Science Fiction that is Out of this World!

KS2 Science Fiction - Lesson 1

Evidence-Based Learning

Using simple stories to develop advanced learning skills

An extensive review of educational research has identified the 8 key **E**vidence-**B**ased **L**earning (EBL) skills

Four of these EBL skills are developed in this lesson through *Science Fiction*

Collaboration	
Thinking Skills	**EBL skills**
Self-Assessment	
Metacognition	

This lesson explores:

the settings, characters and plots of science fiction stories. Pupils use this information to design a poster showing the features of a science fiction story.

Drink your oil and eat your nuts and bolts they said - you could be a star in a science fiction story.

Our EBL resources will develop all eight key thinking and learning skills

Our EBL resources will develop the eight key thinking and learning skills identified by extensive educational research as necessary for developing the highest levels of thinking and learning.

The ideal vehicle with which to develop these eight key skills are simple stories because once pupils know a story well, it is possible for them to think about and manipulate that story in increasingly complex ways.

5 MINUTES evidence-based CPD

Our EBL resources will also develop teaching skills

This lesson also contains
an overview of EBL

plus

a 5 minute evidence-based
teacher CPD activity

What is Evidence-Based Teaching and Learning?

Evidence-based teaching and learning is based on the principle that teachers should use research to make informed decisions with regards to learning

Evidence-based approaches to learning and teaching – Mar 2020
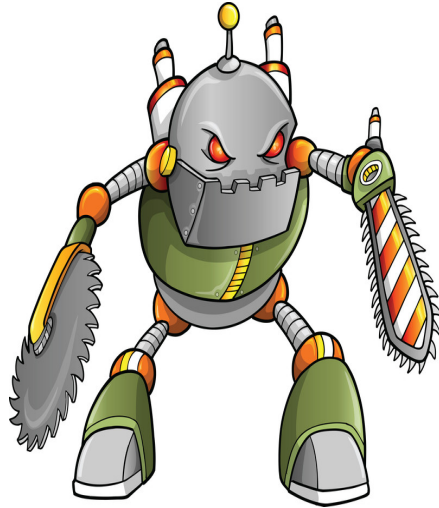*European University Association – eua.eu*

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Lesson Content

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Teaching Unit

Collaborative Poster Activity

Collaborative Self-Assessment Activity

Collaborative Metacognitive Activity

Five-Minute CPD for Teachers: **Metacognition**

5 MINUTES CPD	There is a 5 minute evidence-based CPD activity for teachers to add to their own skill set.
🤔	A different emoticon is used for each of the eight EBL skills to reinforce for pupils which skill they are currently learning.

A science fiction story usually contains these features

a distant setting	good characters	bad characters
the setting often begins on a spaceship going to a distant planet and then the story is set on the planet itself	the good characters are usually the astronauts going to the planet and friendly aliens that already live on the planet	once the astronauts get to the planet they often clash with nasty aliens or robots that also live on the planet

The setting in a story is the place where the story is set
the two usual settings in a science fiction story are…

on a spaceship that is
travelling from Earth
to a distant planet

once the spaceship lands on the
distant planet the setting of
the story will be the planet

Science fiction stories are often set on an imaginary distant planet…

because it allows someone from Earth to travel to a strange world and meet strange characters and this can lead to an exciting story

