Year 7 ICT Project

Learning Objectives

To gain competency in the use of Word Processing software (WP), Desktop Publishing software (DTP), Modelling software (Spreadsheet) and Data handling software (Databases).

To learn to use ICT to enhance learning across differing curriculum subjects, with a focus on the software tools and features relevant to each subject area.

To learn about ecosystems and how life on earth is connected, and how to live responsibly with due regard and respect for other people, animals, plants and ecosystems.

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Theme

Scientists agree that we are losing plant and animal species at an alarming rate. Some suggest that we are in the midst of the sixth mass extinction event. Your task is to explore what this means and why so many species are becoming extinct.

Research and analysis of the problem

A good way into this theme is to watch David Attenborough's programme called *Extinction* on iplayer. You can also research books in the school library and use the internet.

Task 1 – produce a presentation that describes a range of reasons for species becoming extinct (a range means at least three things), and what mass extinction means. These could include climate change, deforestation, intensive farming or illegal poaching, but you could find other reasons. The presentation should comprise of at least three slides.

Written Assessment (Literacy) – the quality and content of your presentation

Possible solutions to the problem of species extinction

You are in charge of a brand new Wildlife Haven/ Safari Park created on land just outside Llanidloes. It is a small park whose main use is to breed and maintain animals and plants on the endangered species list. You may find some help here at Natural Resources Wales: https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/uk-protected-species/?lang=en

You must research the area around Llanidloes for a suitable plot for the park. Use the skills and knowledge gained in ***Geography*** *in reading maps to find a suitable area that will not flood, that will provide variety and interest for the animals, and that may be easily reached by visitors. Create a map (communicating info) visitors may use to find their way around the park and/ or a poster to advertise the park. Create the prototype of plant and animal database (data handling) that the park may use to keep a record. Create a spreadsheet (spreadsheets and modelling) model of the typical income and outgoings that the park might generate.*

Task 2 – Research endangered and protected species in Wales. Choose a particular animal or plant and use the knowledge that you gained in **Science** to create a brief info guide that describes the animal's size, habitat, primary food source, lifespan, number of young, and approximate numbers in Wales. You should list the English common name, the Latin name and the **Welsh** name. The info guide will be something like a Top Trump Card.

Written Assessment (Literacy) – the quality and content of your info guide

Task 3 – Research Zoos and Safari parks to see how they set out their enclosures, buildings, paths and car parks. Use the knowledge you gained in **Geography** to choose a suitable plot for the park near Llanidloes – consider ease of access for visitors off a good road, flooding dangers low in the valley, and exposure to bad weather up on the hills. create a **map** with a key. Research Ordnance survey maps to learn about the use of keys. Alternatively, create a **poster** that advertises the park. Send your document as an **email** attachment and ask your friend/s for advice on how to improve it. Create a final draft acting on your friend and/ or Teacher's comments. Help your friend/s by critically assessing their designs that they have emailed to you and make a comment for improvement.

Written Assessment (Literacy) – the quality and content of your map or poster

Oral Assessment (Literacy/ Oracy) - how well you are able to describe the environmental reasons for the situation of your Wildlife Haven/ Safari Park? How well you can describe the tools and features of email software? Can you explain what an attachment is and how to open one? What does cc mean? What is the purpose of a Contact list or address book?

Task 4 – Create a **database** of at least 8 plants or animals in your park. Create at least 6 Fields. You **must** have fields for the English name, the Welsh name and the Latin name. Use the database to manage the data. Create a SORT for a purpose, Create a SIMPLE SEARCH for a purpose. Create a COMPLEX SEARCH for a purpose.

Written Assessment – A working database of at least 8 species and 6 fields

Oral Assessment – Can you explain why a SORT is useful and which Field would be a good one to SORT on? Can you explain what a SEARCH is and give a good reason for doing one?

Task 5 – Create a **spreadsheet** model of the typical weekly income and outgoings of your park. Create a draft version and then an improved final version. The improved version should have bold headings, borders, a simple formula (e.g. =A3+A4), at least three functions such as SUM, MIN and MAX, or AVERAGE. Create a named **variable** such as the VAT rate or a DISCOUNT rate, and test to see what happens to all the sums linked to the variable when it is altered for a good business reason. Produce a chart to show your spreadsheet numerical data as visual data. Make sure you have given the chart a title and named the axes.

Written Assessment (Numeracy) – A working spreadsheet model of the income and outgoings of your park together with a good chart that shows your data.

Oral Assessment (Oracy) – What is the advantage of creating a model to test different scenarios? What is the advantage of using formulas in the spreadsheet? Why is a chart often more easy to understand and analyse than lots of numbers in a table?

Task 6 – Either write a summary and evaluation of your project – which bits went well , which did not, what you could improve if you had more time, what new skills and knowledge you learned, how your friends helped you with your designs and how you helped your friends **or** take part in a **tutorial with your teacher** where they will ask you questions about your work such as the questions in the Oracy Assessments above

Task 7 – Minecraft Task – join a team of no more than four other pupils and use Minecraft to complete one of the following tasks (collaboration):

- Create an enclosure for an endangered species – use notice boards to describe the species and why it is endangered
- Create multiple enclosures – use notice boards as above
- Create a complete park including multiple enclosures, a road and pathway system, an entrance gate, gift shops, restaurants and booths, gardens and ponds etc.

