

The risks to Australia of a 3°C warmer world



www.science.org.au/curious/video/risks-australia-3degrees-c-warmer-world

Circles of Action: A routine for organising one's understanding of a topic through concept mapping
What can I do to take responsible action in response to this issue?

1

In my inner circle

of friends, family, the people I know?



2

In my community

my school, my neighbourhood?



3

In the world

beyond my immediate environment?



Last revised: August 2022



Teacher explainer

Connecting to real world science

Video and thinking tool

Audience: Years 7-10

Why this resource?



The risks to Australia of a 3 degrees Celsius warmer world is a resource intended to support student discussions about climate change. It provides students opportunities to consider how science and scientific thinking impact our everyday lives.

It encourages students to:

- Be curious
- Collaborate
- Develop and use critical thinking skills
- Practise communication skills
- Develop science agency

Science agency is the capacity to critically use science and other forms of expertise to personal and social benefit [OECD \(2020\)](#)

Links to Australian Curriculum: Science (Version 8.4) Science Understanding (ACSSU176 Biological sciences), Science as a Human Endeavour (ACSHE157/191, ACSHE158/192 Nature and development of science, ACCSHE160/194, ACSHE228/230 Use and influence of science)

Australian Academy of Science videos

The video *The risks to Australia of a 3 degrees Celsius warmer world* is produced by the Australian Academy of Science as part of a collection of [videos and topic summaries](#) relating to current science issues. More videos, articles and reports relating to climate change can be found at the Australian Academy of Science [Climate Change hub](#).

Why use thinking routines?

To facilitate student discussion, this resource uses a specific thinking routine. A thinking routine is a set of questions or steps used to scaffold and support students to organise their ideas, reason carefully, and reflect on their thinking. The routines can be used in a range of contexts. If you are new to thinking routines or would like to explore further, check out Project Zero's [Thinking Routine Toolbox](#).



Why this thinking routine?

Circles of Action*

When students learn about the world and want to make a difference, they can feel overwhelmed. A mismatch between calls for global citizenship and students' perceived capacity to act can reduce motivation to engage. This thinking routine helps students recognise that actions can have different scope (small and large) and can occur in multiple spheres, at personal, local and global levels. It supports students to consider the potential courses of action and their consequences

How might you use this resource?

The risks to Australia of a 3 degrees Celsius warmer world can be used by students individually or in groups. Recording group responses can be collated and used to stimulate deeper discussion or re-visited later.

Having discussed the content and engaged with the routine, you may invite students to consider how science and scientific thinking help us better understand the causes and impacts of climate change and they can be used to respond to the challenges of reducing greenhouse gas emissions.

Your context, your judgement

We suggest you watch the video in advance and consider your students' experience so that you can anticipate questions or concerns they may have.

***The Circles of Action thinking routine was developed by Project Zero, a research centre at the Harvard Graduate School of Education.**

Science by Doing is supported by the Australian Government Department of Education, Skills and Employment. The views expressed here are those of the author and do not necessarily represent the views of the Australian Government Department of Education, Skills and Employment. © Australian Academy of Science, 2022.