

Hanging On

Activity Information

Grade Appropriate Level: Upper Intermediate/Secondary

Duration: Several class periods

Materials: Handouts of *Hanging On* by Simon Elegant Balikpapan; Time Asia News, 2001 (**enclosed**), 2 large chart papers, 2 jumbo markers, access to Internet, notebooks, journal paper, supplies to create a visual aid

Objective

The purpose of these activities is to provide students with extended opportunities to become familiar with different threatened, or endangered species and to further investigate the impacts of animal extinction. In addition, students will develop critical thinking and persuasive writing skills through a thoughtful analysis of animal endangerment and human intervention impacts.

Prescribed Learning Outcomes

- Evaluate how major natural events and human activity can affect local and global environments and climate change
- Identify a variety of local animal species and their habitat requirements
- Describe factors affecting local animal populations and behaviours
- Demonstrate awareness of the social and economic value of forest animals
- Locate, access and select appropriate information from a variety of resources and consider the quality, currency and accuracy of each source
- Create communications for an increasing range of audiences and purposes
- Create academic, technical and personal communication, including research and technical reports and oral presentations
- Adapt their oral presentations and discussions to best suit audiences and styles
- Create a variety of communications using different tones and voices to evoke emotions, influence, persuade, and entertain



Introductory Activity

HELPING OR HINDERING the Survival of Endangered Species is a warm-up activity that will help your class to think critically about the state of endangered animals. Students will analyze and compare factors that help or hinder their survival.

Divide the class in half and, ensuring the group has appropriate room for discussion, provide each with an enlarged card that read **HELPING or HINDERING. (Cards are attached.)**

- Direct the groups to consider the card in the context of endangered species. Allow about 15 minutes to have them brainstorm factors that help or hinder the survival of endangered species in general, or a certain species in particular. For example: poaching, hunting, conservation effort.
- Each group should log their ideas in point form on large chart paper provided by the teacher. Aim for 6-10 factors per chart.
- Next, juxtapose the charts on a wall or chalkboard for the class to view.
- Invite a spokesperson from each group to read their responses aloud to class and expand on their points where necessary.
- Ask the class if there are other factors they'd like to add to the HELPING or HINDERING chart. Then, lead a brief discussion about the information collected. Do the students agree or disagree with what they've read? How do they feel after reading these factors? What are their predictions for the future of endangered species? What could they do to help?

* Students can be invited to record their thoughts in a journal that they keep during this study about endangered species. This information may assist them in completing extension assignments provided.

Suggested Instructional Strategies

Activity A

- Prior to this activity, students should be introduced to key vocabulary that will be explored later in this study. Post the list of words in the classroom and engage the students in a quick dictionary search of the words to record in their journals, or use the words as part of a spelling assignment.

extinction	conservation	sustainable	survival	instinct	
genetic	primatologist	humanity	inherited	control group	
ecological	evolutionary	sociability	anthropologist	theory	
instrumental	circumstances	kinship	surrogate	rehabilitation	
captivity	physiology	psychology	origins	inhabitants	threatened
orangutans	chimpanzees	gorillas	cultured	preservation	

Activity B – Orangutans in Indonesia

- Invite students to pair up and read, **Hanging On** by S. Balikpapan. After discussing the article with their partners, students will complete Worksheet A, **Hanging On**. (Included)
- Students can write a short journal entry as they reflect on the orangutan dilemma in Indonesia.



Activity C – Research & Persuasive Presentation

The following activity will require the students to conduct research on a particular endangered or threatened species. Students should utilize the Internet plus school &/or public library as well as resources. A list of helpful websites is listed at the end of this document.

- The teacher may wish to provide a set list of threatened or endangered species in their area to choose from, or they may wish to permit students to do extra research to find a species from anywhere in the world. (We've included links to Canadian, BC and global species lists below). Ensure that every student chooses a different

animal to report on to stress the diverse range of animals facing extinction as well as the seriousness of the issue.

- Students research their animal and collect information in note-form using the following questions as a guideline:

1. What is the common name and scientific name of the species?
2. Describe the physical characteristics of the species.
3. Describe the usual habitat of the species and locate where it has lived in the past and present.
4. Explain the life cycle of the species.
5. What has caused this species to become endangered or threatened? Outline the factors that have caused this. Are the factors related to human or natural impact or both?
6. When was this species declared endangered? And how was it determined that the species should be added to the list? In other words, what justification is there that the animal is nearing extinction?