Science fiction stories are usually set in the future
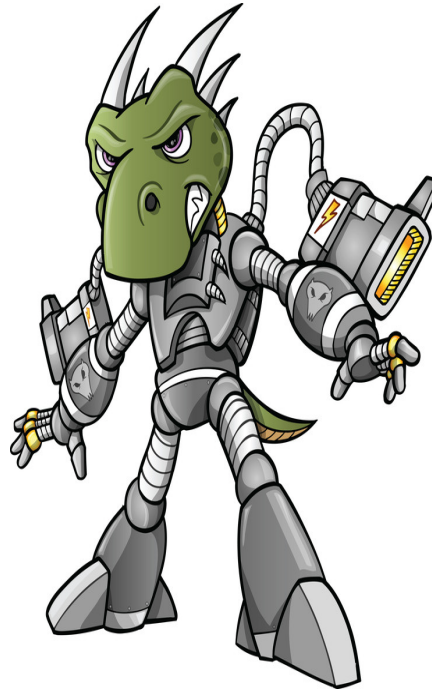
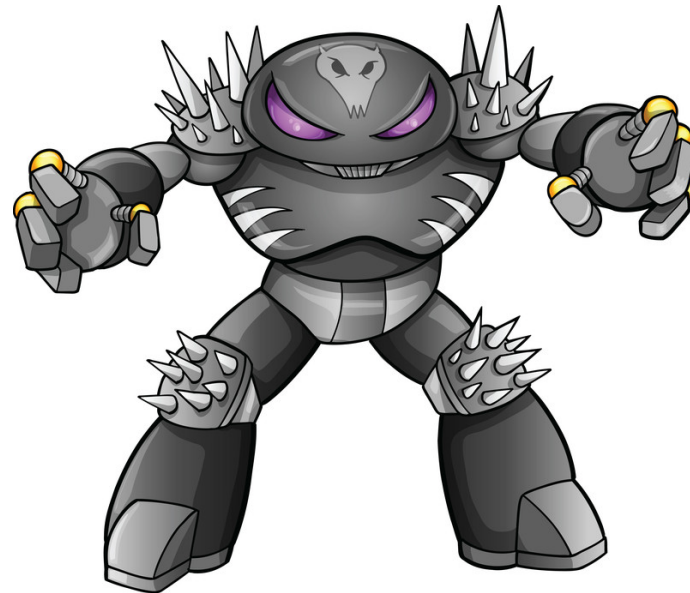Setting science fiction stories in the future allows the writer of the story to include imaginary characters

the characters in a science fiction story will be a combination of both friendly and hostile imaginary characters

The three types of characters in a science fiction story are usually astronauts, aliens and robots


Some of the characters in a science fiction story will be astronauts from Earth that have travelled to another planet

the other characters in the story will be the aliens and robots that already live on this planet

The planet that the astronauts have landed on usually has nasty aliens or robots living on it


this allows a clash between the good characters - the astronauts - and the bad characters that live on the planet

As well as the nasty aliens or robots that
live on the planet there might also be…
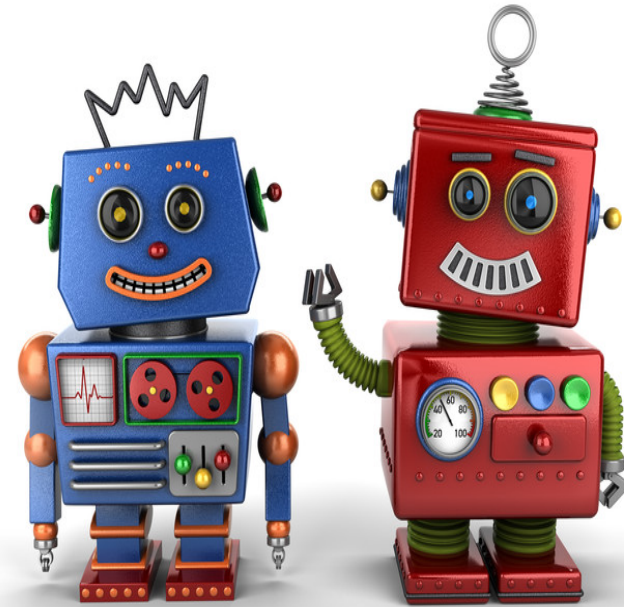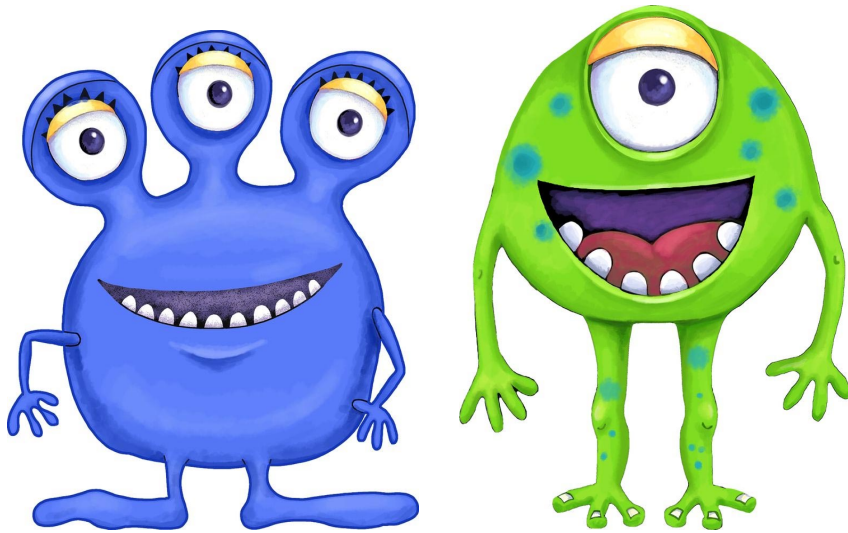
friendly aliens and robots that help the astronauts
fight the unfriendly characters on the planet

