

# How to Integrate Science in a Cross-Curricular manner in a KS2

## Space- 'The Final Frontier'

## Environment using Space

## Space- 'The Tim Peake Story'

### Theme based Cross-Curricular Approach

**Benefits-** Barnes (2015) suggests that learning using a theme based cross-curricular approach suggests powerful engagement, which allows a high level of subject knowledge and skills to be attained in a cross-curricular manner. He also argues that learning using this approach is “memorable, deep, transferable and transformative” for some pupils (Barnes, 2015: 92). Therefore, this shows a high level of learning for the pupils.

**Limitations-** However, Barnes and Shirley (2007) argue that teachers have had limited experiences when teaching cross-curricular work. Therefore, not being able to teach at a high enough level to enhance the pupils learning.

### Setting a SMART Learning

**Objective (Gregory, 2015)-** During the following sessions you will need to use a variety of skills to create a method on how to do common, daily tasks in 'Zero Gravity' Space.

**Activity-** The pupils will be shown a video of what 'zero gravity' space is like (See QR code for Video). They will then be asked how they think astronauts in 'zero gravity' encounter daily tasks, for example; brushing their teeth or washing their hair. The pupils will then on their tables create a mind map of what they want to discover. Ruddock and Flutter (2004, p.6) suggest, giving the pupils a voice will let them "feel in control" of their learning making them engaged in their learning. They will then choose one idea and complete the following tasks.

### Activity Links to Frameworks:

**DCF (2016)-** The pupils will have to undertake online research and find relevant information about how to conduct daily tasks in space. To achieve this the pupils will have to search keywords and select reliable websites to attain the relevant information.

**Literacy (WAG, 2016)-**

**Writing-** Pupils will have to adapt their language by including a variety of adverbs and Synonyms to create a method on how to do the tasks.

- They will also have to organize information into a logical sequence.

**Numeracy (WAG, 2016)-** The pupils will need to identify the appropriate steps that will need to take place in order to complete their method on how to do the daily task in space they have chosen.

**Success Criteria-** This will be completed with the pupils. This allows the pupils to have ownership over their learning, which leads to discussion, and developing pupil's independence (iAMeducation, 2016). However, Clarke (2016) argues that a co-constructed success criterion lacks purpose and has no real effect on their learning.

### Opportunistic Cross-Curricular Teaching

**Benefits-** Alexander (2010) argues that this approach, allows pupils to go into the topic deeper because of their genuine interest in it. This Therefore, gives the pupils a prominent voice, in planning the curriculum. Donaldson (2015: 69) also suggests that “Learners need to become involved in planning their own learning”. This approach allows this to take place because they will have control of what they want to learn and how they intend to learn it.

**Limitations-** However, Hayes (2010: 383) has concerns that allowing pupils too much choice, "allows children to avoid areas of learning that they find hard, thereby inculcating poor work habits and attitudes."

### SMART Learning Objective (Dalto,

**2013)-** By the end of the sessions, I will be able to use a variety of skills to create an accurate online fact file about the British Astronaut Tim Peake.

**Activity-** Prior to this lesson the teacher has realised that the pupils in their class are very interested in the 'International Space Station' and in particular the new British Astronaut called Tim Peake. Flutter (2007) suggests to take this opportunity for learning further, to have a greater impact on the pupils learning. The teacher has decided to teach the children on how to create an online fact file using Hwb. the pupils then have open access a variety of resources such as books, online research and films to complete the task. The pupils will also have a list of what they must include in the fact file, which can make the lesson cross-curricular.

### Activity Links to Frameworks:

**DCF (2016)-** Pupils will have to research online to find reliable and accurate information and present that information for the purpose of a fact file. They will also have to order, create and edit using Hwb using a variety of DCF skills.

**Literacy (WAG, 2016)-**

**Reading-** Pupils will have to read and locate relevant information about Tim Peake and summarise that information into include into online fact file.

**Writing-** Pupils will have to organise information and change the way that the right for the purpose of the reader.

**Numeracy (WAG, 2016)-** To research into information further, the pupils will be asked to compare Tim Peake's timeframe on the space station to others on it. To do this the pupil will need to use relevant mental and written methods in order to calculate the correct answer.

