

Moon colony

Time	45-60 minutes
Interaction	groups of 3-4
Level	B1 (Intermediate) to C1 (Advanced)

Language areas practised

Sub-skills and Functions

- speculating on possible challenges
- suggesting solutions

Grammar and Lexis

- future forms (will / going to)
- science and technology vocabulary

Preparation

Photocopy 'The back story' and worksheet 'The challenge' (1 of each per group). If you have access to the Internet, you may also want to read and print copies of the 2 website articles referenced on the worksheet for learners to use as resources during the lesson. If you want the learners to do group presentations, you may also want to hand out larger pieces of paper and marker pens for them to draw their plans of the living space. Alternatively, you could increase size of the plans by blowing them up on a photocopier.

Procedure

1. At lower levels pre-teach the following vocabulary: mission; spacecraft; raw materials; fuel; oxygen; reserves; colony; settlement; sustainable; (in) orbit; pod; recycling; gravity.
2. Introduce the lesson topic by writing the article headline on the board. Tell the learners this is a recent news article and a true story (i.e. not science-fiction). Find out what the learners would like to know about the story and write possible questions for an initial comprehension task on the board.
3. Hand out the article for reading and use the comprehension questions to check understanding.
4. Hand out 'The challenge' worksheet, reading through the instructions with them, eliciting and answering any questions they may have. Set a time limit (15-30 mins) and recommend that each group nominates a secretary to take notes on their decisions and ideas.
5. Depending on time you may want groups to present their decisions to the whole class. Alternatively, you can reorganise the groups so that learners from different groups tell each other what they decided and why.
6. **Optional homework/extension activity:** Learners read one of the two articles referenced on the worksheet, and then tell each other about what they read next lesson.

Moon colony - The back story

Europe and Russia planning colony on moon

A mission called Luna 27 is due to be sent to the moon in the near future in order to decide if a future moon colony will be possible and useful. The spacecraft will be looking for water and the necessary raw materials to make fuel and oxygen. It will be a combined European and Russian mission led by the Russian Federal space agency Roscosmos.

But why?

Given the cost, the dangers and the scientific challenges, many are asking why we are interested in returning to the moon when the Americans were already there over 40 years ago. Three reasons are often provided:

1. A permanent colony can lead to much more detailed exploration, and may discover reserves of valuable minerals or useful chemicals.
2. Such a settlement could prepare for a more ambitious trip and settlement on the planet Mars.

3. As the colony develops, it may be able to process raw minerals and even manufacture satellites and telescopes that could be sent into orbit for much lower costs than ones made on the Earth.



Moon colony – The challenge

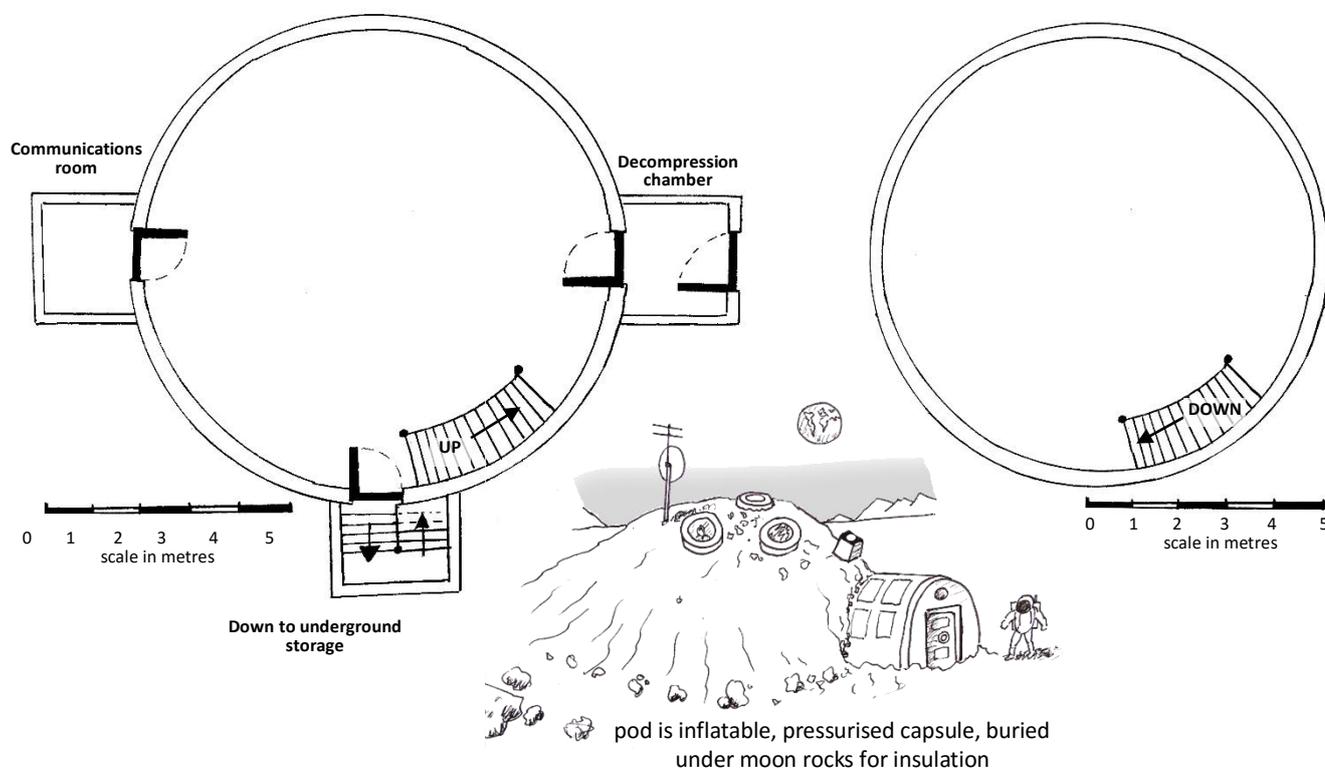
You have been employed by Roscosmos to prepare for the moon settlement. The first mission will include **5 astronaut-scientists** and is due to spend **1 year** there. The astronauts will have to live in a small underground pod with only a few rooms (see plans below). It is your job to ensure that living there will be as easy and as productive as possible. Discuss and make notes on the following:



<p>Who should be on the team? Describe the profiles of the 5 individuals, including age, sex, occupation and role on the mission.</p>	<p>How will the living space be organised? Use the plan provided to organise the space effectively by drawing walls, labelling rooms and indicating furniture.</p>	<p>How can the colony become as sustainable as possible? A limited number of future spacecraft will bring food and other supplies during the year. However, one of the aims of the team is to ensure that they can live as sustainably as possible. Think about possible ways that the following things can be made more sustainable:</p> <ul style="list-style-type: none"> • water - available in small quantities, but recycling will also be necessary; • food – temperatures are low but sunlight is high - they will need to try growing fruit and vegetables; • energy – how can this be saved or generated?
<p>What will they do? As well as describing what they will do during the day, you need to think about how they will spend their time in the evening, how they will exercise in the low gravity conditions and how, if at all, they should get time alone.</p>	<p>How can we guarantee that they will get on with each other? Obviously there will be significant psychological challenges for 5 people living together in a small space, underground for one year. Think carefully about the personalities required, and also how conflicts and disagreements will be resolved.</p>	

Bottom Floor (no windows)

Top Floor (3 small windows in ceiling)



Homework / Extension task: Check out these websites if you want to know more:

<http://www.bbc.co.uk/news/science-environment-34504067> <http://www.bbc.com/future/story/20150712-should-we-build-a-village-on-the-moon>