Science fiction stories are set in
imaginary places with imaginary characters
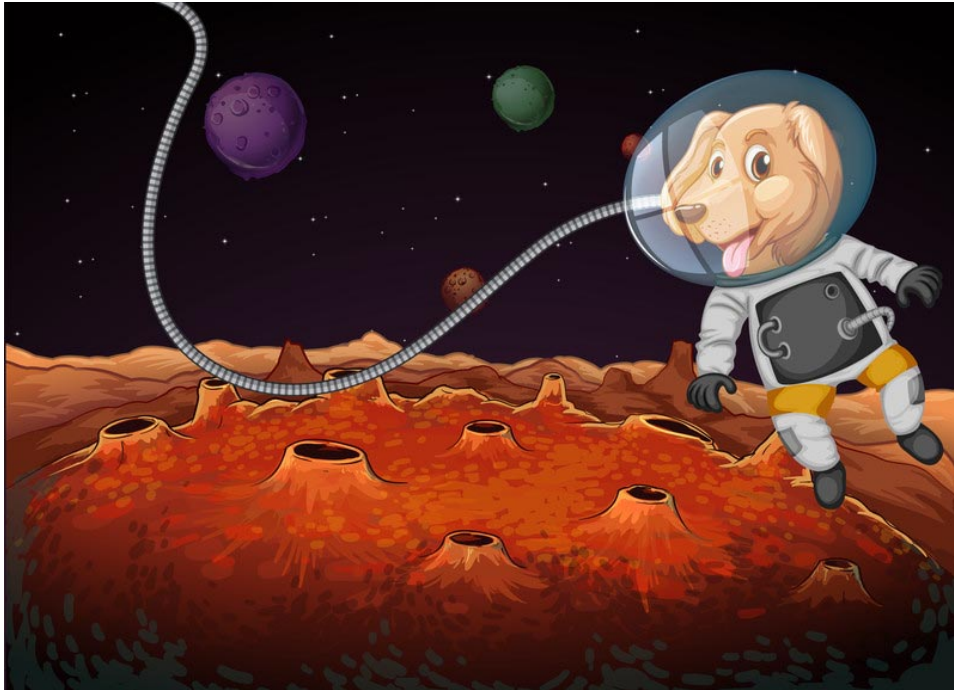
Because science fiction stories are imaginary (made up), they allow the writer of the story to include any type of futuristic settings or strange characters in their story

