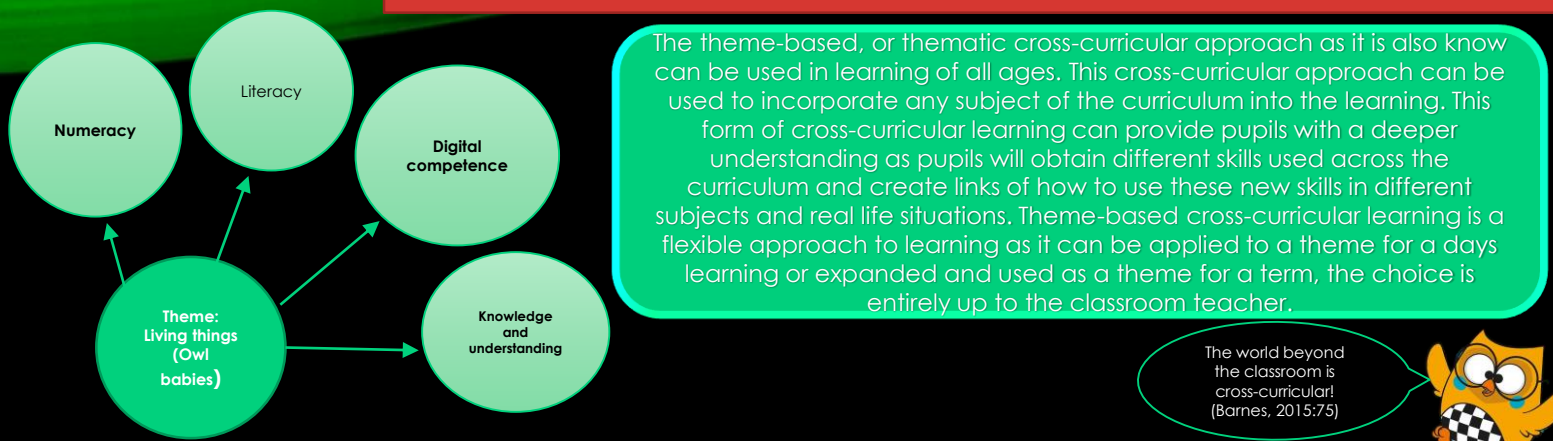


Two examples of cross-curricular teaching which incorporate literacy numeracy and digital competence.

Cross-curricular learning occurs when the skills, knowledge and attitude of a number of different disciplines are applied to a single theme, problem, idea or experience. (Barnes, 2015:62). Donaldson believes that cross-curricular learning needs to be embedded in the teaching and learning of children. Donaldson also believes that it allows teachers to become creative and create a 'rich learning for children and young people' (2015:64)



The theme-based, or thematic cross-curricular approach as it is also known can be used in learning of all ages. This cross-curricular approach can be used to incorporate any subject of the curriculum into the learning. This form of cross-curricular learning can provide pupils with a deeper understanding as pupils will obtain different skills used across the curriculum and create links of how to use these new skills in different subjects and real life situations. Theme-based cross-curricular learning is a flexible approach to learning as it can be applied to a theme for a day, learning or expanded and used as a theme for a term, the choice is entirely up to the classroom teacher.

Incorporate theme-based cross-curricular learning

The theme of living things was selected by a class vote, that gave the pupils an opportunity to share their opinion in their learning (pupil voice quote pupils interest). The use of pupil voice is also regarded as a 'clear benefit for both schools and learners' according to Meilyr Rowlands (2016), the Chief Inspector for Estyn. Due to its great flexibility, this approach will be applied to the class learning for a term. During this term the class will embark on a school visit to a local nature reserve. This will provide learners with the opportunity to make 'links between what is personal, local, national and global' (Welsh Government, 2008:4). This trip will also enable pupils to make links between their learning and real life situations, which is recommended with in the successful futures document.

Knowledge and understanding

Task: To create two individual mind maps. One to state what the child knows about nature and the other to state what they wish to find out. Pupils must then use j2Launch to find out what they wanted to know about nature.
Skill: Identify what they want to find out and how to do it.
Range: Identify some animals and plants that live in the outdoor environment.
Writing skill: To write for different purposes.
DCF, K23: Use j2Launch to search for appropriate websites.
ESDGC: Pupils can explore social and moral dilemmas through social enquiry.

Digital Competency

Task: in pairs use j2E to store and manage data regarding a class vote upon what a good nature garden needs. Then present their findings to the class in a bar chart and brief explanation.
Using number skills: Use and record ordinal numbers in practical situations.
Oracy skill: Express opinions, giving reasons and provide appropriate answers to questions.
Using data skill: Gather and record data from graphs.
DCF, K34: Record data collected in a variety of suitable formats.

Colour Key

Purple indicates the information is relating to the digital competence.
Blue indicates the information is relating to literacy.
Red indicates the information is relating to numeracy.



Numeracy

Task: To design a nature garden for local wildlife to visit, considering the cost and what items will be needed (birdboxes, bug huts, bird feed ect).
DCF, K17: use an online collaborative platform to create or edit a file in one or more languages.
Using number Skill: Use different combinations of money to pay for items up to £1.
Using number skill: Make a sensible estimate of measurement in length, height, weight and capacity that can be checked using standard measurements.
Oracy skill: share activities and information to complete a task

Literacy

Task: To write an email to a member of staff at a local nature reserve, using questions and sharing their own opinions and experiences of nature.
writing skill: Use simple subject-related words appropriately.
DCF, K12: use digital technology to communicate and connect with other locally and globally.
Writing Skill: Use different types of writing appropriate to purpose and reader.
Writing skill: Use capital letters, full stops and question marks accurately, and sometimes use exclamation marks.