7. Has this species received any special media attention from conservation, industry or government groups? Describe.
8. What has been done, to date, to help save this species?
9. Can students identify some species that have recovered from the brink of extinction and what measures were taken?
10. After conducting your research, what more do you feel could and should be done to help this situation?
11. Can students name any examples of disastrous efforts of human intervention to protect a species or “manage” an ecosystem?
12. How did Canada play a valuable role in preserving an endangered species in the famed US [Yellowstone Park](#)?



- Next, the teacher will review the function of **persuasive writing** with the class. Clarify the purpose of a persuasive piece, which is to convince the reader or audience of the author’s point of view.
- Students will use their notes to develop a persuasive oral presentation that they will present to the class. The presentation should aim to convince the audience that this species is worth saving and is still possible to save. The speech will offer several ideas for how to improve and expedite the conservation efforts and how to monitor and maintain the species over time.

In addition, the speech should include the short-and long-term impacts (ecological, moral, etc.) of the species’ extinction.

- Students should plan their presentation based on 5-8 minutes in length and use index cards to help them organize their thoughts.
- If time permits, encourage the students to include a powerful visual aid to supplement their persuasive speech. For example, timelines, graphs, illustrations or pictures.
- Allow time for students to practice their speeches with a partner prior to presenting to the class.

Suggested Assessment Strategies

The teacher will create criteria with (or without) the class that will guide the students through each assignment. Evaluation of the activities will be based upon the following:

- participation in class discussions, partner/group activities
- evidence of thoughtful reflections and assignments in the journal
- thorough and focused research on the endangered species
- ability to create and present a powerful, focused and persuasive speech that follows the outlined criteria

Suggested Activities for Extension

- Write a letter to the newspaper or local government about your endangered species and propose some small and large-scale solutions, showing consideration for Indigenous, environmental, economic and social factors.
- Create large posters that illustrate the species and advocate for their safety. Display them in your school or send them to a suitable location that may help voice your concerns.
- Create a class book for your school library that includes a full page of information about each endangered species that was researched.
- Create a large map of the world, country, or province that encapsulates the regions where the species lives. As a combined art activity, highlight the areas where the species currently inhabit. Include a sketch and a few facts about each animal. Display it in the class or in a hallway.
- Have each student create a special postcard on heavy cardstock that illustrates the species they studied. The illustration/information should depict the animal's threatened state. The teacher could make colour copies of the cards (reserving a class set) so students can invite others to write their feelings/ideas about this endangered animal on the postcard and send them to an appropriate office or politician who can voice their concerns.

- While the seal hunt ban of the 1970s was done in Canada to protect their populations, how has this caused other impacts in the food chain? Study all the stakeholders and issues. From a [UBC study](#): “Recently, people found that the population of seal pups has decreased precipitously (“An introduction”, n.d.). Hence, the voices that wish to protect seals became louder and as a result, the conflicts between animal welfare organizations and seal hunters became more contentious. The seal hunt is a unique problem, and it seems to be neither right nor wrong, as there are many different views.” Some are now saying that ban has caused the proliferation of seals who [eat all the salmon](#) that the [Endangered Southern Resident Orca whales](#) depend on [in their diets](#). Students should gather that these issues have many views and that “science” is not always a consensus.



- If you want to show students a good example of how human attempts to manage complex ecological issues can turn into a real catastrophe, make time to show them the “Unnatural History of Cane Toads” on [YouTube](#). Please note at about the 41 Minute mark of the video, they’ll see a van running over toads. Watch it first to ensure your kids can handle it!

The brief story is that the toads were imported to Australia in the 1930s in a failed attempt to have them eat the ‘cane grubs (beetles)’ that were destroying sugar cane crops farmers and the local economy depended on. The toads, once landed in Australia, ate almost everything but the cane grub, had [no natural predator](#) and have since overrun the country. They’re called a pest, an “invasion machine” that created food chain issues by eating native populations. (Good example of human intervention that failed spectacularly.)

