

Missions

Teacher Lesson Plan 007



This lesson plan does not assume previous experience of the game. Teachers may show VC from *Checkpoint KIDS* of the game, use YouTube clips, or play the game.

The lesson is designed to engage children with a learning opportunity based on computer gaming and is not intended as a substitute for teaching the National Curriculum.

English Assessment Objectives are provided as a means of justifying the lesson in a school environment.

All lesson timings are approximate.

Checkpoint KIDS welcomes students' work for submission, but only if the relevant permission slips are completed.



Issue: 10

Theme: Missions

Game: **Mars Horizon** Lead a major space agency as you guide humanity to Mars in this strategy simulation game. Construct a base, design and build rockets, conduct missions throughout the Solar System, and write your own history of Space exploration. Created with support from the European Space Agency and the UK Space Agency.

<https://www.aurochdigital.com/marshorizonvideogame>

Genre: Simulation/Sandbox

Focus: Writing for a purpose: Informative News Article

Learning Objectives:

By the end of this learning episode you will:

- know how to write a printed news article
- understand bias
- Extra:
 - understand the difference between open and closed questioning
 - understand how to prepare for and conduct an interview

Note: This lesson plan includes research, writing newspaper articles and interviewing techniques. For an overview of the various teaching options available see TLP007 Resources Index

Assessment Objectives:

English	A05	adapting for purpose/audience and organising ideas	Writing a newspaper article in the correct form and style.
	A06	sentence structures adapted to purpose with accurate spelling and punctuation	Correct use of verb tenses. Headlines.
	A08	listening and responding appropriately to spoken language, including questions	Interviewing.

Literacy Objectives:

- SPaG, verb tenses

Duration: 3 x 45 minutes

Starter – Introduction to Newspapers (use only if required)

- there are several types of newspaper:
 - broadsheet – serious in-depth news – politics, financial, world (*The Sunday Times*)
 - tabloid – less in-depth, easier to read, sensationalist, celebrity focused (*Daily Express, Daily Mirror*)
 - compact – smaller broadsheet (*The Times, The Guardian*)
 - many papers are now online (*The Independent*)
 - regional and local
- although all newspapers contain bias, broadsheets are generally more factually truthful than the tabloids
- conventions, timing:
 - newspapers generally tell yesterday's news because they have to be printed
 - Last night the country saw wind speeds of up to 60 mph...
 - verb tense: past
 - online newspapers can be more up to date and contain 'breaking news'
 - The town centre is experiencing severe flooding due to yesterday's storms...
 - verb tense: present
 - papers often speculate about future events
 - The government say they will be putting extra funding into sea defences...
 - verb tense: present/future
- conventions, frontpage splash:

Front Page Splash (main story)		
Feature	Broadsheet	Tabloid
headline	correctly written sentence – larger than main body of text	brief statement – can dominate whole page
image	approximately 25% of page	can dominate whole page
copy	up to 75% of page	one small paragraph

- use TLP007WS1. Ask students to identify the type of paper and note the conventions
- identify:
 - masthead
 - splash
 - headline
 - hook/key sentence
 - main copy
 - images (captions)

Starter – Orientation: ESA, ESOC and Mars Horizon (must use)

- acronyms
 - ESA European Space Agency
 - ESOC European Spacecraft Operations Centre
- run ESOC introductory video clip – 11 mins
https://dlmultimedia.esa.int/download/public/videos/2013/02/021/1302_021_AR_EN.mp4
- introduce Solar Orbiter mission
- show ESA Solar Orbiter image and poster
https://www.esa.int/Science_Exploration/Space_Science/Solar_Orbiter_overview
- ESA Solar Orbiter TLP007WS2 Our Solar System and ESOC Information (inc. Solar Orbiter)
- ESOC control centre simulation - essential viewing for context
<https://www.youtube.com/watch?v=xhM-bqXTKoU>
- introduce Mars Horizon
 - game trailer
<https://www.youtube.com/watch?v=EG36A4GVPTE>
- collaboration with ESA
https://www.esa.int/About_Us/Partnerships/ESA_and_Auroch_Digital_launch_Mars_Horizon_game
- check students understanding of the context through
 - comprehension questions devised during orientation
 - teacher or student led
 - pop quiz devised during orientation
 - teacher or student led
 - keywords bingo TLP007WS4
- it is essential the students understand the link between the videogame Mars Horizon, developed with assistance from ESA, the European Spacecraft Operations Centre (ESOC) and their probe – the Solar Orbiter

