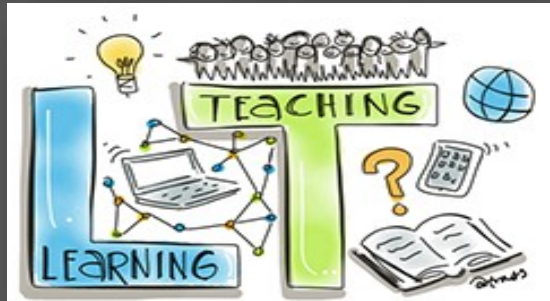


CROSS-CURRICULAR



...is “curriculum integration” through the combination of subjects disciplines linked through a theme, experience or issue (Jacobs , 1989 cited in Hayes, 2010). It is applying the knowledge, skills and attitudes from one area of learning to another (Barnes, 2015).

IMPORTANCE

Donaldson (2015) highlights in his *12 Pedagogical Principles*, that **literacy, numeracy** and **digital competency** are **cross-curricular responsibilities** that can be used as foundations to build further knowledge and skills within other subject disciplines. **This can prepare children to apply their competencies in everyday life as well as the work-force.**

ESTYN (2016)

evidence of good practice in cross-curricular learning and its impact on the pupils:



BENEFITS AND LIMITATIONS OF THE APPROACHES

→ The **double focus** approach allows for ‘**meaningful experiences**.’ For example the children are taken to an environment outside of school and are exposed to ‘real-world’ skills e.g. shopping, baking and selling (Pound & Lee, 2011, Driscoll et al, 2015). This can be used to strengthen the child’s understanding and competencies for a particular subject, fostering engagement, passion and a sense of achievement. Barnes (2015) interprets this as treating disciplines equally. However, the **teacher’s knowledge** needs to be considered in terms of the effectiveness of their **planning** and their **subject knowledge** (Hayes, 2010).

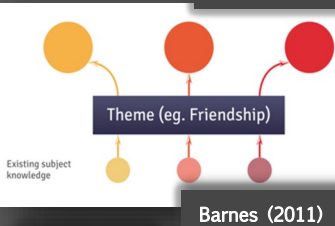
→ On the other hand, with **effective planning and assessment** (including authentic and relevant contexts), a **thematic approach** can motivate children. However, **utilising too much ‘pupil’ voice** (an aspect of the approach) could elicit avoidance of subjects the child may find difficult, hence resulting in ‘poor attitudes’ (Hayes, 2010). Also, too many disciplines involved could cause poor connections.

→ Another consideration for both approaches is the **connections** made between subjects and whether they can provide profound understanding. This can be measured through **assessment for learning** opportunities (Barnes, 2015).

EXEMPLIFYING CROSS-CURRICULAR APPROACHES (BARNES 2015)

USING **LITERACY**, **NUMERACY** AND **DIGITAL COMPETENCY** AS THE FOUNDATIONS

THEMATIC: unifying several areas of learning using a theme.



Theme for the term: *sustainability* – Sustainability should be taught at an early age according to UNESCO (2008).

Foundation Phase: *Year 2*

Curriculum Coverage: *Knowledge and Understanding of the World, Personal and Social Development, Well-being and Cultural Diversity, Literacy and Numeracy, and Digital Competency*

ACTIVITY

The learning objective for this session is to understand what it means to be sustainable by discussing how we can take care of the Earth.

To introduce the theme of sustainability, the children will go on a nature walk in a woodland near the school, and visit a local greenhouse to take pictures (in pairs) of what is around them, in order to appreciate their natural surroundings and to foster curiosity. Back in the classroom the teacher will ask the children why they took a certain picture. Once the importance of the environment is established, they will read the story ‘*Sophia’s Dream*’ by Land Wilson. Children will sit in a circle to discuss what they and Sophia could do to take care of the Earth, with images from the book to support their thinking. This is to **“develop a growing interest in the world around them...”** (Welsh Government, 2015). **Assessment questions** such as “Why do you think it’s important?” and “What do you think will happen?” will be asked, to encourage conversation and dialogue between the children and develop self understanding (Barnes 2015). Establishing rules e.g. only the person with the white or red De Bono hat (Cremin & Burnett, 2018) hat gets to speak, is important as *Lipman* (1991) and *Murris* (2013, cited in *Kizel* 2016) believe that this encourages respect, and gives children the freedom to question and challenge assumptions, making them value their own ideas as well as their peers’. Ideas such as ‘carbon footprint’ and ‘recycling’ will be discussed. In this activity, children are given the opportunity to: **“communicate and reflect on the decisions made in stories...”**; **“ask questions about how and why special things should be treated with respect; respond personally”** (Welsh Government, 2015) and **“express opinions, giving reasons...”** (Welsh Government, 2014).

ACTIVITY 2:

The learning objective for this session is to understand what carbon footprint, the greenhouse effect is and how we can reduce it.