Suggested Website Resources:

<https://www.canada.ca/en/services/environment/wildlife-plants-species/species-risk.html>

<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/red-blue-yellow-lists>

<https://www.iucnredlist.org/about/background-history>

<https://www.britannica.com/list/10-of-the-most-famous-endangered-species>

<https://www.cbc.ca/radio/quirks/nov-30-tipping-into-climate-catastrophe-blue-whale-heartbeat-thinking-twice-on-fake-news-and-more-1.5377120/the-triumphant-life-of-an-under-wolf-in-yellowstone-1.5377190>

<https://www.yellowstonepark.com/park/conservation/yellowstone-wolves-reintroduction/>

<https://www.thestar.com/news/canada/2022/05/22/are-sea-lions-and-seals-eating-too-much-of-bcs-salmon-the-answer-may-lead-to-a-cull.html>

https://www.youtube.com/watch?v=0fts6x_EE_E
<https://www.youtube.com/watch?v=6tjDCZrGnxc>

<https://www.theguardian.com/inequality/2017/nov/01/animal-rights-activists-inuit-clash-canada-indigenous-food-traditions>

<https://www.pitandquarry.com/calportland-constructs-burrowing-owl-habitats/>

<https://www.nhm.ac.uk/discover/ten-animals-we-have-saved-from-extinction.html>

<https://canadiangeographic.ca/articles/5-endangered-species-the-calgary-zoo-has-saved-from-extinction/>

<https://marmots.org/about-marmots/history-decline> (Vancouver Island Marmot)

Hanging On article and the Hindering Helping cards, plus Hanging On Worksheet are below.

Hangin On

In Indonesia, orangutans are fighting for survival. Extinction would not only deprive the world of a cuddly primate but also remove a vital link to man's past.

BY SIMON ELEGANT BALIKPAPAN – Time Asia News, 2001

Every day Carel Van Schaik heard the chain saws as gangs of illegal loggers cut through the trees across the river from his orangutans' forest habitat. And every day the fighting between Acehnese rebels and the army moved closer; mutilated bodies sometimes were found dumped in these very forests. Indonesia was literally falling apart, village by village, tree by tree, and that meant extinction was nigh for myriad species, among them Van Schaik's orangutans. Environmentalists once said the apes might be extinct in a matter of decades; their increasingly frantic warnings now spoke of just years. Orangutans need virgin forest, and even senior officials acknowledged that all virgin forest in Sumatra would probably be gone in five years. The last primary forest on neighboring Borneo would disappear in a decade, predicted Walhi, the country's leading environmental group.

The buzz of chain saws and those decomposing corpses were warnings that Van Schaik, and the orangutans he was studying, were running out of time. If these noble great apes were driven to extinction, as now seemed likely, that would mean more than the tragic passing of another of God's creatures, it would also mean losing some potential understanding of ourselves. For 25 years, the Duke University primatologist had been chasing orangutans through the swamps of Sumatra. Now he was starting to achieve startling new insights into some of our most fundamental questions: What made us men and not monkeys? When precisely did that divergence occur? And, even more intriguing, what lit the spark of learning and shared knowledge that eventually became mankind's bonfire of culture and science?

He already had part of the answer. Patient study had revealed that some orangutans were avid tool users, for example employing short sticks to shave stinging hairs from the fat-loaded fruit of the neesia tree. This was a skill that seemed taught by one generation to the next, not inherited. In other words, the orangutans had culture, previously the single greatest distinguishing mark of humanity.

But for conclusive proof, Van Schaik needed a control group of directly comparable orangutans living in the same ecological circumstances that still broke open the

fruit and plucked out a few accessible seeds, wasting most of the nutrition. His own group, he knew, had a much higher degree of cooperation in daily tasks such as food sharing and grooming. If his theory was right, the higher sociability that allowed orangutans to teach one another how to more efficiently access the fat-rich fruit seeds provided them with a huge evolutionary advantage over their less friendly cousins. That same evolutionary encouragement of cooperation among early humans, Van Schaik theorized, had been the mechanism that had separated us from beasts. To complete his study and expand our understanding of the world, he needed orangutans—wild orangutans, rather than the apes in captivity at preservation centers and zoos.

But because of the chaos the country has fallen into and the brutal economics of development, the orange apes were on the verge of a grisly extinction, in danger of becoming the first ape to disappear from the wild. Perhaps 5,000-6,000 survived on Sumatra, half the number that existed as recently as 1998. There are 10,000-15,000 on Borneo, a decline of one-third in the same period. "Orangutan survival totally depends on the survival of the tropical forest," says Birute Galdikas. "It's as simple as that." Galdikas has been studying orangutans since the late 1960s, when she was dispatched to Indonesia by Louis Leakey, the world-renowned anthropologist who, along with his wife Mary, laid the foundation for modern theories of human origins. Leakey's two other "angels"—sent out at the same time—were Dian Fossey and Jane Goodall. Goodall gained fame for her work with chimpanzees, detailing for the first time intercommunal warfare and cannibalism. Fossey, the subject of the Sigourney Weaver film *Gorillas in the Mist*, was instrumental in saving silverback gorillas from extinction.