There are several options for this lesson pack

- Option a.** Research the Solar Orbiter
- in-depth newspaper study
 - outcome: historical/contemporary Solar Orbiter news article
- Option b.** Interview Auroch Digital (Mars Horizon videogame developers) – Teacher in Role
- in-depth interviewing
 - in-depth newspaper study
 - outcome: Mars Horizon in-game news article or Auroch Digital news article (recently NASA has successfully landed Perseverance on Mars. Researching this live mission could produce new opportunities for news articles)
- Option c.** Interview ESOC launch/control team – Teacher in Role
- in-depth interviewing
 - in-depth newspaper study
 - outcome: historical/contemporary Solar Orbiter news article or ESOC news article

NOTE: at the time of publishing several schools were given the opportunity to interview the developers at Auroch Digital and members of the launch/control teams at ESOC. The interviews are available on the *Checkpoint Kids* Magazine website. These can be used to:

- inform splash **Options a, b and c**
- generate new questions - with additional research these can form the focus of a news article
- support questioning of the Teacher in Role

https://en.wikipedia.org/wiki/Teacher_in_role

Lesson 1

Activity – in-depth newspaper study (with reference to Options a, b and c). Only teach this if the students are not familiar or confident with writing newspaper articles.

- newspaper wordbank – teach spellings and definitions

angle, article, bias, broadsheet, caption, column, compact, copy, dramatic, fact, headline, image journalism, journalist, masthead, opinion, report, sensationalism, splash, tabloid

- issue and complete worksheet TLP007WS1a: Q1 - Q4
- the hook is a brief summary of the article which appears after the headline. Sometimes referred to as the 'key sentence' it can include the following:
 - who - the subject
 - what - the content
 - where - the location
 - when - the time
 - why - the reason
- complete TLP007WS1a: Q5
- tabloid newspapers often use puns in a headline to engage the reader
- discuss the double meanings of these examples:
 - OWNER GETS A KICK OUT OF NEW DONKEY
 - THIEF CHARGED WITH STEALING BATTERIES
 - ARCHEOLOGIST'S CAREER IN RUINS
 - LACK OF PATIENTS GETS DOCTOR FIRED
 - CONSTRUCTION WORKERS RAISE THE ROOF
 - BROKEN DOWN FRUIT LORRY CREATES MASSIVE JAM
- complete TLP007WS1a: Q6
- newspapers often promote a particular viewpoint or angle
- they can be pro or anti
 - government
 - celebrities
 - monarchy etc.
- when a news article goes beyond factual accuracy in pursuit of an angle, it is said to be overly biased
- articles can contain both positive and negative bias. Explore the following example and identify how bias has been generated TLP007WS1a: Q7

An uncaring government minister has cheerfully revealed that already ridiculously low spending on the arts will not be increased this year. This is due to the ludicrously high cost of a new city gallery whose building contractor is probably owned by the minister.

- complete TLP007WS1a: Q8
<https://www.theguardian.com/newswise/2019/oct/07/lesson-9-analysing-bias-in-the-news>
 - persuasive methods can be used to create bias. Check out *Checkpoint Kids* Issue 6 and the accompanying TLP003
- a picture is worth a thousand words. Explain that we are in a world where images proliferate but they can be manipulated for effect. Always consider the following:
 - why this particular image?
 - why this particular angle, framing etc.?
 - where does it originate?
 - has it been altered – cropped, air-brushed etc.?
 - what is it trying to convey?
 - is it a truthful image?
- use TLP007WS1b to discuss image manipulation
- complete TLP007WS1a: Q9
- students could complete a self-assessment at this point

Statement	✓ or ✗	Focus
I can identify the key features of a newspaper article.		
I can identify bias.		
I can explain how to write a newspaper article.		
I can explain how bias can be generated.		
I understand this work so far.	😊 😐 😞	
I would like help with _____		

Lesson 2

Activity - in-depth interviewing (with reference to Options b and c). Only teach this if the students are not familiar or confident with interviewing techniques.

