**teacher guide**

**Bushfire science 1:**

**Fiery failures**

# Components

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|  | NAME | DESCRIPTION | AUDIENCE |
|  | *Fiery failures*  teacher guide | This guide explains how to introduce students to historical relationships between humans and fire. They question ways humans have sought to manage these situations. | teachers |
|  | *Horrible environmental histories*  video | A video shows four examples of environmental damage resulting from incautious or ill-informed human activity involving combustion: Greenland deforestation; acid rain in Europe; noxious products of lignite combustion in the former USSR; and fire suppression policies in 20th century USA. | students |

Purpose

To **Engage** students in learning about relationships between fire, human activity and environment.

# Activity summary

Outcomes

Students:

* understand combustion products affect the environment;
* understand many environmental disasters are the result of human actions;
* describe causes of past environmental disasters that are related to human actions; and
* discuss possible solutions to human-generated environmental problems.

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| ACTIVITY | POSSIBLE STRATEGY |
| Students watch the video, *Horrible environmental histories*. | whole class |
| Class discussion or small group activities about issues presented in the video. | whole class/small groups/individual |

# Teacher notes

Class discussion following the video may include the following questions:

* What issues surrounding the human use of fire were raised?
* Does the use of fire always have a negative impact on the environment?
* What measures could be taken to reduce or repair harmful environmental effects from fire?
* Do you know of other examples of harmful effects from human use of fire?

Alternatively students may work in groups or individually to produce a PMI chart. They create a table of Positives, Minuses and Interesting things they find out about human use of fire.

# Technical requirements

The teachers guide requires Adobe Reader (version 5 or later), which is a free download from www.adobe. com. A modern browser (eg Internet Explorer 8 or later, Google Chrome, Safari 4.0+, Opera or Firefox) is required to view the video

# Acknowledgements

Thanks to video presenter, Jeremy Rogers.

Designed and developed by the Centre for Learning Technology, The University of Western Australia.

Production team: Jan Dook, Alwyn Evans, Bob Fitzpatrick, Sally Harban, Dan Hutton, Paul Ricketts, Gemma Slater, Kate Vyvyan and Michael Wheatley, with thanks to Beate Ferbert-Booth, Jenny Gull and Wendy Sanderson.

banner image: ‘forest fire’ by Cameron Standberg.

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# Associated SPICE resources

*Bushfire science 1: Fiery failures* may be used in conjunction with related SPICE resources to teach aspects of biodiversity and oxidation.

# SPICE resources and copyright

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| DESCRIPTION | LEARNING PURPOSE |
| *Bushfires (overview)* |  |
| *Bushfires 1: Fiery failures*  A lighthearted look at four environmental catastrophes through history brings out common connections with fire and combustion. | **Engage** |
| *Bushfires 2: Exploring ecosystems*  Students use sampling techniques to investigate a local ecosystem, and an interactive learning object to explore biodiversity in contrasting Western Australian ecosystems. | **Explore** |
| *Bushfires 3: Oxidation*  Students investigate combustion and other oxidation reactions. | **Explore** |
| *Bushfires 4: Fire in Western Australia*  Students use an interactive learning object to examine effects of fire on three Western Australian ecosystems. | **Explain** |
| *Bushfires 5: Oxidation and combustion*  Students use an interactive learning object to visualise oxidation reactions at a molecular level. | **Explain** |
| *Bushfires 6: Fire stories*  Students read three interactive stories about human use of fire and its consequences in different parts of Western Australia. | **Elaborate** |