



Components

NAME	DESCRIPTION	AUDIENCE
 <i>Exploring tropical cyclones</i> teachers guide	This guide suggests ways that students can develop an understanding of factors that influence tropical cyclone formation.	teachers
 <i>Cyclones</i> learning object	Students explore patterns relating to tropical cyclone formation, sea surface temperature and latitude.	students
 <i>Cyclone origins</i> worksheet	This worksheet guides students through use of the learning object, <i>Cyclones</i> .	students
 <i>How do cyclones work?</i> fact sheet	This fact sheet contains information on how tropical cyclones develop and build in strength.	students

Purpose

Students use an interactive learning object and worksheet to explore factors that affect cyclone formation in the Australasian region.

Outcomes

Students understand that:

- cyclones form through a combination of factors, some of which vary seasonally (such as sea surface temperature), and some that are due to physical characteristics of the planet;
- cyclones form in summer, at certain latitudes, when sea surface temperatures reach 26.5° C or above; and
- cyclone frequency and severity are difficult to predict.

Activity summary

ACTIVITY	POSSIBLE STRATEGY
Students use the learning object, <i>Cyclones</i> , with the worksheet, <i>Cyclone origins</i> , to investigate conditions that give rise to cyclones. The fact sheet, <i>How do cyclones work?</i> , provides supporting information.	individual students or in groups.

Teacher notes

The learning object, *Cyclones*, contains maps from the National Oceanic and Atmospheric Administration (NOAA) website that show sea surface temperatures during the period December to March for selected years. Maps are overlayed with cyclone origin data from the Bureau of Meteorology.

Maps show names, latitudes and longitudes, dates of activity and severity for cyclones that originated during the selected time period. Students explore these data to investigate relationships between sea surface temperature, latitude and cyclone formation.

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Associated SPICE resources

Cyclones 2: Exploring tropical cyclones may be used in conjunction with related SPICE resources to address the broader topic of how scientists use data to make predictions.

DESCRIPTION	LEARNING PURPOSE
<i>Cyclones (overview)</i> This learning pathway shows how a number of SPICE resources can be combined to teach the topic of cyclones. The topic is used as a context to investigate modelling of present and future climate.	
<i>Cyclones 1: Looking at cyclones</i> A presentation that shows effects of some recent cyclones sets the scene for a teacher-led class discussion about origins and conditions for cyclone formation.	Engage
<i>Cyclones 2: Exploring tropical cyclones</i> The resource explores patterns of cyclone formation associated with sea surface temperature and latitude.	Explore
<i>Cyclones 3: Predicting tropical cyclones</i> Data on sea surface temperatures are analysed to predict future cyclone activity.	Explain
<i>Cyclones 4: Modelling climate</i> Students investigate how the world may change if various climate change scenarios, suggested by CSIRO research, are followed.	Elaborate