Although all three women started out around the same time, the orangutans remain the least studied of the four great apes (there are two distinct species of chimpanzee) that are humankind's closest relatives, sharing some 97% of our DNA. In part that's a matter of numbers—there are thousands of chimpanzees in zoos in the U.S. alone, whereas orangutans barely exceed 100. But there is also a practical problem: chimps and gorillas are both essentially ground-dwelling group animals. Orangutans are solitary and spend most of their time in the high canopy of the rain forest, making even short-term tracking virtually impossible.

Their lifestyle does, however, make them the easiest apes for humans to identify with. Because of their more solitary nature, orangutans display a more contemplative intelligence than the often frenetic chimpanzee or the gigantic, seemingly dopey gorilla. One look into an orangutan's almost human, emotion-charged eyes, and there's no denying our intimate kinship.

Nobody knows this better than the six young women who are surrogate mothers to orangutan babies brought in for rehabilitation at the Balikpapan Orangutan Foundation on the west coast of Borneo. The orangutans, most of whom have been confiscated from illegal wildlife traders, some of them as far afield as Japan and Taiwan, are often in a state of shock, having just seen their mothers killed by poachers. "There's no difference between human babies and the orangutans," says Wiwiek, an open-faced 24-year-old surrogate mother dressed in her working clothes, a white jumpsuit and green rubber boots. "We have to feed them with a bottle, bathe them, put them in Pampers and sing them to sleep. It feels like taking care of one of your own."

Babies like Fiona need all the help they can get: only one in three survive. The six-month-old arrived only a few days earlier and sits pressed at the back of her cage, staring blankly out, her huge eyes numb with fear, clutching herself tightly and rocking back and forth ceaselessly. But with luck and good mothering, she too will be transformed within weeks or months into one of the scampering, mischievous brats swinging effortlessly through the air in the playground next door.

But these captive apes become intellectually dim cousins of their wild predecessors. "Orangutans are naturally the most intelligent of the great apes," says Willie Smits, a Dutch forester turned orangutan advocate. "They're so close to us, we can learn a huge amount about our own physiology, psychology and early origins." Smits talks enthusiastically of Van Schaik's research. The "spark" that enabled Van Schaik's particular group to use tools was a much higher level of sociability—sharing food, helping one another in tasks such as food collection—than is usual for orangutans. That in turn speaks volumes about how human cooperation was nurtured by natural selection, how hominids working together with their chipped flints to skin animal carcasses blossomed into the builders of pyramids and space shuttles.

The voluble Smits, a former high school wrestler, ticks off a list of new findings just beginning to reveal what we will lose if wild orangutans become extinct. Often dubbed the world's best field botanists, orangutans are also talented pharmacists, treating their illnesses with forest plants. Because of their similarity to humans, the benefits are obvious. Plagued by a splitting headache while walking in the forest, Smits remembered seeing a slumped female orangutan clutching her head and groaning, only to make what seemed to be a complete recovery after eating some flowers from a nearby bush. "I immediately went to a bush of these purple *fordia splendissima* and ate some of the flowers and within 15 minutes my headache was gone."

Still optimistic in the face of the overwhelming odds stacked against the orangutans, Smits boasts that he has traveled to Washington with "a letter of authorization from the Indonesian government in my hand to set up a debt-for-nature swap," whereby a portion of Indonesia's foreign debt would be paid off in return for the creation of a huge protected area in central Borneo of some 700,000 hectares. Considering the utter chaos in Jakarta, it is, at the very least, a highly optimistic plan.

Birute Galdikas is also trying to protect a larger area of forest in central Borneo, the much-abused Tanjung Puting National Park, the area she has been using for her research since the 1970s. In the past, Galdikas has often exploited her considerable fame to lobby Presidents and Prime Ministers. But with the collapse of authority in Jakarta, her focus has narrowed down to the communities living in and around what is left of the national park. They are both the source and solution to the problem. "These days it is impossible to distinguish the local community from illegal loggers," she says.

