to align with a topic you are teaching. Giving the activity a Using ICT focus can enhance your pupils' learning and help to make the work relevant and meaningful. You can customise the Pupil Guide cover sheet for this activity to suit your pupils.

You can use this activity as a structure for learning and teaching the skills associated with modelling software. The activity follows a common Using ICT process.

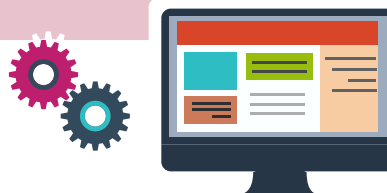
### PLAN

Pupils research the feasibility of different models as a starting point for developing their own model or consider using an existing spreadsheet model in their own investigation. Pupils gather information, either self-produced or provided by the teacher, to use in their model.



### DO

Pupils create or adapt a model to analyse data, using a range of software features and functionality to solve a problem or test a hypothesis. Pupils use a range of software tools to manipulate the data, showing awareness of more efficient ways of working. They work across a number of worksheets and display their results in graphic format, identifying key data and trends.



### REVIEW

Pupils reflect on their own work or on that of their peers. They identify where their work has merit and consider ways of making improvements.



### Resources



You will need:

- spreadsheet software; and
- word processing software\* (for pupils keeping a project diary).

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## Using the Activity for Assessment

## Using Modelling

You can use this activity as an assessment task. If used for assessment purposes, this activity will give pupils opportunities to demonstrate competence in Explore, Express, Evaluate and Exhibit. If applicable, you can use the Pupil Guide cover sheet to indicate aspects of Exchange that you want to include. Pupils could engage in Exchange activities by:

- using the school's VLE or other content sharing facility to upload content that they have created for their peers to view;
- using an online pinboard or blog facility to store and share existing examples of computer modelling; or
- emailing their work to you or their peers for feedback.

You do not need to submit the task to us for approval. We have approved these activities for assessment purposes. They are ready for use with Levels 3–6.

### Prior Knowledge or Experience

Before starting this activity as an assessment task, pupils should:

- have developed skills in using the features and tools of software modelling to solve problems;
- know how to gather data for a specific purpose with a view to solving a problem or conducting an investigation; and
- have acquired and practised the skills associated with this activity at the competence levels targeted, at a different time and in a different context.

### Managing the Assessment

Whatever topic or theme you decide to use, it is important to set the task in the context of an enquiry-based scenario. This gives pupils rich opportunities to consider the audience and purpose for their work.

### Assessment Evidence

You can identify the level of competence a pupil has demonstrated in their work by assessing:

- the end product (for Levels 3 and 4); or
- the end product and the project diary (for Levels 5 and 6).

The level a pupil is working at is based on the quality of their work.

**Please note:** if you are sharing pupil work with CCEA, simply submit the evidence you used to make your assessment judgement.

The following table is a quick guide to support you in making a judgement about a piece of work. You should always refer to the Levels of Progression.

*\*Pupils can record their methods and processes in a written, audio or video diary.*



## Using Modelling

|                | PLAN  | DO   | REVIEW  |
|----------------|---|--|---|
| <b>LEVEL 3</b> | <ul style="list-style-type: none"> <li>use the stimuli the teacher provides for inspiration and to plan work;</li> <li>mostly use assets the teacher provides;</li> </ul>   | <ul style="list-style-type: none"> <li>mostly use teacher suggestions about which tools and features to use;</li> <li>use several of the software's main tools and features with some assistance to produce work that tends to be for themselves rather than an intended audience;</li> <li>give work a suitable filename;</li> </ul>  | <ul style="list-style-type: none"> <li>use tools and features in the software to modify their work and create an end product; and</li> <li>make work that is largely to please themselves rather than with any evident regard to an intended audience.</li> </ul>   |
| <b>LEVEL 4</b> | <ul style="list-style-type: none"> <li>use the stimuli the teacher provides for inspiration and to support their own planning;</li> <li>choose assets, with teacher guidance, to use in their work;</li> </ul>                            | <ul style="list-style-type: none"> <li>choose a number of software tools and features independently to include in their work;</li> <li>use software tools and features independently to begin to enhance the impact and/or usefulness of the work for the audience and purpose;</li> <li>give work a suitable filename and store it in their own area;</li> </ul>  | <ul style="list-style-type: none"> <li>select software tools and features to improve the end product; and</li> <li>make work that reflects audience and purpose to some extent.</li> </ul>  |
| <b>LEVEL 5</b> | <ul style="list-style-type: none"> <li>can find a stimuli independently to help as they plan their work;</li> <li>can select assets to use and identify the merit of their choices;</li> </ul>  | <ul style="list-style-type: none"> <li>are independently selective when choosing which tools and features to use;</li> <li>use the software tools and features to enhance the impact and usefulness of the work for the audience and purpose;</li> <li>give work a suitable filename and store it in their own area;</li> <li>use online facilities to store and/or share their work with others;</li> </ul>   | <ul style="list-style-type: none"> <li>reflect on and describe the merits of their choices and use various tools and features to make improvements to the end product; and</li> <li>make work that clearly suits the audience and purpose.</li> </ul>   |
| <b>LEVEL 6</b> | <ul style="list-style-type: none"> <li>make detailed plans effectively based on a stimuli they have found themselves;</li> <li>use assets that have merit and can justify reasons for incorporating these into their own work;</li> </ul> | <ul style="list-style-type: none"> <li>choose software tools and features to create highly effective work;</li> <li>work with the needs and expectations of the audience and purpose always in mind;</li> <li>save work in different formats to use for different purposes and in different contexts;</li> <li>use online facilities to store and/or share their work with others, showing an awareness of suitable file formats, portability and size;</li> </ul> | <ul style="list-style-type: none"> <li>routinely reflect on the use of tools and features and the merits of their choices, justifying some of the decisions made; and</li> <li>make work that clearly meets the expectations of the audience and fulfils the purpose, taking into account the original objectives.</li> </ul> |