This section was used for real school student interviews with ESA and Auroch Digital. Teachers should use it as a Teacher in Role Exercise.

- research is essential before conducting an interview. Ask the students why it might be a good idea to know something about the subject of the interview
- now revisit the orientation section from the ESA, ESOC and Mars Horizon Starter below:

Option b. revisit Mars Horizon

- game trailer
<https://www.youtube.com/watch?v=EG36A4GVPTE>
- collaboration with ESA
https://www.esa.int/About_Us/Partnerships/ESA_and_Auroch_Digital_launch_Mars_Horizon_game
- research 'Auroch Digital'

Option c. revisit the Solar Orbiter

- run ESOC introductory VC 11 mins
https://dlmultimedia.esa.int/download/public/videos/2013/02/021/1302_021_AR_EN.mp4
- introduce Solar Orbiter mission
https://www.esa.int/Science_Exploration/Space_Science/Solar_Orbiter_overview
- additional resources for ESA are provided in TLPWS002
- interesting news feature about cats and operations engineers
<https://www.theatlantic.com/science/archive/2020/04/nasa-cats-spacecraft-european-space-agency/610438/>
- students should keep notes about areas of interest generated during the interview for their newspaper articles. Suggestions for news articles are at the end of Lesson 3
- it is a good idea to write down the names of participants as well as any factual details so that they can be referred to during the interview. Make sure that unfamiliar words are pronounced correctly
- ask open questions:
 - *what made you want to...*
 - *describe a great day at work*
 - *please explain how...*
 - for more on open and closed questioning
<https://www.bbc.co.uk/bitesize/guides/zghvy4j/revision/4>
- students should listen and be prepared to respond to what they are being told. Don't just ask the next question on the list
- ask how to spell unfamiliar words and names and clarify details




- politeness is essential, say thank you
- practice interviewing techniques using Teacher in Role
- journalists often have to ask difficult questions. Encourage the students to follow their own line of enquiry

- suggested Mars Horizon questions:
 - *What kind of games did you play when you were younger and what did you like about them?*
 - *How did you become game developers?*
 - *Have you always been interested in space exploration?*
 - *What inspired you to develop this game?*
 - *Do you have degrees in astrophysics or space engineering?*
 - *How much do you know about space missions and agencies?*
 - *What was it like working with ESA?*
 - *Could you have made the game without a real space agency being involved?*
 - *How long did it take to develop the game?*
 - *How many people worked on it?*
 - *How did you select the ESA staff to test the game?*
 - *What is your next project?*

- suggested Solar Orbiter questions:
 - *What is heliophysics?*
 - *What is the Solar Orbiter's mission - in simple language?*
 - *Will it be visible in the sky during its flyby in November 2021?*
 - *How do you control its movement?*
 - *Can you use voice activation?*
 - *How does it withstand the temperatures? (cave painting)*
 - *How did you train to control satellites - is there a driving test?*
 - *How do you measure the orbiter's orbit as it doesn't go through a start point after a flyby?*
 - *In 2030 the Solar Orbiter appears to hit Venus. Is this the end of the mission?*
 - *How many satellites are you responsible for?*
 - *What is the best part of your job?*
 - *What skills/attributes do you need to do your job? Try to link to intrapersonal skills:*
 - *problem solving, perseverance, resilience, determination, logical reasoning, willingness to repeat, patience, stoicism*
 - *Are you a gamer?*
 - *Did you play Mars Horizon?*

- suggested ESA/ESOC questions:
 - *Why are satellites covered in gold/silver foil?*
 - *If building a satellite began 10 years ago, do you stick to the original plan or adapt it as new materials/technologies are created?*
 - *How are they repaired if the Shuttle no longer operates?*

- Who presses the button to launch a satellite?
- What would happen to the satellites if your systems failed?
- How can you be sure that the data the satellite is sending is accurate/true?
- Do all satellites burn up on re-entry - can we not recycle parts?
- You have a lot of computer equipment - who writes the software and keeps the systems running?
- How accurate is Mars Horizon?
- Does it help being a gamer if you want to work at ESA?