Beset by such seemingly unstoppable forces, the future looks very dark indeed for orangutans. So dark that even a primatologist like the affable Robert Shumaker of the National Zoo in Washington, who takes evident pride in his scientific objectivity, is overwhelmed by the sheer finality of the end they face. "My wife is six months pregnant and the idea that I may have to tell my son that I saw it happen, that we let this happen, we let them just disappear ..."

There is one, rather forlorn hope. Behind Shumaker a group of hooting sub-adolescent orangutans chases one another around a large cage, one of a series of such enclosures in which the 200 or so orangutans inhabiting this rehabilitation center live for five years as they are prepared for release into the wild. There are two other such programs releasing apes into Borneo's dwindling forests.

But even if the programs are successful—and scientists say the chances are as low as one in five—the orangutans that graduate are very different from their wild cousins. In the forest, orangutans spend eight years under the exclusive tutelage of their mothers, learning to distinguish among 4,000 different plants, absorbing the details of location and fruiting time of every tree in a 100-hectare range. And, yes, probably learning how to use certain types of tools, even if they haven't all solved the problem of gaining access to the fruits of the neesia tree.

Van Schaik, seeking to find that control group of orangutans to answer those great questions about men and monkeys that could only be answered here in the wild, crossed the Simpang-kiri river, persuading the illegal loggers to give him rides through unending kilometers of rotting stumps and splintered branches. He

was just a tourist, he told them, but had they by any chance seen any neesia trees still upright? He finally hit pay dirt in August of 1999. "On our last trip in," the lanky Van Schaik recounts, "the loggers said, yes, there are a few crooked trees left that they had missed. And when we found them, we saw that there were some fruits scattered around where the orangutans had dropped them with just one small piece broken off like in Borneo, the rest untouched, and I realized that these monkeys, just across the river from my orangutans, didn't get it. That was when I knew we had really discovered the beginnings of culture."

But the flash of triumph soon turned to ash. Soon after the momentous discovery, Van Schaik's friend of 20 years and chief collaborator, an Acehnese named Idrusman, was returning from Jakarta by bus one evening when anti-Jakarta fighters stopped the vehicle and singled out the non-Acehnese for execution. Idrusman made the mistake of speaking up for three Javanese colleagues with whom he was traveling. All four had their throats cut. Van Schaik abandoned his mission soon afterward. He now spends most of his time teaching at Duke University in North Carolina and has never been able to return to the Sumatra swamps that were so central to his life's work. He can't carry on his experiments because, he laments, the human-trained orangutans are "intellectual paupers from the dark ages." Short of a miracle, though, these dark-agers, thrust into small patches of remaining forest to bumble around, surviving by trial and error, will soon be all that remains of a once-proud, possibly cultured species.

Hanging On
Worksheet A

/ 30 marks

Name _____

[15 X2 marks each]

Read the news article with your partner, then discuss and answer the following questions.

1. After reading the opening paragraph, predict why the title "Hanging On" was a suitable choice for this article.

2. Explain the suggested meaning of the line in the second paragraph that reads: "If these noble great apes were driven to extinction...it would also mean losing some potential understanding of ourselves."

3. According to the article, what are some of the leading causes of orangutan decline in Indonesia?

4. "The orangutans had culture." Explain this statement in your own words and justify your answer with evidence from the text.

5. Why was it important for Van Schaik to study wild orangutans as opposed to the apes in captivity?

6. Explain how Van Schaik's orangutans were able to more efficiently access the fat-rich fruit seeds.

7. Why are orangutans studied less than gorillas and chimpanzees?

8. Describe a few ways in which orangutans share similar characteristics to humans. How are these ways different than chimps and gorillas?

9. Orphaned orangutans experience human-like treatment when they are rescued and put into captivity. Explain.

10. How does Smits attribute the socialization of orangutans to the sophisticated evolvement of human beings?

11. What are some of the things our society stands to lose should orangutans become extinct?

12. Galdikas has proposed to save the orangutan by protecting forests in central Borneo. What may hinder this plan?

13. When growing up in the wild, what responsibilities does the mother orangutan have in raising her baby?

14. Reflect on the statement on page 5 that reads: "That was when I knew we had really discovered the beginnings of culture."

15. Does the article's conclusion leave you feeling more optimistic or pessimistic about the future of the orangutan? Explain your thoughts using information from the article to support your answer.

Helping

Hindering