



SECONDARY LESSON PLAN

SUSTAINABILITY &

COASTAL ENVIRONMENT

- One hour lesson plan
- Class & individual tasks
- Extension activity





SYLLABUS OUTCOMES (S5)

- ES3 People use scientific knowledge to evaluate claims, explanations or predictions in relation to interactions involving the atmosphere, biosphere, hydrosphere and lithosphere. (ACSHE160, ACSHE194)

Students:

c. evaluate scientific evidence of some current issues affecting society that are the result of human activity on global systems, eg the greenhouse effect, ozone layer depletion, effect of climate change on sea levels, long-term effects of waste management and loss of biodiversity



LESSON ACTIVITIES

In pairs, students answer these ice breaker questions: (5 mins)

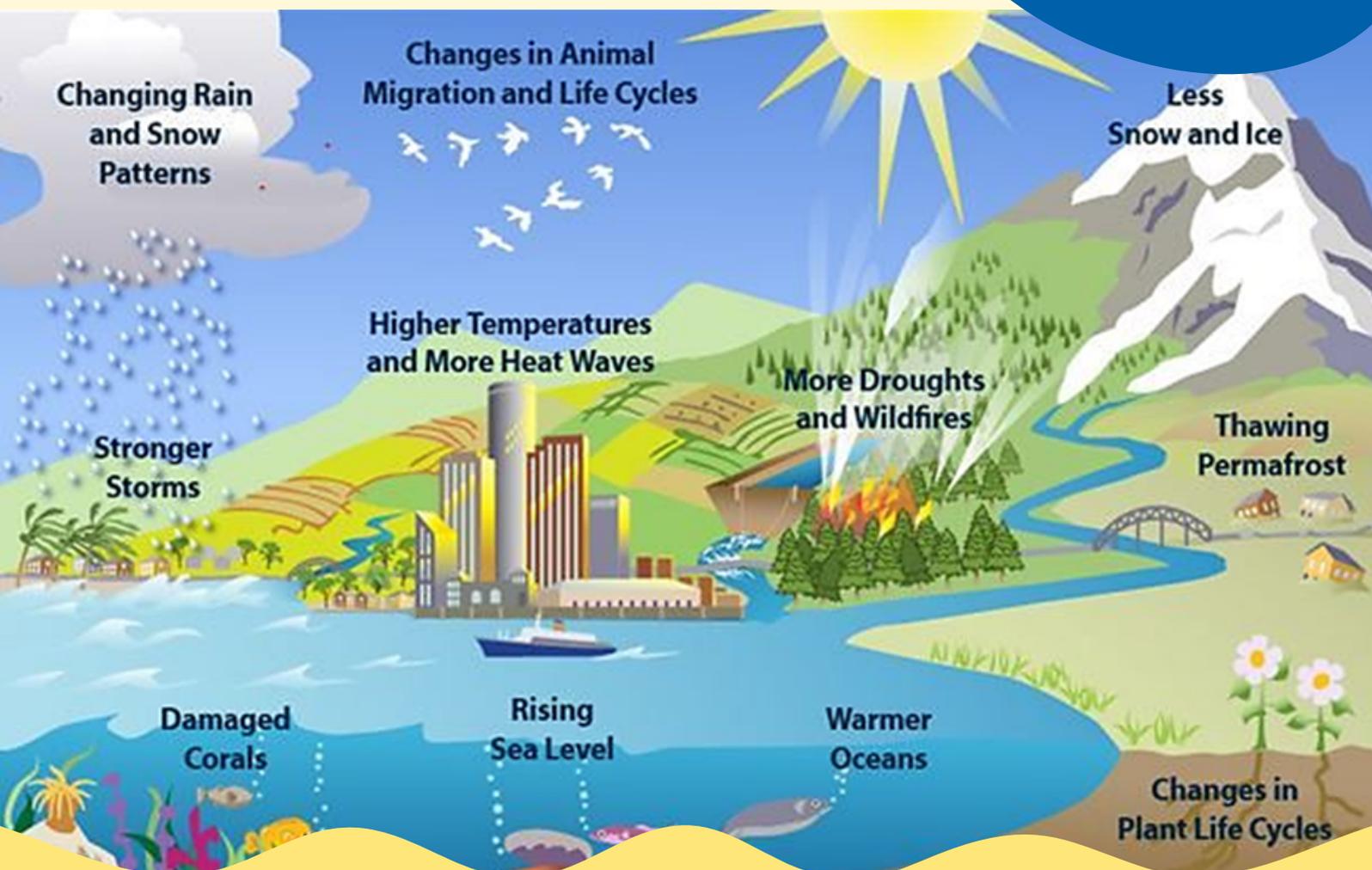
Would you rather...