most of the characters and settings
in a science fiction story will be imaginary

Science fiction stories are set in the future
because the events in them can be imaginary
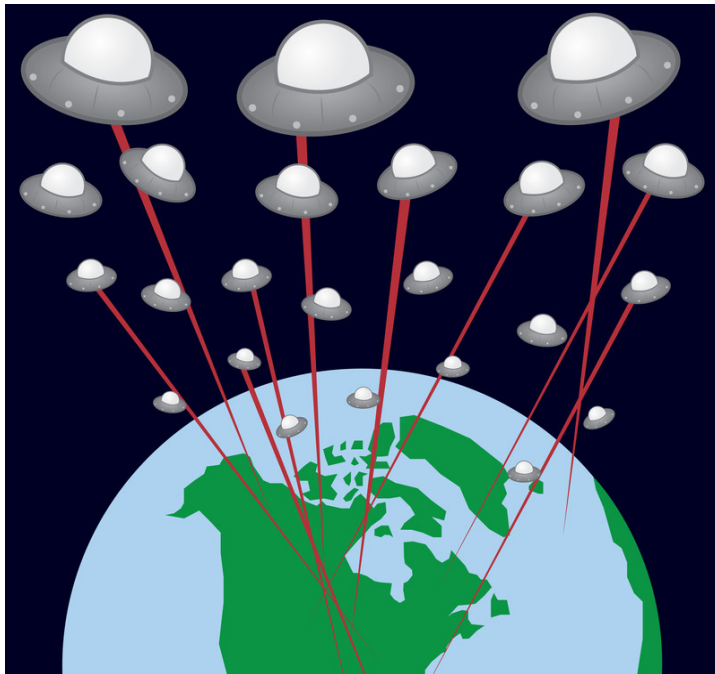
Setting science fiction stories in the future allows the writer of the story to include imaginary types of technology in the story that haven't been invented yet

as well as

imaginary characters that do not exist at this present time

Because science fiction stories are set in the future, imaginary events can happen - such as Earth being invaded by hundreds of flying saucers.

The plot of a story is what happens in the story.

The plot of most stories involves
a **problem** that needs sorting out.

Different types of stories have different problems. In science fiction stories, the problem in the story usually involves aliens or robots.

In a science fiction story, the problem might be that a spaceship lands on another planet and then can't get home because the spaceship has broken down.

While that problem is being sorted out a second problem might appear - unfriendly robots that make repairing the spaceship impossible.
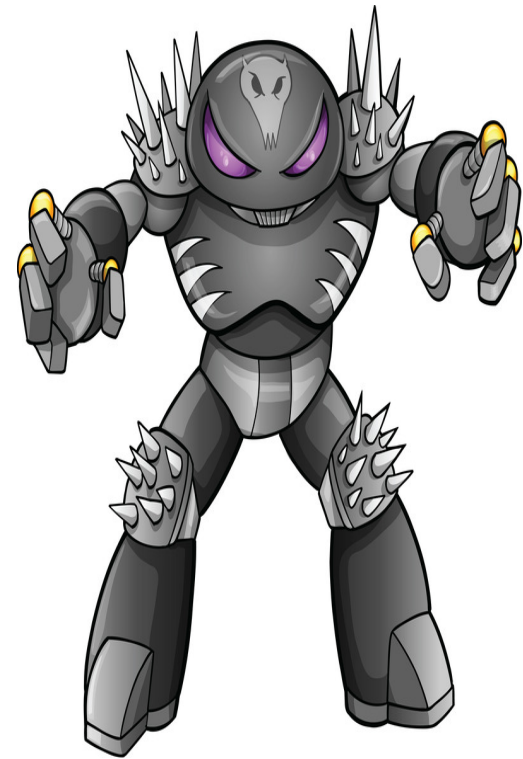
Included in the plot of many science fiction stories is a fight between good and bad characters
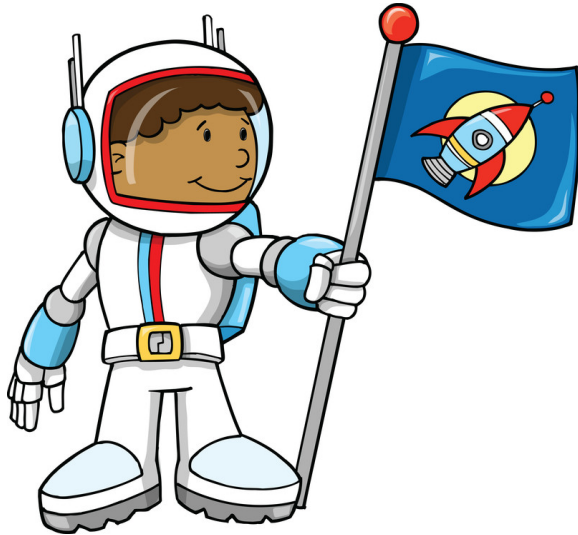
In science fiction stories, the good characters are often astronauts and the bad characters are often nasty aliens or robots.

