AUSTRALIAN CURRICULUM: GERMAN CLIL UNIT PLANNER

SEQUENCE: F-10
YEAR LEVEL/BAND: 9-10
UNIT: JUNIOR UNIVERSITÄT
LECTURE: RAKETENTRIEBWERK

GOETHE INSTITUT
Sprache. Kultur. Deutschland.

This Unit Planner developed by, and kindly shared by former AFMLTA President, Kylie Farmer, has been adopted by the Goethe-Institut in Australia.

Please note
These resources are designed to be implemented optimally with a focus on the content knowledge as well as language. CLIL is flexible; however, to enable the learning of new content and/or skills through the target language some code switching between the students' first language and the target language might be required. Assessment may be in the form of observation, conversation or a product.
Focus Questions: How are rockets propelled? How does the main engine, the components and the structure of the Ariane-5 Rocket work? What are the properties of the elements hydrogen and oxygen?
Concepts: the advantages and disadvantages of space travel, who owns space

Communication

Communicating - Socialising
(ACLGEC172) shared activities - persuading, arguing, planning, negotiating
Communicating- Informing
(ACLGEC175) convey ideas, information and views - presenting, representing, reporting
Communicating- Translating
(ACLGEC179) create bilingual texts aspects of language and culture
Understanding- Systems of Language
(ACLGEU183) vocab and grammatical structures- future, imperative, relative pronouns

Cognition

Communicating - Reflecting
(ACLGEC180) make choices- assumptions, questions, modifying behaviour, responsibility
Understanding - Systems of Language
(ACLGEU184) describe the interrelationship between text types, structuring, language choice
Understanding - Language Variation and Change
(ACLGEU186) influence of language on actions, values, beliefs, linguistic diversity

Culture

Communicating - Reflecting
(ACLGEC181) own identity, exploring, explaining, cultural mediator
Communicating- Informing
(ACLGEC174) context and culture affect information - perspectives, researching, synthesising, evaluating, representing
Understanding - Role of Language and Culture
(ACLGEU187) language and culture interrelated

Content

Learning Areas

- **Science:** How does a rocket fly? E.g. trajectory of a rocket, hydrogen and oxygen and properties (ACSSU179)
- **History:** What can you find out about the history of space travel and the Ariane 5? https://www.arianespace.com/missions/ (ACHHS168)
- **Civics and Citizenship:** What intergalactic rules and regulations would we need to instigate? (ACHCS085)
- **Business and Economics:** Who owns space? (ACHEK039)
- **Health:** What are the health risks of long-duration space flight? (ACPPS098)

General Capabilities

- **Critical and Creative Thinking:** How can you design your own rocket with considerations to aerodynamics?
- **Personal and Social Capability:** Would you want to go into outer space or live on Mars?
- **Ethical Understanding:** What are the ethics of space travel - cost/ benefit?

Cross-Curriculum Priorities

- **Aboriginal and Torres Strait Islander Histories and Cultures:** What lessons can we learn from previous invasions on a potentially already inhabited land/ planet? (OI.6)
- **Sustainability:** What advantages and disadvantages does space travel have on the environment? E.g. space junk and pollution in space, terraforming (changing Mars to make it habitable), should we or shouldn't we preserve pristine space environments? (OI.7)

Aspects of the 9-10 Band Achievement Standard being addressed through this Lecture: Suggested aspects of the Achievement Standard for the proposed Assessment Tasks are noted numerically on the following page next to each task. A full listing of all aspects of the Achievement Standard is to be found on the final page, noting that the numbering system is not from ACARA, but rather developed for the purpose of presenting this series of Unit Planners.

Implementation

Student Tasks

Facilitating Communication - of, for, through learning

- Understand what is being said in German on the video.
- Understand and follow directions for an experiment.
- Answer questions about an experiment.
- Match short and long texts and pictures.
- Match questions and answers.
- Fill in blanks.
- Work in small groups to carry out an experiment.
- Describe an experiment and formulate a technical justification.
- Label a schematic representation.
- Follow the directions to build a rocket and justify how it works.

Analysing Key Content

Understand the applied content of a technical video:

- That hydrogen and oxygen combined can power a rocket.
- Understand and describe how the main engine, the components and the structure of the Ariane-5 Rocket work.
- Describe the process of a schematic representation.

Opportunities for Cognition

- Understand how rockets are made.
- Understand the elements hydrogen and oxygen and their properties.
- Understand systems of language e.g. grammatical aspects: perfect tense, passive tense, conjunctions of time, reflexive verbs, dative case
- Understand the text type of a construction manual.
- Find mistakes in content in a written text.
- Reflect on their learning.

Connecting with Culture

- Understand elements of culture relating to the lecture.
- History of space flight in Europe
- the Ariane 5

Language Assessment Tasks

Formative: Zuhören/Schreiben A1/A2: AB 4.1 Das Experiment A2/B1: AB 4.1 Wie eine Rakete- das Experiment	6, 7, 8, 11 4, 10
Formative: Lesen/ Zuordnen/Schreiben A1/A2: AB 4.2 Wie funktioniert ein Raketentriebwerk? A2/B1: Wie funktioniert ein Raketentriebwerk?	4, 10, 12 6, 8, 4, 12
Formative: Lesen/ Basteln/ Schreiben A1/A2: Das geht ab wie eine Rakete A2/B1: Versuch: Die Knallgas-Rakete	1, 2, 16 1, 2, 6, 7, 16
Summative: Schreiben/Sprechen • Vorbereite ein Gespräch und debattiere in zwei Gruppen die Fragen: ○ Wem gehört der Weltraum? ○ Was sind die Vor- und Nachteile der Raumfahrt?	1, 3, 4, 5, 7, 9, 10
Inquiry Based: Students select an area of interest around the concept of *Raketentriebwerk* (see Content Focus above for further ideas) and present their findings to the class, year level, school community or wider audience. Hands-on tasks: Das Projekt der Raumforscher: (ACSIS170) http://www.grundschule-moorriem.de/images/pdf/die_raumforscher_der_e1.pdf NASA Jet Propulsion Laboratory: (ACSIS170) https://www.jpl.nasa.gov/edu/learn/	1, 3, 4, 5, 6, 7, 10, 12, 15, 16, 17