- Use re-usable material bags OR paper bags when shopping?
- Give up your car OR give up meat for a year?
- Join a march for climate change OR give a presentation on climate change?
- Explore Space OR Explore the oceans? (80%+ of the ocean remains unexplored)
- Plant a forest OR regrow a coral reef?
- Walk to school for 2 years OR have cold showers for a year?
- In your home, have only candle light OR no heating/cooling?

Are you more worried about...

- Dangerous heatwaves OR rising sea levels?
- Food scarcity OR flooding?
- Thawing ice caps OR increases in fires?
- Plastic pollution OR deforestation?
- Infectious disease OR air pollution?

As a class, study and discuss the individual climate change impacts of this diagram (3 mins)



LESSON ACTIVITIES

AS A CLASS, COMPLETE THIS QUIZ: (5 MINS)

<https://www.earthday.org/the-climate-change-quiz/>



AS A CLASS, WATCH THESE VIDEOS(10 MINS)

Causes and effects of global warming National Geographic

https://www.youtube.com/watch?v=G4H1N_yXBIA (3 mins)

<https://www.youtube.com/watch?v=cXzfOpZSmk8> (2 mins)

https://www.youtube.com/watch?v=boKd_Pb2HUA (4 mins)



AS A CLASS OR INDIVIDUALLY, WATCH THIS VIDEO TO ANSWER THESE QUESTIONS (10 MINS)

<https://www.youtube.com/watch?v=rdvFWD2llwA>

- What is the process of coastal erosion?
- Why is coastal erosion happening?
- What are the long-term complications of coastal erosion?
- What are some man-made strategies that aim to reduce coastal erosion?

**THIS TASK CAN BE
TEACHER DIRECTED
OR INDEPENDENTLY
DONE BY STUDENTS**

(27 MINS)

1

CLICK THIS LINK:

<https://coastalrisk.com.au/home>

COASTAL RISK AUSTRALIA
PREDICTED COASTAL FLOODING RESULTING FROM
CLIMATE CHANGE

2

READ THE 'BACKGROUND' INFO

3

CHOOSE A MINIMUM OF 5 OF THE LOCATIONS BELOW

And then select 2 locations of your own (by typing into the search bar) to briefly observe the impacts of a sea level rise. Do this by changing the settings within the predicted and manual model options.

*BYRON BAY, NORTHERN NSW *CAIRNS, NORTH QLD *WILLIAMSTWON, MELBOURNE VIC *NOOSA HEADS, SUNSHINE COAST QLD *HINDMARSH ISLAND, ADELAIDE SA *FREMANTLE, PERTH WA *LAUDERDALE, HOBART TAS *COCONUT GROVE, DARWIN NT *BALLINA, RICHMOND VALLEY NSW *PORT DOUGLAS, NORTH QLD *LENNOX HEAD, RICHMOND VALLEY NSW *SYDNEY, NSW *MELBOURNE, VIC *HOBART, TAS *DARWIN, NT *NEWCASTLE, NSW *GOLD COAST, QLD *QUEENSLIFFE, MELBOURNE VIC

4

FROM THE LOCATIONS OBSERVED ABOVE

- Choose one location to study the impacts of sea level rise in depth.
- Note down the sea level rise settings you have chosen under predicted or manual mode.
- Write down all your observations about how sea levels at your selected settings will impact the environment, economy, human population, infrastructure, habitats, ecosystems and coastline compared to current day levels.
- Research what coastline mitigations are already in place for this area and suggest some future planning strategies the area could implement in response to the model's sea level rise event.

EXTENSION

Watch this video to learn how Palm Beach on the Gold Coast has constructed a man-made reef to save its coastline from coastal erosion:

<https://www.youtube.com/watch?v=n6Oh8mTWWDY>
(3 mins)

<https://www.youtube.com/watch?v=i6k6WN2GtWI>
(3mins 30secs)

- Evaluate the reef's long-term effectiveness





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SECONDARY
TEACHER
RESOURCES
ON OUR HUB!**



beachsafetyhub.org.au