Suggested approach to this task – plan out the Park on graph paper first to get the proportions right (numeracy).

Assessment (Literacy/ Oracy) – Use the Minecraft camera and the Book and Quill to record the construction of your park and to make notes describing your reasons, successes and challenges.

Online help:

River Landforms - https://www.bbc.co.uk/bitesize/guides/ztpkqty/revision/3

Montgomeryshire Wildlife Trust - https://www.montwt.co.uk/

PDF Report on "How we can all help conserve nature" - G:\ICT\DC\Year 7\Communicating information

Chester Zoo Map – as above

Creating databases and modelling with excel on G:\ICT\DC\Year 7\ (either in data handling or modelling

The Woodland Trust for articles on numerous species including a good article on why bees are dying - https://www.woodlandtrust.org.uk/

BBC Bitesize Fertilizers and Farming - https://www.bbc.co.uk/bitesize/guides/zsf82hv/revision/4

How to get the best assessment grade

Presentation or poster should:

- Combine images (from 2 sources – clipart/internet) and text
- Use wordart, textboxes, page guides in poster
- Drafts must be peer-assessed then an improved final draft created based on suggestions

Spreadsheet should:

- Be in landscape orientation, with row and column headings for printout
- table should have borders, clearly marked headings, different data types
- should show use of formulas – SUM, MIN, MAX, AVE
- should use relational cell referencing
- should be prepared for printout in both data and formula view

Database should:

- be in landscape orientation with borders and headings displayed for printing
- at least 8 species and 6 fields
- create a sort, simple search, complex filter with appropriate reasons

For highest levels:

Presentation and poster

- no spelling or grammatical errors
- use of bullets, tables, text alignment, text wrap, page numbering, headers and footers, overlapping frames

Spreadsheet

- excellent use of formatting tools, no spelling errorsu
- use of absolute cell referencing, other complex tools, two different types of chart

Database

- excellent use of formatting, no spelling errors
- a report with use of Math functions
- you should be able to explain how the completed tasks are appropriate for audience and purpose
- you should be able to answer your teacher’s questions from the Oracy assessment sections

KS3 Level Descriptions

Level descriptions

The following level descriptions describe the types and range of performance that pupils working at a particular level should characteristically demonstrate. In deciding on a pupil's level of attainment at the end of a key stage, teachers should judge which description best fits the pupil's performance. Each description should be considered in conjunction with the descriptions for adjacent levels.

By the end of Key Stage 2, the performance of the great majority of pupils should be within the range of Levels 2 to 5, and by the end of Key Stage 3 within the range 3 to 7. Level 8 is available for very able pupils and, to help teachers differentiate Exceptional Performance at Key Stage 3, a description above Level 8 is provided.

Level 1

Pupils explore, with support, different types of information held on ICT systems. They use ICT to move objects on-screen for a defined purpose and use words and pictures to communicate ideas. They use the internet/related technologies safely, with support. They are aware of ICT in their world. They recognise the different parts of a computer system.

Level 2

Pupils consider, create and communicate information and ideas in different forms using text, images, pictures and sound. They find information from a given source using it to answer simple questions. Pupils enter information into a record with some assistance. They explore the effects of making changes in models or simulations. Pupils store and retrieve work with some assistance. They are aware of the use of ICT in the outside world.

Level 3

Pupils begin to organise their tasks and use ICT to create, organise, amend and present information and ideas. They find information from a range of given sources and use ICT to search, sort and/or graph data to follow simple lines of enquiry. Pupils understand how changing one variable affects another in models or simulations. They store and retrieve work independently. Pupils send and receive information electronically, with support. They understand the use of a range of input and output devices.

Level 4

Pupils broadly plan their tasks and combine a variety of information and media when creating and developing their ideas, with a sense of purpose and audience. They use ICT to select relevant information from a range of given sources, recognising that poor quality information and data yields unreliable results. Pupils begin to check the validity of data. They add and amend records in databases. They use ICT to explore patterns and relationships. They make simple predictions about how changing one variable affects another in models or simulations. They send and receive information electronically. Pupils discuss and begin to form opinions about some of the issues raised by the use of ICT and internet safety. They use the internet/related technologies safely in accordance with given guidelines. Pupils manage their workspace effectively. They show an awareness of the basic functions of hardware and software.

Level 5

Pupils plan their tasks for purpose and audience. They combine a variety of information and media when creating, refining and developing their own ideas and information. Their presentations are fit for purpose and meet the needs of their intended audience. They search for and select information from a range of sources, considering relevance, plausibility and accuracy. Pupils create their own databases and search or sort on more than one field to follow particular lines of enquiry. They create

their own models or simulations and investigate the effect of changing data. They use ICT to send and receive files electronically. Pupils form opinions about issues raised by the use of ICT and are aware of dangers associated with misuse of the internet/related technologies. They recognise the implications of using networks.

