Life on other planets

Topic

Space exploration to find habitable planets

Learning outcomes

- Identify the main purpose and key points of a factual text about space exploration.
- Develop vocabulary on the topic of astronomy and space exploration
- Practise communication and discussion skills

Age group and level

Aged 13-17 CEFR A2/ B1

Time

110 minutes + extension activity. This could be done over 2 lessons (1 reading focussed; the other speaking focussed)

Materials

Presentation

Reading worksheet – 1 each (There is an A2 version and a B1 version for mixed ability groups)

Optional

Discussion language worksheet

Introduction

This lesson looks at recent developments in the search for habitable planets and opens up the topic of the possibility of life on other planets. Learners predict the content of a text before reading; then check comprehension. This leads onto discussions around the topic of space exploration. Learner training of error correction is a part of this plan.

Procedure

1. Lead-in (10 mins)	• Ask learners to work in pairs to make a list of names of the planets in our solar system. Set a time limit of 3 minutes. • Elicit the names and tell learners that they need to put them in the correct order that they appear in the solar system. Explain that there is a memory aid called a mnemonic they can use to do this. • Write the following on the board and underline the first letter of each word: My Very Excellent Mother Just Sent Us Nine Pizzas. Explain that the first letters of each word represent the first letters of the planets. Still in their pairs learners write the planets in order. Allow a few minutes before checking answers. **Note:** Some learners may query the inclusion of Pluto which is now considered a dwarf planet.
2. Vocabulary and prediction (15 minutes)	• Put learners into small groups. Either display **slide 2** or give out the worksheet • Tell the students that all these words are from a text that they are going to read later. Elicit or gloss the meaning of Kepler (it's the name of a telescope and space mission as well as a person) • Put learners into pairs and ask them to use the words to predict what the text will be about • Write on the board: 'I think the text is about…' • Ask pairs to complete the sentence • Allow time for pairs to share their ideas. If possible they should come up and write their sentence on the board. **Note:** If you have a large class nominate 3 or 4 groups to feedback. Then ask other groups if there's anything they'd like to add to make it a whole class discussion.
3. Reading (10 minutes)	• Give out the reading text and ask learners to check their predictions. Bring class together to discuss which pair's prediction was the best.

	• Ask learners if they found anything in the article interesting or surprising.
4. Comprehension (20 minutes)	• Ask learners to complete Task 2. You could display this on **slide 3** • They should check with a partner before you ask for whole class feedback. **Answers** 1d; 2a; 3f; 4b; 5c • Either show slide 4 or write the following numbers on the board.: 1) 600, 000,000 2) 2018 3) 5 4) 2009 • Ask learners to find the numbers in the text and tell their partner what they mean • Nominate a few pairs to tell you the answers. Encourage and support learners to explain this to you in their own words. **Answers** 1) The amount of money the mission cost 2) The date the mission finished 3) The number of years the mission was extended for 4) The date the mission started **Note**: This could be the end of lesson 1
5. Discussion language (15 minutes) OPTIONAL	• Give out the worksheet and ask learners to read the dialogue. • They discuss in pairs whether they agree with A or B. Allow for alternative opinions. • Tell learners that they will be taking part in a discussion and should try to use the language on the worksheet.
6. Discussion (20 minutes)	• Put learners into groups. Display slide 5 or write the discussion questions on the board: — What other things do you know about space exploration? — Is it a good idea to spend $600 million on space exploration? — Why does NASA want to find habitable planets? Allow 10 minutes before asking for feedback

7. Critical thinking and discussion (25 minutes)	Tell learners to imagine that Kepler version 2 is currently exploring our universe and 2 months ago they discovered a habitable planet. NASA has decided to send some objects from Earth to the new planet. Elicit why they would do that. **Answer**: There might be other life forms on the planet and these objects could help explain who we are. Either display **slide 6** or write the list of NASA's ideas on the board: — an encyclopaedia — a computer — photographs of world leaders — a bottle of sea water Ask learners what they think of these ideas. Do they represent the Earth and human life? **Commentary:** an encyclopaedia – Any photographs or illustrations might be useful but it's unlikely other life forms would understand out written language a computer – There will be issues with this running out of power photographs of world leaders – how will the aliens understand that these are leaders? a bottle of sea water – It may be interesting, but if they have a similar planet they may have sea water too. • Ask learners in their groups to agree on 5 items that can be added to the NASA list • Monitor and write down any common language errors and examples of good discussion language • Nominate a few groups to share their ideas and put them on the board. Check if the other groups want to share any other ideas. • You can ask learners to 'vote off' on idea and replace it with a new idea. Ask learners to persuade you that their idea is better.

	Note: If you need to change the classroom dynamics then create new discussion groups. If the groups worked well in the first task they can remain in those groups.
8. Error correction (10 minutes)	• Write 5 sentences you wrote down from the discussion on the board. At least one should be a good example of language use (this can boost learner's confidence). • Ask groups to decide which sentence/s are correct and suggest ways to improve the incorrect sentences. • Elicit answers from groups and edit the incorrect sentences • Give general feedback on learners' discussion language. Did the only use English? Did they use a range of language? Were they fluent? Or accurate?
9. References	• https://science.nasa.gov/mission/kepler/

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