These aliens and robots will usually have more advanced weapons and technology that the astronauts from Earth have.

A science fiction story is often set on another planet because it is
a good place for someone from Earth to meet aliens and robots.

The theme of a science fiction story is often a clash (a fight) between good
characters from Earth and bad characters on another planet.

The clash between good and bad characters is different from the type of fight
in a pirate story where pirates have a sword fight over who keeps the treasure.

In science fiction stories, the clash is based on technological superiority,
such as who has the most advanced weapons or the fastest spaceships.

Science fiction stories are **set** in the *future* because the technology in them has not been invented yet
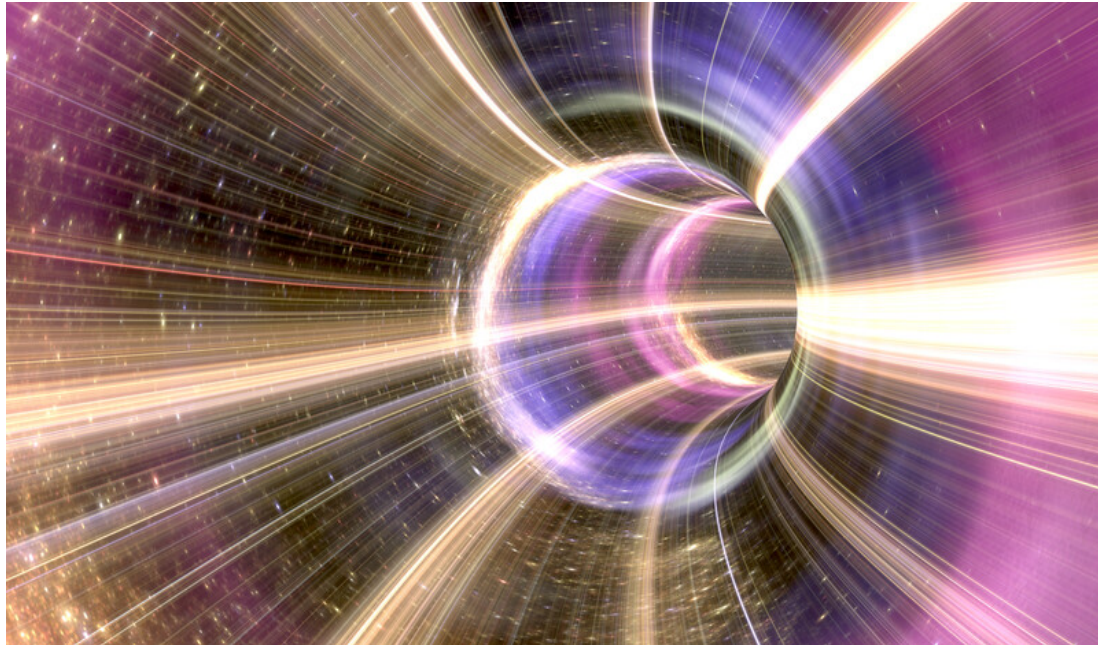
Setting science fiction stories in the future allows the writer to include new types of technology that hasn't been invented yet - such as wormholes

