

## **Crittercam® Classroom Companion** *Related Materials from National Geographic*

### **Crittercam**

<http://www.nationalgeographic.com/crittercam/>

What do wild animals do when we're not around? Find out with National Geographic's Crittercam!

- **About Crittercam**

<http://www.nationalgeographic.com/crittercam/about.html>

- **Crittercam FAQs**

<http://www.nationalgeographic.com/crittercam/faqs.html>

- **Crittercam Team**

<http://www.nationalgeographic.com/crittercam/bios.html>

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### **On TV**

#### **Crittercam on the National Geographic Channel**

<http://channel.nationalgeographic.com/channel/crittercam/>

Watch Crittercam videos, see episode excerpts, download a screen saver, and more.

#### **Wild Chronicles on Public Television Stations**

<http://www.nationalgeographic.com/donate/wildchronicles/>

This weekly, half-hour, magazine-style program, made possible by National Geographic Mission Programs, features a Crittercam segment in each show.

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### **Games and Interactive Adventures**

#### **Crittercam Interactive Missions**

<http://www.nationalgeographic.com/crittercam/missions.html>

National Geographic's Remote Imaging Team needs you to help custom-design a Crittercam for the animal of your choice. Get to work!

#### **Virtual Worlds**

Experience Antarctica, the Arctic, and the deep sea like you never have before—from an animal's-eye view. Dive in and see what animals you can find in these interactive worlds.

- **Antarctica**

<http://www.nationalgeographic.com/crittercam/antarctica/index.html>

- **The Arctic**

<http://www.nationalgeographic.com/crittercam/arctic/index.html>

- **Deep Sea**

<http://www.nationalgeographic.com/crittercam/deepsea/index.html>

#### **Crittercam Antarctic Adventure**

<http://kids.nationalgeographic.com/Games/InteractiveAdventures/Crittercamantarctic>

Can you recover nine leopard seal Crittercams from the icy Antarctic? Find out!

#### **Crittercam for Kids**

<http://www.nationalgeographic.com/crittercam/kids.html>

Print out animal pictures to color, learn about Crittercam animals, and more.

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[www.nationalgeographic.com/education](http://www.nationalgeographic.com/education)

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## Lesson Plans

Grades K-2

### Sharks: Should They Be Afraid of Us?

<http://www.nationalgeographic.com/xpeditions/lessons/14/gk2/scaredshark.html>

In this lesson from National Geographic Xpeditions, students learn some interesting facts about different kinds of sharks and discuss the reasons why people are both afraid of and interested in sharks. Students participate in an online quiz in order to develop their knowledge and understanding of shark behavior.

Grades 3-5

### How Do Humpback Whales Feed?

<http://www.nationalgeographic.com/xpeditions/lessons/18/g35/cchumpback.html>

In this National Geographic Xpeditions lesson, students learn about the "bubblenet feeding" technique of humpback whales and conduct their own simulation to see how it might look underwater. They discuss why humpbacks might feed in this manner and they draw pictures showing what bubblenet feeding might look like from the Crittercam's viewpoint.

### How Do Leopard Seals Hunt?

<http://www.nationalgeographic.com/xpeditions/lessons/08/g35/seasseal.html>

In this lesson from National Geographic Xpeditions, students brainstorm the hunting behaviors of animals in general and leopard seals in particular and read some basic information about leopard seals. They imagine that they are scientists who want to study leopard seal hunting, and they draw diagrams showing the places they would look for the seals. They conclude by writing paragraphs explaining where they would look for the seals and what behaviors they would look for.

### It's Tough to Be a Leatherback Turtle

<http://www.nationalgeographic.com/xpeditions/lessons/18/g35/ccleatherback.html>

In this National Geographic Xpeditions lesson, students learn about leatherback turtles and the threats they are facing, and see pictures of volunteers studying the turtles and their eggs on the beach. The students consider how Crittercam can add to these studies, and they conclude by creating signs that might be posted on the beach to inform visitors of leatherback research and conservation and appropriate ways to behave on beaches where leatherbacks nest.

### Lions and People—Uneasy Neighbors

<http://www.nationalgeographic.com/xpeditions/lessons/18/g35/cclions.html>

In this National Geographic Xpeditions lesson, students learn about lion hunting behavior and consider how these predators might pose problems for villagers in areas where lions and people coexist, such as the Laikipia plateau in central Kenya. They brainstorm how corrals, dogs, and other preventive options might help reduce the dangers of lions to livestock, and they discuss how Crittercam might reveal more about lion hunting behaviors in order to help the situation. They conclude by designing plans to help people coexist with lions.

