

WA-OIGC



# MASS EXTINCTIONS

WA Organic and Isotope Geochemistry Centre  
Teaching Resources

<https://wa-oigc.curtin.edu.au/>



Curtin University

THE INSTITUTE FOR  
GEOSCIENCE RESEARCH (TIGeR)

# MASS EXTINCTIONS



## About the Big Five

There have been five major events in past 600 million years.

- Ordovician-Silurian Extinction
  - 440 million years ago
- Late Devonian Extinction
  - 365 million years ago
- Permian-Triassic Extinction
  - 252 million years ago
- Triassic-Jurassic Extinction
  - 201 million years ago
- Cretaceous-Paleogene Extinction
  - 66 million years ago

There is a natural background rate to the timing & frequency of extinctions.

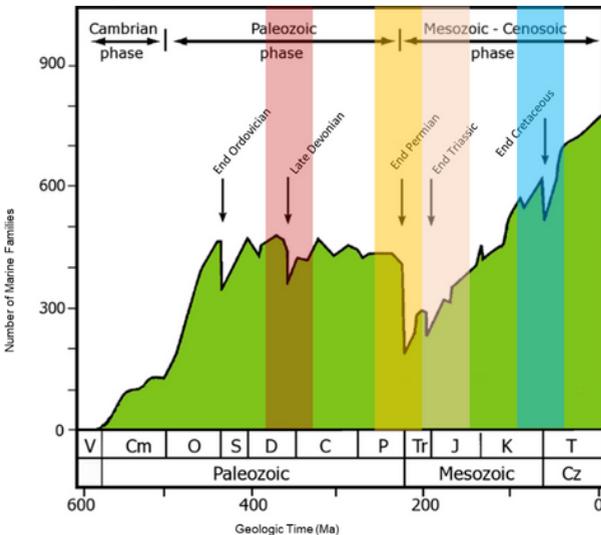
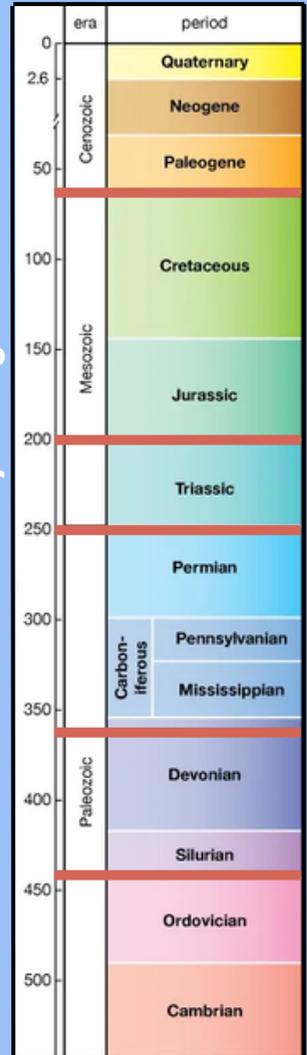


Image adapted from Raup, D.M., Sepkoski Jr., J.J. 1982.

