

Cross-Curriculum Responsibilities

Literacy, numeracy and digital competence should be embedded across the curriculum where appropriate to help children make meaningful connections and learn fundamental skills needed for life and the world of work and gaining understanding how to apply these to different contexts.

Theme Based

Through themes, learning can be generated across a wide range of subjects. The year 4 theme of 'space' is an example of this. This theme has strong links to science but through careful planning can be utilised to teach a variety of subjects/areas of learning, examples of this include: space exploration (history), weather on different planets (geography), space related music such as space odyssey (P.E, music and drama/expressive arts) and the diet of an astronaut (D&T, PSE) however, subjects should only be included if they deepen understanding of the theme to avoid "tenuous links and unclear aims" (Barnes, 2015 p. 69).

Examples of 'shared experiences' based on the theme: 'space week' or 'science week' across the school, a trip to Tim Peake's spacecraft in Cardiff museum, 'cosmic classroom'.

Curriculum coverage (building a rocket):

D&T

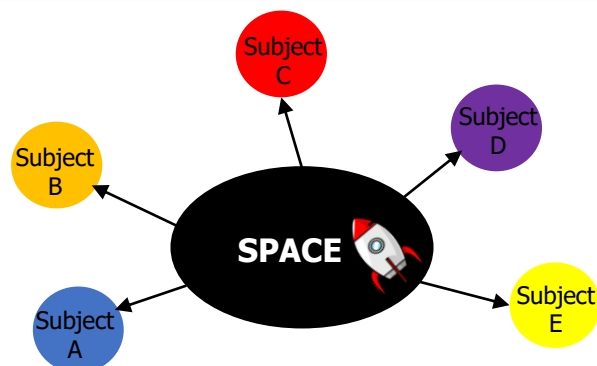
designing – evaluate and develop, needs of user (7)
Making – materials, alternative ways of making, discussing and evaluating (2,4,6,11)

Science

Communication – vocabulary, speech, tables, digital
How things work – Forces (2, 3)
Enquiry – planning - predictions, variables, observations and measurements, equipment and techniques, risks (2,3,5,6,7)
Developing - Observations, measurements, data (2,3)
Reflecting – evaluate, amendments and improvements (2,3,4,5)

Task – Building a rocket

- Create foam rockets that will be launched from a compressed air launcher as part of small group
- Discuss materials and techniques before building with scientific vocabulary cards
- Experiment with modifying their rockets and record their launch
- Measure the distance flown and use class data to create a table
- Discuss effective designs and make adjustments for a re-launch
- Write up investigation digitally in the form of a presentation



DCF:

Data and computational thinking & Data and information literacy

Create data sets and extract information from them with tables, charts, spreadsheets and databases – table with information from experiment.

Producing – Creating

take photos and record experiment, modify and present information.

Numeracy:

Measuring skills, data skills

Literacy:

Writing – Use specific structure, introduction, ideas, conclusion, logical sequence, visual information (table/graph, photos), use subject specific vocabulary.

Oracy – work collaboratively, explain ideas and findings

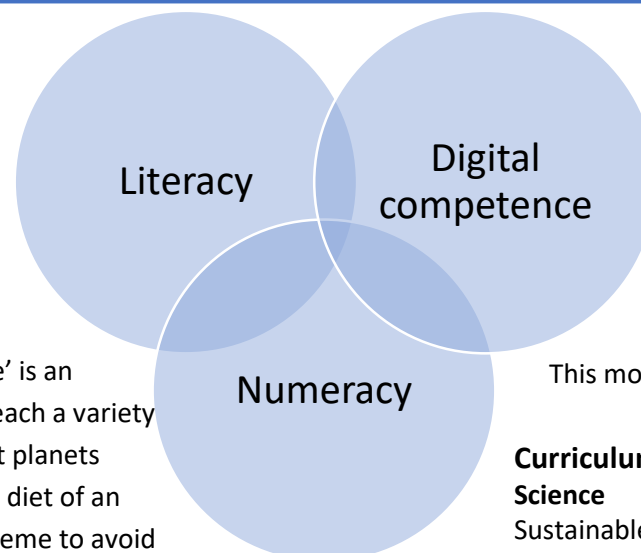
Theme-Based Model

Benefits

- Provides opportunities for interesting experiences
- Can involve the whole school and wider community
- Flexible
- Opportunities for pupil consultation and participation
- Subjects can be of equal importance

Limitations

- The theme may not be of interest to the children
- Needs to be authentic and capable of being sustained
- Needs careful planning for progression of skills across the curriculum
- Not all subjects will deepen understanding of the theme
- Links and aims may be unclear



Year 4



Space theme



LNF and DCF

There are a variety of ways in which a cross-curricular project can be taught. Barnes (2015) has identified eight types of cross-curricular approaches. This poster explores two of them; theme based and hierarchical.

Hierarchical

This model aims at "achieving progress in one discipline by also teaching aspects of another" (Barnes, 2015, p.66).

Curriculum coverage (task 1):

Science

Sustainable Earth – solar system (2)

Music

Performing – instruments, group work, practise and evaluate (2,3,4,5,7,8)

Composing – purpose, develop ideas (1-4)

Appraising – listen, discuss, musical elements and characteristics (1-4)

Literacy:

Oracy – listen carefully, explain ideas, contribute to group discussions

DCF – Producing – relevant information, appropriate websites, modify and evaluate.

Interacting and collaborating – files and storage.

Curriculum coverage (task 2):

Science

How things work – forces

Communication – standard measure

Maths

Allow for numerical reasoning throughout, measuring skills and equations and inequalities



BBC Bitesize clip and task ideas

Task 1 - Music enhancing science

- Listen to one of Holst's pieces on planets and appraise it
- Consider elements of music and how they are used
- In groups, use effective research skills to find out more about a planet
- Research can look at size, distance from the sun and any distinguishing features
- Considering how they can represent the planet through music and create a plan using techniques such as mind maps or flow charts
- Compose and perform their piece of music
- Record performances and edit them using software such as windows photos of iMovie
- Share the performance with the class
- Listen effectively and consider reasons for each groups choices

Task 2 - Science enhancing maths

- Find weight of everyday objects on different planets
- Explore gravity and weights as forces and the difference between weight and mass
- Use a weighing scale to calculate and objects mass
- Begin estimating based on size
- Use conversion charts to calculate weight of objects on different planets based on gravitational pull

Hierarchical Model

Benefits

- Helps children make connections between subjects and apply skills to different contexts
- Can be highly motivating and inclusive, extending learning to more pupils
- Can produce effective and lasting learning
- Can be a way for practitioners to teach 'weaker' subjects

Limitations

- Risks being 'tokenistic'
- Often little is progress is made in 'inferior' subject
- Some subjects risk always being seen as 'submissive'

Estyn



Good practice in developing a skills-based curriculum

