



Unit Overview

Target year group: Year 7

Projected Duration: 6 lessons

This scheme of work aims to teach learners how to plan and carry out a project while applying a variety of IT skills, such as 3D modelling, spreadsheet modelling and presentation skills. Learners will plan their project by using a Gantt chart, design a house using Google SketchUp, calculate the expenditures of the project using Excel then produce a presentation to explain why their house should be built. The topic finishes with an evaluation of the work produced.

Relevant Prior Knowledge

Learners will be familiar with the use of the Microsoft Office applications from year 7.

New Language for Learning

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| ↘ Gantt Chart | ↘ Orbit |
| ↘ 3D Modelling | ↘ Textures |
| ↘ SketchUp | ↘ Spreadsheet |
| ↘ Push/Pull Tool | ↘ Formulas |
| ↘ Midpoint | ↘ Functions |

Resources

- ✓ Teacher's PowerPoint
- ✓ Lesson 1 – Gantt Chart Template
- ✓ Lesson 2 – Using SketchUp guidesheet
- ✓ Lesson 4 – Finances Template
- ✓ Lesson 4 – Spreadsheet Help Sheet
- ✓ Homework Project

Homework

Create a 3D model of the school using SketchUp.

Cross-Curricular Links

Literacy:

- ↘ Descriptive writing piece on own 'dream house'.
- ↘ Written evaluation of work produced.

Numeracy:

- ↘ Learners will use formulas and functions to carry out arithmetic in Excel.

Assessment

Assessment is based on the [Progression Pathways Assessment Framework](#) from Computing at School.

Pathway: Information Technology

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|---------|---|
| Level 3 | ✓ Collects, organises and presents data and information in digital content. |
| | ✓ Creates digital content to achieve a given goal through combining software packages. |
| | ✓ Makes appropriate improvements to solutions based on feedback received. |
| Level 4 | ✓ Can comment on the success of the solution. |
| | ✓ Makes judgements about digital content when evaluating and repurposing it for a given audience. |
| | ✓ Recognises the audience when designing and creating digital content. |
| | ✓ Uses criteria to evaluate the quality of solutions. |
| | ✓ Can identify improvements making some refinements to the solution and future solutions. |

Support and Extension

Less able learners should still be able to access all lessons although the rate of progress may be slower than that of other learners. Teachers may exceed the projected duration if they feel this would be more suitable for the classes they are teaching, guide sheets have also been provided to help learners use the software.

A range of extension activities have been embedded into most lessons to enable **more able learners** to be pushed within their skills and knowledge.

Lesson 1

Activities:

- ↘ Introduce learning objective and outcomes.
- ↘ Explain what a Gantt chart is and how it can be used to plan an event, show example for a party and shade in the boxes to plan the event with learner input for timings.
- ↘ Learners use the Gantt chart template to plan out how long each of the given tasks will take.
- ↘ **Plenary:** Q&A session on what learners would choose if they were creating their own dream house.

Extension:

- ★ Learners should write a description of their own dream house.

Lesson 2

Activities:

- ↘ Introduce learning objective and outcomes.
- ↘ Introduce learners to SketchUp and explain what it is used for.
- ↘ Learners use the guide sheet to create a simple house using SketchUp (they should be encouraged to do this independently).
- ↘ **Plenary:** Review progress made by questioning learners on what was difficult and what was easy.

Extension:

- ★ Learners should attempt to create their own house using SketchUp (they may need access to Google Street View to help with this).

Lesson 3 (This may take two lessons)

Activities:

- ↘ Introduce learning objective and outcomes.
- ↘ Discuss what sort of features might be found in a holiday home.
- ↘ Learners should decide on their target customer then use SketchUp to design a holiday home.
- ↘ Demonstrate how to export the model as an image to use in other documents later.
- ↘ **Plenary:** Review progress against the Learning Outcomes (hands or thumbs up for each one).

Lesson 4

Activities:

- ↘ Introduce learning objective and outcomes.
- ↘ Show learners the Finances Template and demonstrate how to add the formulas and functions.
- ↘ Learners should complete each section of the template using the Spreadsheet Help Sheet for guidance.
- ↘ **Plenary:** Q&A on what learners can remember from the content of the lesson.

Extension:

- ★ Learners should change some of the values in their spreadsheet to see what happens then write up their findings in a Word document.

Learning Objective:

Know the purpose of a Gantt chart and be able to use one to plan activities.

Learning Outcomes:

- ✓ GOOD: Use the Gantt chart template to plan duration of tasks.
- ✓ BETTER: Use the Gantt chart to accurately and realistically plan the duration of each task.
- ✓ BEST: Description of your ideal dream house.

Learning Objective:

Understand how to use and combine the tools in SketchUp to create a 3D model of a house.

Learning Outcomes(over two lessons):

- ✓ GOOD: Create the basic house model by using the guide sheet.
- ✓ BETTER: Create the house model (including a garden) independently by using the guide sheet with no help from any classmates.
- ✓ BEST: Create a model of your own house.

Learning Objective:

Understand how to use and combine the tools in SketchUp to create and export a model of a house for a given purpose.

Learning Outcomes:

- ✓ GOOD: Create a model of a suitable holiday home in Kent.
- ✓ BETTER: Create a model of a house that looks like an appealing holiday home.
- ✓ BEST: An unusual and unique model that shows an in-depth use of a range of tools.

Learning Objective:

Understand how to use formulas and functions in a spreadsheet to calculate costs.

Learning Outcomes:

- ✓ GOOD: Use formulas to complete most of the spreadsheet.
- ✓ BETTER: Accurately use both formulas and functions to complete the spreadsheet.
- ✓ BEST: Test the spreadsheet by changing some of the values.

Lesson 5

Activities:

- ↳ Introduce learning objective and outcomes.
- ↳ Go through examples of good and bad PowerPoint slides, learners should be able to identify why they are good and bad.
- ↳ Introduce the task and explain what the presentation should include. Question learners on what styles would be appropriate for the audience.
- ↳ Learners complete their PowerPoint presentation aimed at the Grand Designs Team to explain why their house should be built.
- ↳ **Plenary:** Review progress against the Learning Outcomes (hands or thumbs up for each one).

Extension:

- ★ Learners should ask a friend to review their presentation and make at least one improvement based on the feedback received.

Lesson 6

Activities:

- ↳ Introduce learning objective and outcomes.
- ↳ Explain how to write a good evaluation using P.E.E.
- ↳ Learners should evaluate the work they have produced for this topic using the criteria on the PowerPoint slide.
- ↳ **Plenary:** Question learners about what they have liked/disliked about this topic and why.

Extension:

Learners should improve one of their pieces of work using the suggestions they have made in their evaluation.

Learning Objective:

Understand how to apply design skills in PowerPoint to suit a specific audience.

Learning Outcomes:

- ✓ GOOD: A PowerPoint presentation that contains most of the specified information.
- ✓ BETTER: A PowerPoint presentation that contains all of the specified information and suits the target audience.
- ✓ BEST: One improvement made to the presentation after receiving feedback from a friend.

Learning Objective:

Understand how to write an evaluation using criteria to make judgements about our work.

Learning Outcomes:

- ✓ GOOD: An evaluation of each of the pieces of work carried out in this topic.
- ✓ BETTER: A detailed and thorough evaluation using PEE for each piece of work carried out.
- ✓ BEST: One piece of work that has been improved based on the suggestions in the evaluation.