



## 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.	teachers
	<i>Conditions for life</i> presentation	This presentation is used to engage students' interest in conditions that support life on Earth.	students

### 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](http://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:

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*.

- 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?

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

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