### Mysteries of the Monk Seal

<http://www.nationalgeographic.com/xpeditions/lessons/18/g35/ccmonkseal.html>

This National Geographic Xpeditions lesson asks students to think about why species become extinct and why monk seals are on the verge of extinction. They write questions to help figure out why the monk seal is endangered and discuss how Crittercam might help answer these questions.

### Pilot Whales' Place in the Ocean

<http://www.nationalgeographic.com/xpeditions/lessons/08/g35/ccseaswhale.html>

In this lesson from National Geographic Xpeditions, students consider why so many whale species can survive within one area of the ocean. Students discuss how pilot whales thrive, and they consider how National Geographic's Crittercam can be used to help us learn about pilot whales' deepwater feeding behaviors. They conclude by writing dialogues pretending that they are scientists taking curious vacationers on a tour to see pilot whales.

### What Do We Know About Nurse Shark Mating?

<http://www.nationalgeographic.com/xpeditions/lessons/08/g35/ccnurses shark.html>

In this lesson from National Geographic Xpeditions, students use National Geographic News articles to learn some basic information about nurse sharks and see photographs of scientists conducting nurse shark studies. Students work in groups to draw pictures of discoveries that scientists have made about nurse shark mating and reproduction, and consider the potential benefits of these studies for ocean conservation.

### **Which Turtle for the Tiger Shark?**

<http://www.nationalgeographic.com/xpeditions/lessons/08/g35/ccloggerhead.html>

In this National Geographic Xpeditions lesson, students consider the reasons for the significant difference in vulnerability between the turtle species in Western Australia's Shark Bay. They are asked to think critically about hints they are given concerning Shark Bay's sea turtles and their ability to evade tiger sharks. Students also conduct an investigation to "discover" information that will help them answer questions.

Grades 6-8

### **A Trip to the Beach**

<http://www.nationalgeographic.com/xpeditions/lessons/14/g68/beachshark.html>

In this National Geographic Xpeditions lesson, students investigate the truth behind common myths about sharks and shark attacks. Students learn why sharks are important members of the ecosystem. They view National Geographic's "Critttercam Chronicles" in order to learn how researchers study shark behavior by attaching small cameras directly to the sharks. They also consider the ways humans should modify their habits to account for the presence of sharks in popular beach areas.

### **Can Critttercam Help Protect Humpbacks?**

<http://www.nationalgeographic.com/xpeditions/lessons/18/g68/cchumpback.html>

In this National Geographic Xpeditions lesson, students learn about humpback whales' bubblenet feeding behavior and how Critttercam is being used to investigate it underwater. They read and discuss a National Geographic News article about Critttercam, consider the implications of this research for humpback conservation efforts, and write letters to the director of a whale conservation organization describing how Critttercam research might help the organization in its efforts.

### **Can Research Save the Leatherback Turtle?**

<http://www.nationalgeographic.com/xpeditions/lessons/18/g68/cleatherback.html>

In this National Geographic Xpeditions lesson, students learn about leatherbacks and the threats they are facing and read about how volunteers are helping to study the turtles. The students examine data that volunteers have collected and explain what the research shows and how it's important for leatherback conservation. The students also consider how Critttercam can add to these studies, and they conclude by designing "slide shows" that illustrate information about leatherbacks and leatherback conservation.

### **Diving In to Save the Monk Seal**

<http://www.nationalgeographic.com/xpeditions/lessons/18/g68/ccmonkseal.html>

In this National Geographic Xpeditions lesson, students use the Internet to learn about monk seal research and an ecosystem reserve that has been established in part to protect the seals. They consider the particular challenges scientists face in studying monk seals on projects such as Critttercam, and they write questions they would ask if they were conducting monk seal research. The students conclude by writing plans they would use on a trip to study the Hawaiian monk seal.

### **Leopard Seals and Penguins: A Delicate Balance**

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

In this lesson from National Geographic Xpeditions, students consider the factors that could contribute to the disruption of the delicate balance between leopard seals and penguins in the Antarctic. The primary goals of the lesson are for students to learn some basic information about leopard seals and the Antarctic ecosystem and to think carefully about the fragility of the ecological balance. Students conclude the lesson by drawing diagrams of the Antarctic food web, including factors that could potentially change its structure, and by writing paragraphs describing their drawings.