Level 6

Pupils plan their tasks in detail for specific purposes and audiences. They use ICT to create and refine their work using information from a range of sources, recognising the need for different styles for different audiences. They use ICT to check accuracy and plausibility by comparing information from different sources, making choices to meet the needs of a specific purpose or audience. They use databases to follow complex lines of enquiry and draw conclusions. They use models or simulations of increasing complexity, vary the rules within them and test hypotheses. Pupils have opinions about issues raised by the use of ICT and know the dangers associated with misuse of the internet/related technologies.

Level 7

Pupils plan independently for different purposes and audiences specifying resources and sources. They refine their choice of selected information to match the needs of a specific purpose or audience. Pupils identify the advantages and limitations of different applications and select and use suitable ICT facilities. They design a database making appropriate choices within a data-handling application, using its specialised functions. They design computer models and procedures, with variables, to meet specific needs. Pupils have informed opinions of legal and other issues raised by the use of ICT in the wider world. They use the internet/related technologies safely and independently.

Level 8

Pupils plan independently for a specific purpose and refine in the light of development. They make informed judgements on selected information, evaluating its plausibility, accuracy and relevance to purpose and audience. Pupils design and implement ICT systems for others to use. They create presentations for others to meet specific requirements. They discuss in an informed way the social, economic, ethical and moral issues raised by ICT.

Exceptional Performance

Pupils evaluate software packages and complex computer models, analysing the situation for which they were developed and assess their efficiency, ease of use and appropriateness, suggesting possible refinements. Pupils design, implement and document systems for others to use, predicting some of the consequences that could arise in use. When discussing their own and others' use of ICT, they relate their understanding of the technical features of information systems to an appreciation of how those systems affect wider social, economic, ethical and moral issues.

Tracking sheet

I have completed, printed out or made electronically available the following:

eSafety and DTP Tasks	Level 4	Level 5	Level 6	Level 7	Other
Be able to save to school network, name files/folders					
Be able to explain eSafety to a friend					
Be able to use email and reply/ attach file/ post and upload to TEAMS					
Be able to create a draft DTP document combining text and images (poster, presentation, website etc.)					
Use of WordArt, overlapping frames					
Images from two sources (internet and clipart)					
Basic understanding of copyright					
Awareness of designing for audience and purpose					
Header/ footer on most docs (title, name)					
Few errors in grammar and spelling					
Good understanding of design for audience and purpose					
Evidence of research, sound understanding of copyright					
Aaccuracy and plausibility					
Good design consistency (House style)					
Use of bullets, tables, text wrap					
Clear improvement of Final from Draft					
No spelling/ grammatical errors					
H and F on all Docs					
Thorough understanding of audience and purpose					
Excellent research and understanding of copyright					
Use of columns, captions, format and merge cells					
No errors in grammar and spelling					
Images edited in Paint program					
Independent learner – little or no help needed					

Tracking sheet

I have completed, printed out or made electronically available the following:

Modelling Tasks	Level 4	Level 5	Level 6	Level 7	Other
Understand the terms modelling and simulation					
Create a simple spreadsheet with few errors					
Format a spreadsheet, borders, cell shading, bold					
Use of a simple formula					
Use of basic data formatting, number/ currency etc.					
Can use a variable to change other cell values					
Few spelling errors					
Prepare for printing, landscape, r&c headers on, h&f					
Be able to explain the advantages/disadvantages of modelling/ simulation software					
Create a spreadsheet, mostly successful					
Format spreadsheet and a range (3) of data types					
Create a simple chart/graph with title and named axes					
Use of a simple formula and a function					
Can create a variable to change other values					
No spelling errors					
No errors in working spreadsheet					
Use of at least 3 formulas/functions					
Use of more complex formulas, COUNT, IF etc.					
Use of conditional formatting, autofilters					
Create 2 different charts, title and named axes					
Can explain the advantages of visual data (charts)					
Can explain absolute cell referencing (G2)					
Independent learner – little or no help needed					

Tracking sheet

I have completed, printed out or made electronically available the following:

Recording Data Tasks	Level 4	Level 5	Level 6	Level 7	Other
Can Add, Delete, Edit data in a given database					
Can insert/delete fields					
Can Sort data					
Can create a simple filter					
Can create a complex filter					
Few errors in spelling					
Effective formatting for printing off tables					
Can create an original database of at least 8 records and 6 Fields					
Can insert/ delete/rename Fields					
Use of a range of data types (3)					
Can create a sort for a good reason					
Can create a simple filter for a good reason					
Can create a complex filter for a good reason					
Use of mailmerge*					
No errors in spelling					
Can set up to print in landscape with h&f					
No errors in original database					
Formatting suitable for audience and purpose					
Use of database report feature with MATHS operation					
Can explain the use of primary keys for tables					
Use of autofilters/ validation rules (ACCESS only)					
Excellent understanding of Access or Excel/Publisher mailmerge					
Independent learner – little or no help needed					

*for mailmerge from Works database use Works Word not Office365 word. Alternatively, use an access or excel table and mailmerge with Publisher.