

Life in the Solar System 1: Conditions for life

Components

NAME	DESCRIPTION	AUDIENCE
	<i>Conditions for life</i> teacher guide	The guide provides information on how to use the PowerPoint presentation in this resource.
	<i>Conditions for life</i> presentation	This presentation is used to engage students' interest in conditions that support life on Earth.

Purpose

To **Engage** students' interest and encourage inquiry about environments that support life.

Outcomes

Students:

- compare features and differences in a number of environments, and
- describe factors that affect the diversity of life within a particular environment.

Activity summary

ACTIVITY	POSSIBLE STRATEGY
A teacher-led activity uses the presentation, <i>Conditions for Life</i> , to engage students. It compares images of different environments on Earth in order to raise questions about requirements for life as we know it.	teacher-led presentation
Discussion	teacher-led, whole group

Technical requirements

The presentation is provided in Microsoft PowerPoint and Adobe PDF formats. The guide requires Adobe Reader which is a free download from www.adobe.com.

Teachers display the presentation and, while moving from image to image, challenge students with a number of discussion questions. These capture students' understanding of factors contributing to the existence of life on Earth.

Using the presentation

The presentation, *Conditions for life*, contains images of environments including: Antarctica, cave, coast, city, desert, mountain, rainforest, woodland and volcanic pool. It also includes a single image of the surface of Mars.

While displaying the images suitable discussion questions include:

- What name is commonly used to describe this environment?
- What forms of life might be found in this environment?
- What environmental factors affect the abundance of life in this environment?
- What common features exist in all images, and how do they characterise life on Earth?

The image of Mars is **not** labelled. This brings out our predisposition to Earth-like habitats (in this case, students may identify it as a desert environment). Further exploration of this image will occur in *Life in the Solar System 2: Exploring environments*.

List of images

- Lemaire Channel, Antarctica (photo by Frank Wheatley)
- Jenolan Caves, New South Wales (photo by Paul Ricketts)
- Namib Desert (photo by Tjeerd Wiersma, CC-BY-2.0, commons.wikimedia.org/wiki/Image:Namibian_Desert.jpg)
- Forest, New South Wales (photo by Paul Ricketts)
- Perth city skyline at night (photo by Paul Ricketts)
- Rottnest Island coastline (photo by Paul Ricketts)
- Karri forest, Margaret River, Western Australia (photo by Paul Ricketts)
- The Eastern Hills, Mars, photographed by Mars Rover Spirit (NASA/JPL, photojournal.jpl.nasa.gov/catalog/pia05593)
- Blue Mountains, New South Wales (photo by Paul Ricketts)
- A volcanic pool in Yellowstone National Park (photo by James Taylor, used under licence from Stock.xchng, www.sxc.hu/photo/800999)

Associated SPICE resources

Life in the Solar System 1: Conditions of life may be used in conjunction with related SPICE resources.

DESCRIPTION	LEARNING PURPOSE
<i>Life in the Solar System</i> This learning pathway combines a number of SPICE resources to address the topic of the search for life in the Solar System.	
<i>Life in the Solar System 1: Conditions for life</i> A presentation challenges students to think about where life is found.	Engage
<i>Life in the Solar System 2: Exploring environments</i> Students explore different environments to compare surface conditions and abundance of life.	Explore
<i>Life in the Solar System 3: Planetary atmospheres</i> Students compare atmospheric conditions on various bodies in the Solar System.	Explain
<i>Life in the Solar System 4: Life under extreme conditions</i> Life exists in extreme environments on Earth, which suggests that it may also be found in unknown environments in space.	Elaborate

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