### **Pilot Whales' Social Behavior**

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

In this lesson from National Geographic Xpeditions, students learn about pilot whales' sociability and bonding and consider how National Geographic's Critttercam might help scientists learn more about their social behaviors. Students write research plans proposing questions that scientists could ask when using Critttercam to study pilot whale social behavior.

### **Why Study Nurse Shark Mating?**

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

In this lesson from National Geographic Xpeditions, students learn basic information about nurse sharks and read articles describing recent studies in the Florida Keys. They also read about shark conservation programs and discuss how nurse shark mating studies might assist shark and ocean conservation. They conclude by writing grant proposals pretending that they are scientists who want to renew their funding for research into nurse shark mating behaviors.

Grades 9-12

**Sharks: Setting the Record Straight**

<http://www.nationalgeographic.com/xpeditions/lessons/14/g912/recordsharks.html>

In this lesson from National Geographic Xpeditions, students investigate sharks' importance to the ecosystem, recent shark attacks, legislation regarding shark feeding, and the geographical distribution of shark attacks in the United States. Students go on to write outlines for TV programs aimed at educating the public about sharks.

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**Classroom Activity**

**Build a Whale of a Crittercam**

<http://www.nationalgeographic.com/xpeditions/activities/18/crittercam.html>

Your mission: Help the Crittercam team study humpback whales! Your job? Build a video camera and attach it to a humpback whale.

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**News Articles**

**Inventor Wants Crittercam to Inspire People**

[http://news.nationalgeographic.com/news/2004/01/0120\\_040120\\_crittercammarshall.html](http://news.nationalgeographic.com/news/2004/01/0120_040120_crittercammarshall.html)

An interview with Greg Marshall, the inventor of National Geographic's Crittercam unit and director and executive producer of National Geographic's Remote Imaging Program

**Crittercam: More Than an Animal's-Eye View**

[http://news.nationalgeographic.com/news/2004/01/0116\\_040116\\_marinecrittercam.html](http://news.nationalgeographic.com/news/2004/01/0116_040116_marinecrittercam.html)

An overview of how Crittercam works underwater

**Animal-Borne Crittercam Makes the Leap to Land**

[http://news.nationalgeographic.com/news/2004/01/0116\\_040116\\_terrestrialcrittercam.html](http://news.nationalgeographic.com/news/2004/01/0116_040116_terrestrialcrittercam.html)

An overview of how Crittercam works on land

**More Crittercam News Articles**

[http://news.nationalgeographic.com/news/2004/01/0130\\_040130\\_critterindex.html](http://news.nationalgeographic.com/news/2004/01/0130_040130_critterindex.html)

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**Podcasts**

**Wild Chronicles**

<http://www.nationalgeographic.com/podcasts/wildchronicles.html>

See the natural world like never before through the eyes of National Geographic adventurers, scientists, researchers, and the extraordinary Crittercam.

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**Video Clips**

**African Lion**

[http://news.nationalgeographic.com/news/2006/03/0323\\_060323\\_lion\\_video.html](http://news.nationalgeographic.com/news/2006/03/0323_060323_lion_video.html)

Look in on National Geographic's Crittercam project as experts outfit a wild lion in East Africa with a small camera.

**Brown Bear**

[http://www3.nationalgeographic.com/animals/video/bear\\_brown\\_crittercam.html](http://www3.nationalgeographic.com/animals/video/bear_brown_crittercam.html)

Watch what happens when a three-year-old brown bear cub gets fitted with a Crittercam.



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**Humpback Whales**

[http://www3.nationalgeographic.com/animals/video/whale\\_humpback\\_crittercam.html](http://www3.nationalgeographic.com/animals/video/whale_humpback_crittercam.html)

See the sea through the eyes of a humpback whale with Crittercam.

**Leopard Seal**

[http://www3.nationalgeographic.com/animals/video/seal\\_leopard.html](http://www3.nationalgeographic.com/animals/video/seal_leopard.html)

Using Crittercam, scientists try to learn about the leopard seal's hunting tactics.

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**Maps**

**MapMachine**

<http://plasma.nationalgeographic.com/mapmachine/>

Zoom in on nearly every place on Earth with National Geographic's MapMachine.

**Outline Maps**

<http://www.nationalgeographic.com/xpeditions/atlas/>

Download and print black-and-white outline maps, perfect for classroom handouts, homework, and reports.

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