Statement	✓ or ✗	Focus
I can identify key information from research.		
I can generate appropriate questions from research.		
I can formulate open questions.		
I know how to conduct an interview		
I understand this work so far.	  	
I would like help with _____		

Lesson 3

Activity - creating a news article

- use TLP007WS3
- if students have not generated an idea for the subject and content of their article during the interview, or research, they should select one now. Suggestions include:
 - Solar Orbiter
 - historical milestones
 - the launch
 - the first images of the Sun
 - its current position
 - ESA/ESOC
 - simulation exercise – video clips
 - newsworthy focus from interview

- Mars Horizon
 - newsworthy focus from interview
 - newsworthy focus from gameplay
 - news story from gameplay:



- begin by writing an appropriate working headline for the article. This should be a simple statement of fact
 - New Satellite Launched into Space
- this can be revised later on
- next write the hook. This should be brief and include the 5 Ws:
 - who - *the Checkpoint Space Agency*
 - what - *launched its latest satellite*
 - where - *from the Space Centre in Aberllefenni*
 - when - *last Wednesday*
 - why - *in a bid to survey mining opportunities within our solar system*

Last Wednesday, the Checkpoint Space Agency launched its latest satellite from the Space Centre in Aberllefenni in a bid to survey mining opportunities within our solar system.

- detail can be provided in the main copy which should contain three to four paragraphs

The Gasparis Satellite, named after the astronomer who discovered the metal asteroid Psyche in 1852, carries the latest in digital scanning equipment and has taken over ten years to develop. Once in orbit around its target planet B 612, its long-range scanners can locate valuable mineral deposits hundreds of metres below the surface.

Maret Nishafaa, Head of Research and Development at the Checkpoint Space Agency, argues that without the readily available resources other planets can supply it will be impossible to build the structures necessary to support research teams on other planets. "Put simply, Earth cannot supply all the resources we need, and even if it could, it is too expensive to transport raw materials to other planets," he said.




"It doesn't have to be a planet. Asteroids contain gold and silver as well as the minerals we need for building," he added.

- during drafting language and content could be adapted to create a particular angle or bias
- once the entire article has been drafted, the headline can be rewritten
 - Checkpoint Space Agency lead the way in mining satellite technology
- or adapted to the style of a tabloid
 - FORGET THE KLONDIKE "THERE'S GOLD IN THEM THAR ASTEROIDS!"
- once the article is complete it can be copied onto a front page TLP007WS3. A masthead, date and image can be added. An example is provided TLP007WS3a
- students complete the final assessment

Extension activities

- the lesson can be adapted to any subject area. Appropriate resource material should be provided
- you could adapt this for radio or tv interviews. The techniques are similar across all media and the skills can be adapted to any situation

Final self-assessment for TLP007

Creating a News Article			
Name:		Date:	
		Class:	
Statement		✓ or ✗	Focus
I have a reasonable understanding of different types of newspaper.			
I can identify some differences between broadsheet/compact and tabloid newspapers.			
I use research to inform my work.			
I can recognise bias.			
I can write an unbiased/biased newspaper article which follows the conventions.			
I am happy with what I have achieved in these lessons.		  	
One aspect of this work I have enjoyed is _____ _____ _____ _____			
In future I would like help with _____ _____ _____ _____ _____			

Wordbank

alien, astronaut, atmosphere, control, crew, determination, endeavour, endurance, flight, fortitude, galaxy, gravity, international, mission, navigate, observatory, orbit, ozone, payload, perseverance, planet, research, rocket, rotation, satellite

Lesson 1

Activity 1

Statement	✓ or ✗	Focus
I can identify the key features of a newspaper article.		
I can identify bias.		
I can explain how to write a newspaper article.		
I can explain how bias can be generated.		
I understand this work so far.	😊 😐 😞	
I would like help with _____ _____ _____ _____		

Lesson 2

Activity 1

Statement	✓ or ✗	Focus
I can identify key information from research.		
I can generate appropriate questions from research.		
I can formulate open questions.		
I know how to conduct an interview		
I understand this work so far.	😊 😐 😞	
I would like help with _____ _____ _____ _____		