

LESSON TITLE–Weather, Climate and Adaptations of Animals to Climate

Time1hr 40 minutes

OVERVIEW Students will explore the changes in the climate and adaptation of animals to climate through Google Earth Engine and My Map.

SUBJECT/TOPIC
SCIENCE- ENVIRONMENTAL SUSTAINABILITY

AGE LEVEL
GRADE- VII

Learning Objectives By the end of the activity, the students will be able to:

- Adaptations of animals to different climates polar, desert and tropical rainforests

 **Inquiry** Students will be shown the video to brainstorm and motivate to inquire more about Ecosystem, species and genetics in totality as Biodiversity.

 **Materials Needed**

<https://images.app.goo.gl/nAtjMg3fxbaJCQKk6> (On Ecosystem)

Access to Google Earth Engine

https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22%3A%5B%221fRQNoaQa0ZpvQugz_60PzbR7ennWWAzw%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22114059292871551782161%22%7D&usp=sharing

Videos

<https://www.youtube.com/watch?v=mZt1Gn0R22Q&feature=youtu.be>
<https://www.youtube.com/watch?v=YCoEiLOV8jc&feature=youtu.be>

 **Lesson Summary**

Engage: At the beginning of the lesson, the class will do a worksheet on word search. Students will discuss biodiversity as they try to connect it to prior learning. Students will then be instructed to watch a 4-minute video about biodiversity and make a list as to why it is important.

Explore: Students will be working in pairs to observe 3 different ecosystems. Students will describe differences between these three ecosystems populations and identify which is more diverse. They will find out among the various ecosystems which animals are endemic, endangered, vulnerable and extinct.

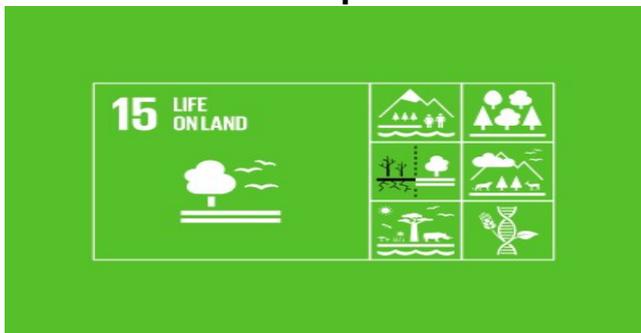
Student internet access

Explain: Students on the basis of gathered information will identify the reasons for the animals being extinct.

Revise: All the terms and investigation will be listed

Apply: Sensitized students to take care of the environment, animal life around to have sustainable world around.

 **Sustainable Development Goal**



 **Culminating Task/Assessment** Students will give presentation in a group. Animals and their adaptation in various land forms.

 **Textbook Chapter**

Chapter 7 Weather, Climate and Adaptations of Animals to Climate

Engage (5 minutes)

1. Students will be shared a word search sheet. It will introduce the topic and check the prior knowledge

<https://images.app.goo.gl/nAtjMg3fxbaJCQKk6> (On Ecosystem)

Inquiry investigation based questions will be asked.

- Name the structure formed to protect flora and fauna in a particular habitat.
- Name the species of plants and animals which are found exclusively in a particular area.
- Name the place where killing or capturing of animals is strictly prohibited.
- Name the structure made of all the plants, animals and microorganisms in an area along with non- living components such as climate, soil.
- Which is the first Reserve Forest of India?

Explore (25 minutes)

1. Students will explore Google Earth Engine on ecosystem.
https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22%3A%5B%221fRQNoaQa0ZpvQugz_60PzbR7ennWWAzW%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22114059292871551782161%22%7D&usp=sharing
2. Students will understand the term biodiversity and various habitats.

Explain (20 minutes)

1. Students will be working in pairs to observe 3 different ecosystems on Google Earth.
2. Students will describe differences between these three ecosystems and identify which is more diverse.
3. They will find out among the various ecosystems which animals are endemic, endangered, vulnerable and extinct.

Revise (10 minutes)

1. Students will list the observations and discuss with groups.

Next, repeat the process with a second source of information.

Explore (25 minutes)

1. Students will locate polar, desert, and rain forests in the world map.
2. Students will find out the various adaptive features of the animals that help them to survive in the particular habitat.
3. Explore the reasons for extinction of animals.

Explain (20 minutes)

1. All the findings by students will be collected in groups
2. Students will explain
 - In-situ Conservation
 - Ex-situ Conservation
4. Red data book / endangered and extinct animals with details will be explained.

Revise (10 minutes)

Students will list the observations and discuss with groups.

Apply (80 minutes)

1. Students will understand biodiversity and ecosystem.
2. Students will be sensitized towards protection and conservation of animals.
3. Correlate the relation between the habitat and adaptation.

Evaluate: Exemplar Response and/or Rubric

Collaborative project

Additional Resources

- How are evolution and adaptation related.
- <https://www.youtube.com/watch?v=mZt1Gn0R22Q&feature=youtu.be>
- <https://www.youtube.com/watch?v=YCoEiLOV8jc&feature=youtu.be>

Options for Differentiation

- Quiz of three levels will be conducted : Acceptance, Balance and Challenge will be conducted

Credits

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