

## Then and Now

Adapted by Duc Tran, Environmental Science Institute, January 2011

Source: “Crocs, Then and Now” by National Geography Xpeditions

<http://www.nationalgeographic.com/xpeditions/lessons/08/g68/crocsthennow.html>

**Grade Level:** 7- 8; may be adjusted for all grades

**Time required:** 3 – 5 days

**Sample TEKS:**

§112.19. Science, Grade 7: 2A, 2B, 2D, 10A, 11A, 11B, 11C, 12A

§112.20. Science, Grade 8: 2A, 2B, 2D, 11A, 11B, 11C

**Overview:**

Crocodylians are an ancient group of animals. They share a common ancestor in the extinct SuperCroc (*Sarcosuchus imperator*). SuperCroc lived about 110 million years ago, and its fossils have been found in the Sahara in the African country of Niger. Crocodylians are a group of animals that includes crocodiles, alligators, gharials, and caimans.

Students will investigate the geographical distributions, habitats, and other features of modern crocodylians and SuperCroc. They will compare and contrast one modern species of crocodylians with the SuperCroc and present their research on a poster.

**Note to Teachers:** Teachers can make this activity more fascinating by allowing the students to select their species of comparison (e.g., modern elephants versus mammoths), offering the students the opportunity to construct their own learning.

**Objectives:**

Students will:

- Consider the things we can learn about one species by studying the other.
- Explain similarities and differences between the 2 species by creating Venn diagrams
- Describe how modern crocodylians have adapted to their ecoregions.
- Label maps to show the distributions of modern crocodylians and the location of the SuperCroc fossil discovery.

**Materials:**

- Computer with Internet access
- Print resources
- Poster or construction paper
- Drawing materials

**Additional Resources:**

- Crocodylians—Natural History and Conservation (<http://www.crocodylian.com/>)
- National Geographic: SuperCroc (<http://www.nationalgeographic.com/supercroc/>)
- National Geographic: Wild World (<http://www.nationalgeographic.com/wildworld/>)

- Blank Xpeditions outline maps of the world  
(<http://education.nationalgeographic.com/education/xpeditions/atlas/>)

**Activity:**

Students will investigate features of modern crocodilians and SuperCroc. Teacher should provide class time for students to work on their project by going to the computer lab or school library. Students are responsible for creating a poster-size presentation exhibiting the geographical distributions, habitats and other features regarding each species and describe the similarities and differences between the 2 species. Teacher should also address the questions that you want the students to answer and exhibit on the poster.

**Sample questions to address:**

- What can we learn about SuperCroc by studying modern crocodilians?
- What can SuperCroc fossils teach us about modern crocodilians?

**Suggested Assessment:**

Ask each student or group of students to choose one modern crocodilian species to compare to SuperCroc. They should conduct research on the internet and/or print resources to find out details on these aspects of each species: habitat, geographical distribution, diet, size, appearance (display pictures) and behaviors.

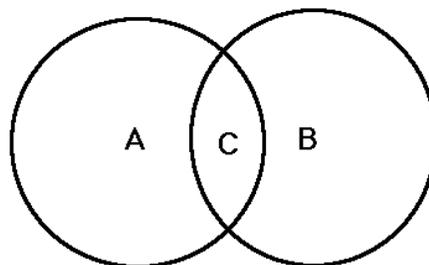
Students should compile their research into a poster-size presentation which includes a Venn diagram depicting the similarities and differences between the two species. The diagrams should include text and images to highlight the comparisons being made.

**Extending the Lesson:**

Students may continue their research to investigate the reasons crocodilians have survived so long while other types of animals, such as dinosaurs, have become extinct. Ask them to report on their findings.

**Terminology**

1. Venn diagram: is made up of two or more overlapping circles. It is often used in mathematics to show relationships between sets. In language arts instruction, Venn Diagrams are useful for examining similarities and differences in characters, stories, poems, etc. It is frequently used as a prewriting activity to enable students to organize thoughts or textual quotations prior to writing a compare/contrast essay. This activity enables students to organize similarities and differences visually. (Source: <http://www.sdcoe.k12.ca.us/score/actbank/tvenn.htm>)



2. Ecoregion: a major ecosystem defined by distinctive geography and receiving uniform solar radiation and moisture.  
(Source: [http://oxforddictionaries.com/view/entry/m\\_en\\_us1243070#m\\_en\\_us1243070](http://oxforddictionaries.com/view/entry/m_en_us1243070#m_en_us1243070))
3. Habitat: the area or environment where an organism or ecological community normally lives or occurs.  
(Source: <http://kids.yahoo.com/reference/dictionary/english/search?query=habitat>)
4. Geographic distribution: the natural arrangements of animals and plants in particular regions or districts. (Source: <http://www.webster-dictionary.net/definition/Geographical%20distribution>)