Materials and Resources

Materials:

A1 / A2: materials for the experiments

- effervescent tablets
- an empty tablet tube
- lots of colorful lids
- a plastic can with a tightly fitting lid (film can)
- a tall drinking glass
- a dry 0.5 l PET bottle
- a suitable cork (possibly cut to the right size
- a small measuring cup
- a launch pad (a vessel that gives the bottle the direction of fire, e.g. beverage crates, well-standing vase, jug, etc.)

A2 / B1: materials for the experiment

- a 1L PET bottle
- a suitable rubber stopper
- a launch pad with a holder for the bottle
- a bridge igniter
- a power supply unit with two alligator clips
- a piece of connecting cable
- modelling clay
- hydrogen from the steel bottle F +
- oxygen from the steel bottle, O
- water

Resources:

- Students logged in to the *Junioruni* website to access the exercises or print a copy of the exercises to complete before/during and after watching the video as a class.
- Access to digital or hardcopy dictionaries is ideal for some activities

Additional Teacher Resources:

Handbook, attachments and video script are available for pdf download from the teacher's version of the website.

Lecture: ***Raketentriebwerk Observational Assessment***	**Achievement Standard**	**How I see myself:**			**How my teacher sees me:**		
		I know this in German.	I know this in English.	I still need to work on this.	You know this in German.	You know this in English.	You still need to work on this.
I can … • engage and sustain interactions with peers in class, group and paired activities.	**1, 2, 5**						
• understand what is being said in German on the video.	**6, 7, 8, 11**						
• match short and long texts, questions and answers and pictures, including labelling a diagram and filling in blanks.	**4, 10, 12**						
• understand and follow directions to build a rocket and justify how it works.	**1, 2, 16**						
• understand the content of a technical video e.g. how rockets are made, the elements of hydrogen and oxygen and their properties.	**6**						
• understand systems of language e.g. grammatical aspects: perfect tense, passive tense, conjunctions of time, reflexive verbs, dative case	**4, 11, 15**						
• understand the text type of a construction manual (procedure).	**16**						
• understand elements of culture relating to the lecture.	**13, 14, 17, 18**						
• undertake an extended written/spoken task on the topic of Raketentreiberk und Raumfahrt.	**1, 3, 4, 5, 7, 9, 10, 12**						
• understand the applied content of a technical video	Science: (ACSSU179), (ACSIS174)						

Overall Assessment

Well Above Standard **A**	**Above Standard** **B**	**At Standard** **C**	**Below Standard** **D**	**Well Below Standard** **E**
The student can complete all of the challenges above in German with minimal English to help explain content, displaying excellent cognitive, communicative and creative skills.	The student can complete all of the challenges above in German with some English to help explain content, displaying above average cognitive, communicative and creative skills.	The student can complete most of the challenges above in English with some German words and phrases, displaying sound cognitive, communicative and creative skills.	The student can complete some of the challenges above in English with some German words and phrases, displaying sound cognitive, communicative and creative skills.	The student can complete little or none of the challenges above in English, displaying limited cognitive, communicative and creative skills.

Australian Curriculum: German 9-10 Band Achievement Standard (F-10 Sequence)

1. Students use written and spoken German to initiate and sustain interactions with teachers, peers and others in a range of settings and for a range of purposes.
2. Students use language spontaneously in the classroom environment to seek clarification and advice, assist others, initiate conversations and discussions, debate a course of action, share learning strategies and comment on the contribution of others.
3. Students describe plans and aspirations using future tense.
4. Students state facts and relate experiences, using past tense forms and regular and irregular verbs.
5. When speaking, students use appropriate pronunciation, intonation and stress in a range of sentence types, including variations such as contractions.
6. Students locate, synthesise and evaluate information on local and global issues from a range of perspectives and sources.
7. Students present ideas, information and views in a range of texts selected to suit the audience, purpose and context.
8. Students analyse the main ideas and themes in imaginative texts and use evidence to support their views.
9. Students plan, draft and present imaginative texts using literary devices (imagery, similes, onomatopoeia) to engage a range of audiences.
10. When creating informative, persuasive and imaginative texts, students use a variety of conjunctions, relative clauses and other cohesive devices to build cohesion.
11. Students specify and describe people, places and objects by applying knowledge of the case system to articles, common demonstratives and possessives followed by adjectives.
12. Students interpret and/or translate excerpts from German texts, identifying and explaining culture-specific aspects, and create texts that reflect and explain aspects of culture and language for different German-speaking and Australian audiences.
13. Students identify and challenge their own assumptions and take responsibility for modifying language and behaviours in relation to different cultural perspectives.
14. Students identify ways that language influences people's actions, values and beliefs, and appreciate the scale and importance of linguistic diversity.
15. Students explain the roles of different German cases (nominative, accusative, dative and genitive) and tenses, and variations in spoken and written German in relation to pronunciation, spelling and punctuation.
16. Students explain the relationship between text type, audience and purpose.
17. Students identify the role culture plays in the creation and interpretation of texts, and explain how language and text features (layout, structure and formal/informal register) are used differently in a range of texts.
18. Students explain ways in which language and culture are interrelated and influence each other.