

Colonising Mars

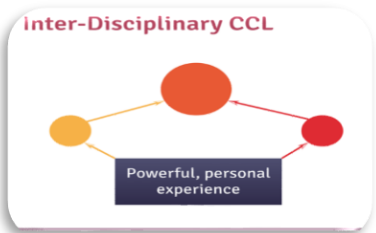
Cross Curricular Teaching for Year 5 Students

Abstract: To exemplify theme based and inter-disciplinary cross-curricular teaching in a KS2 year 5 class by combining theory and practice.

Method: The lessons will revolve around the theme of the colonisation of Mars. Through a series of lessons lasting over a term learners will form small groups of 4-6 pupils to develop their own colonies on Mars. The pupils will create their own governments and laws, develop currency, housing, trade, educational systems as well as develop relationships with the other colonies on Mars. Each group will be given a specific budget to set up their colony but how they spend it is up to them. These lessons will be taught using theme based and inter-disciplinary cross-curricular teaching as these methods allow subjects to be taught in a way that results in rich and meaningful experiences for students.

Inter-disciplinary Cross-Curricular Teaching

Considerations: According to Jacobs¹ inter-disciplinary cross-curricular teaching must involve a conscious effort to apply knowledge, principles, and/or values to more than one academic discipline simultaneously.



- Benefits:
- Applies, Integrates , and transfers knowledge
 - Increases motivation
 - Improves learning
 - Makes connections in meaningful contexts²⁻⁵

- Limitations:
- Requires a speculative, flexible, highly inclusive and bold teaching style.
 - Can easily result in less clarity about what a subject entails
 - The testing system does not support inter-disciplinary teaching and learning.⁶⁻⁸

Thematic Cross-Curricular Teaching

Considerations: According to Barnes⁹ when choosing a theme you must consider whether the learning is:

- Authentic
- Related to the rich resources of the community.
- Capable of being sustained over a period of time.
- Well-planned
- Well-assessed
- Serviced only by subjects that genuinely add to understanding

- Benefits:**
- Learners acquire, communicate, and investigate worthwhile knowledge in depth.
 - Learners make choices, interact, collaborate and cooperate.
 - Learners can apply what they learn in meaningful and “real world” contexts.
 - Emphasis is placed upon meaning making, problem solving and discovery
 - Facilitates experiential and situated learning¹⁰⁻¹⁴

- Limitations:**
- Guidelines on teaching thematically can be general and often vague.
 - Almost all of our testing is supported by subject specific teaching.
 - Monitoring progress of content specific skills which are embedded into the theme can be difficult.¹⁵⁻¹⁷

Lesson Outlines and Skills Acquired

Lesson A:
Learners will develop a website in order to attract people still living on Earth to move to their colony on Mars. This lesson will take place over the course of the week and the learners will be required to include these things on their website:

- Information about their government
- Industry
- Lifestyle
- Interviews detailing what it is like to live in their colony.
- Benefits to living in their colony in contrast to remaining on Earth.
- Charts and Graphs summarising their budget plans as well as showcasing their projected growth in population and industry.

Lesson A:
Using prior learning learners will choose a government for their colony. They will create a manifesto for their government

Lesson B:
Learners will create a budget report showcasing how they will spend their money to develop their colony. The reports will be presented using a variety of graphs.

Lesson C:
Learners will prepare to attend a conference with other colonies on Mars, the aim of the conference is to share good ideas and open up communications and trade routes.

Skills Acquired¹⁸⁻¹⁹

Mathematical Skills

- Select and use appropriate charts, diagrams and graphs with suitable scales.
- Represent data using: lists, tables, bar charts, line graphs and diagrams.
- Recognise that some events are more likely than others



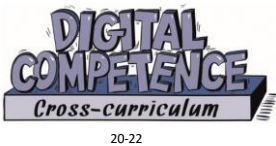
Literacy Skills

- Explain information and ideas, exploring and using ways to be convincing.
- Build on and develop the ideas of others in group discussions.
- Explore the layout of web pages to create material using available tools.



Digital Competence Skills

- Work with others to create an online collaborative project for a specific purpose.
- Combine a range of multimedia components to produce an appropriate outcome.
- Explain reasons for layout and content of own work



Mathematical Skills

- Identify the appropriate steps and information needed to complete the task and reach a solution.
- Plan and track money by keeping accurate records.
- Represent data using lists, tally charts, tables and diagrams

Literacy Skills

- Build on and develop the ideas of others in group discussions
- Gather and organise information and ideas from different sources.
- Use images, graphs and illustrations which are clear, relevant and appropriate

Digital Competence Skills

- Work with others to create an online collaborative project for a specific purpose
- Create a written plan using a template provided
- Create, collect and combine a range of text, image, sound, animation and video for selected purposes.