One example of technology that has not been invented yet are wormholes - these are explained on the next page

Science fiction stories include things in them that have not been invented yet - such as wormholes
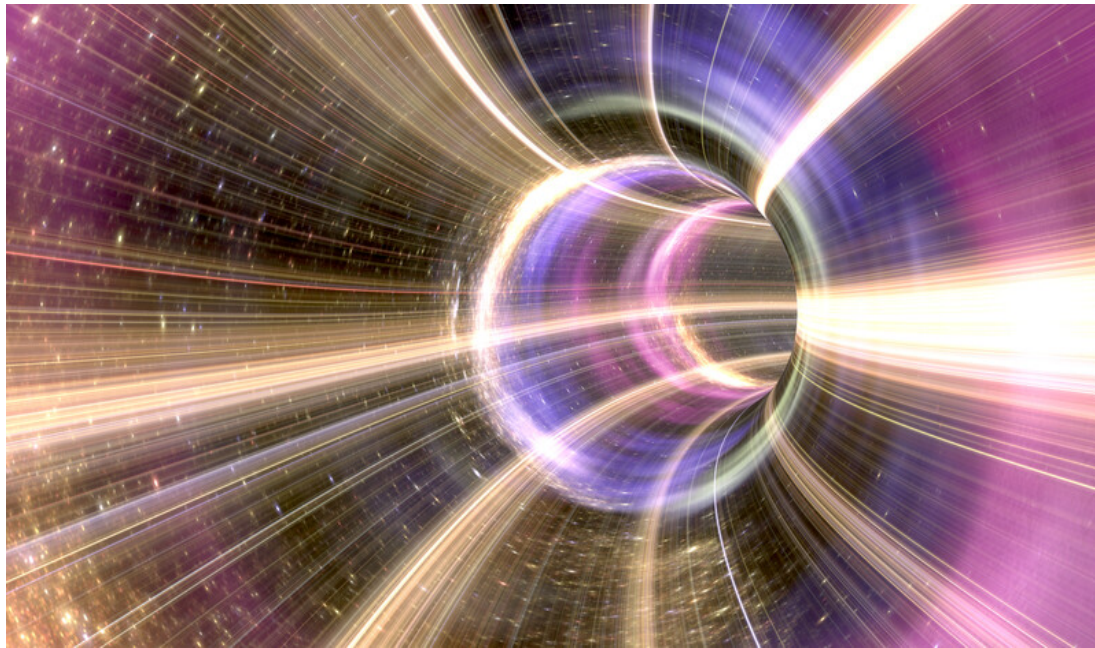
A wormhole is an imaginary tunnel through space and time that could create shortcuts for long journeys across the universe.

*Science Fiction Ideas and Technologies That Could Be Possible in the Distant Future - Aug 2021
interestingengineering.com

Science fiction stories usually have a happy ending
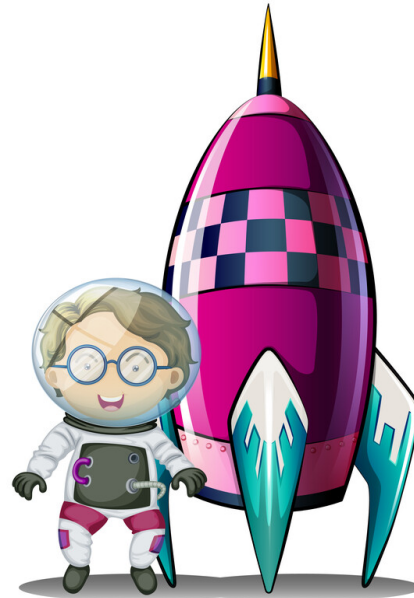
for example, the good characters arrive safely back home after their adventures

Collaborative Poster Activity

Work with a partner. You are going to work with a partner to design a poster showing the features of a science fiction story. Working with a partner will help you to learn more because you will be able to discuss the task with them.