An animated YouTube video of the greenhouse effect will be watched as a class to allow children to **“recognise how people’s actions can improve or damage the environment”**, and understand its **“cause and effect”** (Welsh Government, 2015). The class will discuss how we can reduce carbon footprint, guiding the children to come to the conclusion of travelling less often with a vehicle. To acquire a basic understanding of how much carbon dioxide vehicles release into the air, children will go on *Google Earth* to find out the distance of a car travelling from one area in Wales to another, helping to **familiarise them with units of measurement in length e.g. meters, as well as reading numbers to 100** (Welsh Government, 2014). After this, they will re-visit the video and discuss deforestation (in basic terms) to encourage children to suggest other ways we can help stop carbon dioxide entering the air, subsequently **consolidating their ideas on a mind-map** in groups. This can be used as a tool for teacher assessment (Barnes, 2015). Going back to the video, the suggestion of growing plants in a greenhouse can be used as a link to progress into the next session. **Discussion in groups or pairs** is a key aspect in these activities as children can exchange ideas to generate ‘inferences’ (Higgins et al. 2016).

ACTIVITY 3:

The learning objective for this session is to understand how to grow a plant.

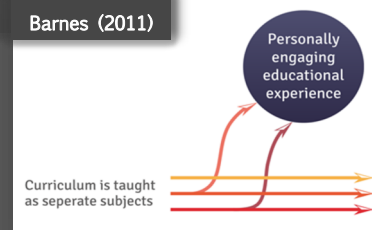
Using *Hwb*, the teacher will share a ‘J2e’ animation file with the children, where they can drag the image of the equipment and materials needed to grow a bean plant onto the background. The purpose of this is to develop the use of an **“online collaborative platform”** (Welsh Government, 2016). An example of a child’s work on the whiteboard will be **discussed**. In their books they will write or draw (in a table) the materials and equipment needed to develop their **“observation and recording skills.”** Also, they can develop the **skill of estimation** by looking at the duration that the bean will grow at, how long it is going to grow and what it might look like. Children can: **explore, experiment, follow instructions** when planting the bean; **think about what might happen; will putting the plant in a greenhouse affect its growth?** and **explain and identify relevant details from text** through e.g. titles and pictures when working with instruction sheets (Welsh Government, 2015).

DOUBLE FOCUS : integration of one or two areas of learning through a ‘shared experience’.

Foundation Phase: *Year 2*

Curriculum Coverage: *Mathematical Development, Literacy and Digital Competency*

Barnes (2011)



CROSS-CURRICULAR EVENT :

Activities leading up to the school fete and activities after (*interdisciplinary*).

ACTIVITY 1:

Learning objectives are: to use the search engine, navigate around the Tesco website and buy ingredients at Tesco.

The children will work in groups with an adult to find recipes for cookies, cakes and their ingredients on the Tesco website, to make and sell at the school fete. Here, children can **identify the meaning of texts and key words using images and the layout**. The groups will discuss the weight or capacity of the ingredients, and its cost. Each child, will write a list of the ingredients to take with them on the trip to Tesco, giving them the opportunity to **follow a structure to plan their writing as well as making links with the text and the topic** (Welsh Government, 2014). Following this would be an educational trip to Tesco to buy the ingredients using the Tesco scanner. There are lots of opportunities for children to engage in discussion about prices. **Assessing engagement** through children’s reactions and concentration is essential in informing future planning (Barnes, 2015).

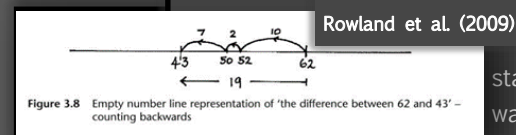
ACTIVITY 2:

Learning objectives are: to decide on the prices of cakes and cookies, estimate the amount of cakes and cookies they’re going to sell.

Once the children have baked the cookies and cakes, they are going to look at how many they have made as a class and decide on how much to sell each piece. Again, children **can talk and listen to each other**, and work together to **come to an agreement** (Kizel, 2016). The children will then ask each other how much money they think they’re going to raise, and record it in their table that has been shared by the teacher through Hwb. This enables them to **gain an understanding of a basic way to use a table on a software** (Welsh Government, 2016). The children will go back to their estimations and develop their numerical reasoning by **discussing (in pairs) how they came up with their estimation and how they would arrive at the actual cost** (Welsh Government, 2014). This can be used as **peer assessment**.

FOCUSED SUBJECT TEACHING:

The children will practice and refine their mathematical skills of adding and subtracting following these events. This will occur during focused tasks using: empty number lines to show representations of addition and subtraction:



when adding 11, but jumping one to the next square (Rowland et al. 2009). Also, each child will have their own card and pin number in the role play area to use them to shop at the supermarket. The purpose of this is to **make them aware of the different forms of money**, as this can be the basis in developing their **financial literacy** in order to become **“healthy, confident individuals”** in the future (Donaldson, 2015).