



Cayman Climate Education – Secondary KS3

How is climate change putting Cayman at risk now: Lesson 4

Lesson 4 How is climate change putting Cayman at risk now?	
Prior Requirements: It is preferred that students have completed lessons 1-3 beforehand to have a good grasp of the causes and history of climate change.	
Learning Objectives: Students will explore and understand the present-day effects of climate change on the Cayman Islands, focusing on sea level rise, extreme weather events, and ecosystem distribution. Students will understand the risks that sea level rise poses to populated areas and environments around Cayman. Students will look at past hurricanes and track their usual paths into the Caribbean. They will learn why climate change may produce stronger, less predictable hurricanes. Students will learn about habitats around the Cayman Islands and the different ways climate change may impact them. They will also learn the ways in which humans add to this impact.	NC Links: <u>Chemistry Objectives</u> <ul style="list-style-type: none">Students should be able to evaluate the formation and impact of environmental conditions such as smog, acid rain and climate change, both locally and globally. <u>Genetics and Evolution Objectives</u> <ul style="list-style-type: none">Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction. <u>Geography Objectives</u> <ul style="list-style-type: none">Understand how human and physical processes interact to influence and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems.
Success Criteria (in “child-friendly” language): I understand how climate change is going to affect the Cayman Islands I understand how climate change is affecting humans and the environment in the world. I understand how sea level rise is going to affect the Cayman Islands I understand how climate change is going to affect extreme weather in the Cayman Islands I understand how climate change is going to disrupt ecosystems in the Cayman Islands	
Key Language: Climate change, sea level rise, extreme weather, ecosystem disruption, contour maps, elevation, flooding, hurricanes, warming oceans, droughts, heatwaves, rainfall, storm surge,	

population, melting ice caps, mangroves, coral reefs, dry forests, seagrass beds, beaches, xerophytic shrubland, saline ponds, deep sea.

Introduction (10 minutes)

Begin with a brief presentation highlighting the global consequences of climate change. Pose the question: "Who is on the front line of climate change?" and guide them to the answer: Coastal and island communities, like Cayman.

Main Activities (35 minutes)

Activity:

Divide class into 3 groups (or 6 if needed for class size) -

- **Sea Level Rise:** Distribute contour maps of Cayman to small groups of students. Provide them with coloured pencils or markers. Instruct them to color the map based on elevation. Discuss the implications of rising sea levels on these areas.
 - Provide a "Fact Sheet about Sea Level Rise" - Include information about causes (water temp and land ice melt) as well as current levels of rise and projections.
 - Group Creates "Areas at Risk of Sea Level Rise" map of Cayman.
 - Map should highlight areas of risk and provide relevant facts from the Fact Sheet.
 - Highlight populated areas that are also at risk.
- **Extreme Weather Patterns:** Hand out hurricane maps showing the routes of hurricanes from West Africa to the Caribbean over the past few decades. Ask students to identify patterns.
 - Provide a "Fact Sheet on Hurricanes and Climate Change" - this should highlight the effects of warmer ocean water and climate change on hurricanes.
 - Group to create warning poster about climate change and hurricanes.
 - Poster should show where hurricanes are created.
 - Poster should show routes of hurricanes in the last 20 years.
 - Poster should show that higher sea temperatures will cause more severe hurricanes.

Materials:

- Sea level rise group activity worksheet
- Extreme weather group activity worksheet
- Ecosystem disruption group activity worksheet
- Sea Level Rise, Extreme Weather and Ecosystems Fact Sheets
- Pens and pencils
- Poster boards
- Scissors
- Glue sticks



- **Ecosystem Disruption:** Using a map of Cayman's ecosystems, students should place information boxes (provided) next to each ecosystem. These boxes will detail how climate change affects each ecosystem. Students should discuss potential adaptations or changes within these ecosystems due to climate change.
 - Provide info boxes about each major habitat in Cayman.
 - Group to create map of at-risk areas in Cayman.
 - Map should show extent of habitats.
 - Map should have information about habitats.
 - Students add their own ideas about the importance of each habitat to Cayman.

Conclusion (10 minutes)

Conclude with either group presentations or student gallery walk, followed by a brief class discussion about what they have learned and how these things matter to Cayman.