**teacher guide**

**Life in the Solar System 3:**

**Planetary atmospheres**

# Components

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| --- | --- | --- | --- |
|  | NAME | DESCRIPTION | AUDIENCE |
|  | *Planetary atmospheres*teacher guide | The guide provides information on how to use the learning object in this resource. | teachers |
|  | *Atmospheric explorer*learning object | Students interact with the learning object to compare the atmospheric conditions of selected astronomical bodies. | students |
|  | *Planetary atmospheres*worksheet | This detailed worksheet leads students through an activity. | students |

Purpose

To **Explain** the similarities and differences in atmospheric composition of a selected number of bodies in the Solar System.

# Activity summary

Outcomes

Students will be able to:

* describe the similarities and differences in the surface conditions of a number of bodies in the Solar System;
* explain that planetary atmospheres change over time; and
* explain the significance of the change in Earth’s atmosphere over time, and the possibility that life may exist on other planets.



|  |  |
| --- | --- |
| ACTIVITY | POSSIBLE STRATEGY |
| Students use the learning object, *Atmospheric explorer,* to compare atmospheric characteristics of Mercury, Venus, Earth, Mars, Io and Titan while responding to questions posed in the worksheet. | individually or in pairs |
| Discuss with students the worksheet, additional questions and points from this guide. | teacher-led whole group |

# Technical requirements

The learning object requires Adobe Flash Player version 8 or later (this is a free download from [www.](http://www/) adobe.com). It can be placed on a web or file-server and run either locally or remotely in a web browser.

The guide and worksheets require Adobe Reader which is a free download from [www.adobe.com.](http://www.adobe.com/) The worksheets are also provided in Microsoft Word format.



# Associated SPICE resources

*Life in the Solar System 3: Planetary atmospheres* may be used in conjunction with related SPICE resources.

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| --- | --- |
| DESCRIPTION | LEARNING PURPOSE |
| *Life in the Solar System*This learning pathway combines a number of SPICE resources to address the topic of the search for life in the Solar System. |  |
| *Life in the Solar System 1: Conditions for life*A presentation challenges students to think about where life is found. | Engage |
| *Life in the Solar System 2: Exploring environments*Students explore different environments to compare surface conditions and abundance of life. | Explore |
| *Life in the Solar System 3: Planetary atmospheres*Students compare atmospheric conditions on various bodies in the Solar System. | Explain |
| *Life in the Solar System 4: Life under extreme conditions*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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