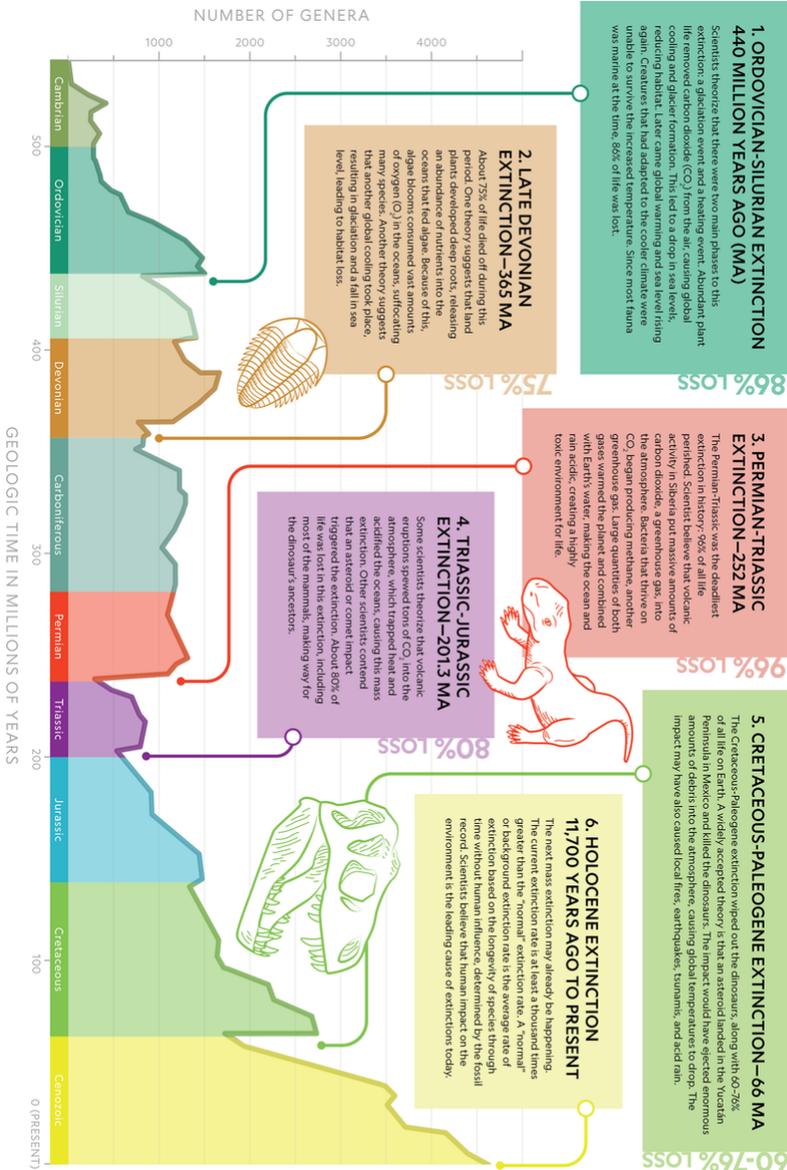
## Geological Timeline



# MASS EXTINCTIONS

See below a link to access the National Geographic infographic on the big five mass extinctions, under their education section.

<https://education.nationalgeographic.org/resource/mass-extinctions/>



## MASS EXTINCTIONS

A mass extinction is a sharp spike in the rate of extinction of species caused by a catastrophic event or rapid environmental change. Scientists have been able to identify five mass extinctions in Earth's history, each of which led to a loss of more than 75 percent of animal species.

# MASS EXTINCTIONS



## Activity instructions

Below are a number of activities centred around the End-Triassic vs Modern Day image on the next page.

## Research Poster Activity

- Using the End-Triassic vs Modern Day image as inspiration, create an eye-catching and engaging poster about it one of the other mass extinction events.
- Importantly, include information about how this event is similar and/or different to modern day.
  - Which environmental phenomena occurred in the lead up to the event? And why did it occur?
  - What is causing this phenomena in the modern day?

## Evolution Research Activity

- Chose a creature that survived the End-Triassic extinction event and create a fact file on them about how they survived the extinction.
  - What is the creature, and during what periods of geological time was it around?
  - What physical and behavioural features or traits allowed it to survive some of the phenomena listed on the poster?
  - Which current modern-day creatures have similar adaptations which could allow them to survive a similar extinction?

## Debate Activity

Some scientists believe that we are currently in the middle of a sixth mass extinction.

Many species are dying out, and going extinct much faster than they should be.

Some of this can be attributed to human activities like deforestation, CO<sub>2</sub> emissions, pollution, etc.

Create a classroom debate over the topic:  
*We are in the middle of the sixth mass extinction*

Get students to consider points such as:

- What defines a mass extinction?
- What evidence suggests we are, or are not in one?
- What parallels are there between previous extinctions and modern day?

# END-TRIASSIC VS TODAY

Download the full image on our website:

<https://wa-oigc.curtin.edu.au/outreach-and-education/teaching-resources/>