Before you begin this activity, you need to remind yourself:

How to Design a Poster

Before you begin your poster remember that your poster…

- should be a quick guide to the **features** of a science fiction story
- should have an attractive **layout**
- should be **eye-catching** (e.g. different sized text, different coloured text etc)
- should have a **title** (e.g. The Features of a Science Fiction Story)
- should use short **bullet points**
- could have a **picture** (or a diagram)
- should be **simple** and **easy** to read (e.g. use words and phrases not sentences)
- should be **big** enough to be read from a distance

- The next page tells you more about this task.

You are going to design a **poster** about the features of a science fiction story. Answer the questions below **before** you start your poster.

Where are science fiction stories set?	**When** are science fiction stories set?
Who might be in this type of story?	Who **else** might be in this type of story?
What might happen at the **beginning** of a science fiction story?	What might happen at the **end** of a science fiction story?

- Use a large sheet of paper to make your poster.

Collaborative Self-Assessment Activity

Self-Assessment		
Did our poster…	YES	NO
Have a heading saying what it was about?		
Look like a poster?		
Say when a science fiction story is set?		
Say where a science fiction story is set?		
Say who is usually in a science fiction story?		
Say what usually happens (the plot) in a science fiction story?		
Was our poster…		
Attractive and easy to read?		

Collaborative Metacognitive Activity

You will learn more if you think about how you are learning

This is something that a metacognitive thinker would ask themselves:

Did making a poster about the features of a science fiction story or checking this poster help me the most to remember the features of a science fiction story?

Discuss this with your partner and then both of you need to copy the words in the thought bubble and complete the sentence.

What helped me the most to remember the features of a science fiction story was…

This is metacognitive thinking!

Teacher Overview

The first table shows the eight EBL skills identified by research as key to learning. Each skill has its own icon. The second table shows the skills that were developed in *this* lesson and their purpose.

The eight EBL skills proven to maximise learning			
Collaborative skills	Thinking skills	Peer Assessment skills	Peer Teaching skills
Self-Assessment skills	Metacognitive skills	Self-Regulation skills	Independent Learning skills

This lesson has developed these EBL skills	
self-assessment skills	to involve learners in making judgements about their achievements and the outcomes of their learning
collaborative skills	to develop the most effective ways of working with peers
metacognitive skills	to develop the capacity to understand their own thinking processes - which has more impact on learning than ability
thinking skills	to develop and consolidate higher and lower order thinking skills

Five-Minute CPD for Teachers: Metacognition

All eight EBL skills
are research-driven.

An example of the research that supports the metacognition used in this unit is:

Pupils can learn metacognition from a peer

A pupil learns better with a peer because the peer:

- provides an audience
- prompts more metacognition
- or maintains the pupil's focus on a task

Adapted from: Cooperative and Collaborative Learning
Angela M. O'Donnell – www.education.com

Discuss metacognition with a colleague?	☺	😐

Five-Minute Evidence-Based CPD

A good question to ask yourself after this lesson is "did my pupils decide whether making a poster with a peer or the 'self-assessment' of this poster with a peer helped them to learn more about the features of a science fiction story?"

The activities in this lesson can be used as a 'health check' for pupils' metacognitive skills because they have been asked to think about **how** they learn best:

few		**many**		**most**	

of my pupils were able to identify whether they learnt more about the features of a science fiction story from…

- creating a poster with a peer
- the 'self-assessment' of this poster with a peer

5 MINUTES CPD

Action Step

This means that metacognitive skills in my classroom are:

a	on track.		(✓)
b	in need of a reboot.		(✓)