Benefits of Theme-based cross-curricular model:

May be used to unify teaching and learning across the curriculum (Barnes, 2015:69).
Can work well to inform and motivate children (Barnes, 2015:69), as teachers can become more creative, authentic, and original with their planning (Michigan State University, 2018).
It can be used to generate learning in a wide variety of subjects (Barnes, 2015:70).
Can enable children to make connections with real world or fiction. (Michigan State University, 2018).
It is a useful time saver for teachers as they can incorporate multiple subjects of the curriculum including compulsory requirements such as the LNF and DCF

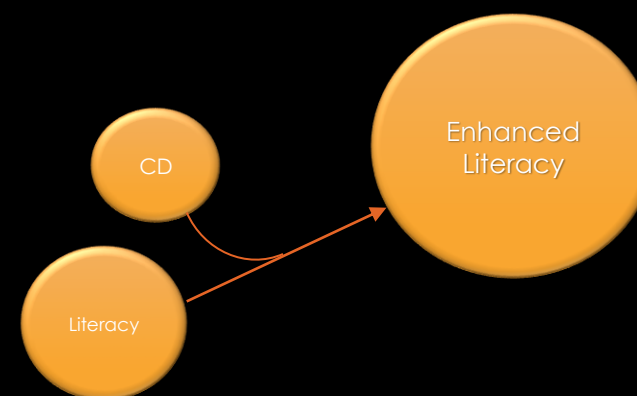
Limitations of Theme-based cross-curricular model:

Create unclear aims for learners (Barnes, 2015:69).
If the theme is not effective it can act as a deterrent of pupil's interest.
Teachers may find it difficult to relate the selected theme to specific themes.
It is possible for pupils to become bored of one specific theme.
Themes may not grasp the interest of all the pupils in the class.

The hierarchical cross-curricular approach to learning is one of the most commonly used within education (Barnes, 2015:66). Hierarchical cross-curricular learning occurs when ideas from one subject are used to enhance the learning in another (Driscoll, 2015:272). Barnes (2015) similarly suggests that the learning a skill in one subject can be used to support the learning in a different subject. Giving the second subject a higher-status. It is common for an area of creative development such as art to be used in a hierarchical context (Barnes, 2015:67). Hierarchical learning has proven a great tool for teachers as it allows them to use subjects they are insecure about or less confident in teaching as an inferior subject to support the learning of another subject. Hierarchical model of cross-curricular learning has also proven to be a highly motivational tool for teachers to use when extending the learning of the class (Barnes, 2015:67)

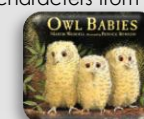
Incorporating hierarchical cross-curricular learning

During this lesson the hierarchical cross-curricular learning will occur. To enhance the learning of the literacy an element of creative development (CD) will be used. The literacy lesson will begin with a quick recap of the 'Owl babies' by Martin Waddell (accompanied by the teacher). Following this the children will then create a short script of what the think will happen the following day/evening for the owls. Once the script as completed the pupils may then act out their own script with a partner. Moving on from this the class will then be given the opportunity to use creative development skills to design and make an owl mask. Once the pupils have created their very own owl mask they will then re-enact the scene from within their script and then be given the opportunity to use their mask in role play with others. The teacher may use this form of role play as a reward to work towards for the pupils, in order to motivate them.



Literacy

Task: To create a script for the next scene following the end of the 'Owl babies' story (the next day). The script must consist of two characters from the story. Pupils will then use their script to engage in role play.
Skill: To track a page of print with eyes without difficulty.
Range: To experience a language-rich environment that immerses them in the spoken and written word.
Reading skill: To read a range of suitable texts with increasing accuracy and fluency.
Writing skill: Use different types of writing appropriate to purpose and reader.



Creative Development

Task: To create a suitable owl mask using various resources and material.
Skill: To make choices when choosing different materials.
Range: To use a wide range of resources and stimuli.
Outcome: 4,5 or 6



Colour key

Blue indicates the information is relating to a literacy skill.

Enhanced Literacy with CD

Task: To perform the created script with a partner to a small audience. As a progression pupils will then engage in role play using their masks.
Range (Oracy): To express themselves creatively and imaginatively.
Oracy skill: Build on previous experience, speaking confidently and making themselves clear by organizing what they say.
Oracy skill: To extend their ideas or accounts by sequencing what they say and including relevant details

Role play enhances children's social development, speaking and listening skills, listening and turn taking! (Limacher-Riebold, 2013)

Through play children exercise their understanding of objects, develop relationships, mimic adults behaviour and adopt fantasy roles (Gray, 2015:98)

Benefits of Hierarchical cross-curricular model:

It can provide genuine linkage between two subjects for pupils.
May provide measurable learning in the two chosen subjects.
It can benefit pupils of all abilities.
It allows pupils to approach the task or topic from a different angle (Price, 2010).
It promotes thinking skills that can be used in different subjects and real-life situations.
It can enable pupils to become more aware of their own learning (Price, 2010)

Limitations of hierarchical cross-curricular model:

It only allows two subjects to be used together.
The learning, knowledge, skills and understanding of the inferior subject may only be improved slightly.
The enhancing/inferior subject can act as a distraction from the enhanced subject, having a negative effect on the learning (Barnes, 2015:66).
Incorporating two subjects into the planning can be difficult and often time consuming for teachers.
The inferior subject may become seen as having a subservice or serendipitous role by teachers and pupils (Barnes, 2015:67).