



# A THEMATIC LEARNING GUIDE TO LIONS

**Grade Level** Middle School      **Time:** 1 hour

**Overview:** This lesson is designed to be a thematic introduction to lions and their relationship to the geographical region of Africa as an educational and assessment tool. Students are introduced to the characteristics of lions, the geographical region of Africa, African climate, man's impact on wildlife, and key words associated with the lion and mathematical questions designed to enhance a student field trip to Out of Africa Wildlife Park.

*This lesson is courtesy of Stacy Mantle. For additional resources, visit <http://www.petsweekly.com>*

## Standards (Mcrel)

### Behavioral Studies [Grade: 6-8]

Understands that interactions among learning, inheritance, and physical development affect human behavior. Knows that human beings can detect a tremendous range of visual and olfactory stimuli and that the strongest stimulus they can tolerate may be more than a trillion times as intense as the weakest they can detect, but there are many kinds of signals in the world that people cannot detect directly.

### Mathematics Level III (Grades 6-8)

Understands how to break a complex problem into simpler parts or use a similar problem type to solve a problem. Uses a variety of strategies to understand problem-solving situations and processes.

### History Level II (Grades 5-6)

Understands the historical perspective. Understands that specific decisions and events had an impact on history. 3. Predicts how events might have turned out differently in one's local community if specific individuals or groups had chosen different courses of action.

### Language Arts (Grades 6-8)

Uses listening and speaking strategies for different purposes. Understands that language reflects different regions and cultures (e.g., sayings; expressions; usage; oral traditions and customs; historical, geographical, and societal influences on language) Uses descriptive language (e.g., color words; size words, such as bigger, smaller; shape words) 6. Understands historical influences on language ).

### Thinking and Reasoning Level III (Grades 6-8)

Understands and applies basic principles of logic and reasoning. Understands that when people have rules that always hold for a given situation and good information about the situation, then logic can help them figure out what is true about the situation.

### Science Level III (Grades 6-8)

Understands biological evolution and the diversity of life. Understands the concept of extinction and its importance in biological evolution (e.g., when the environment changes, the adaptive characteristics of some species are insufficient to allow their survival; extinction is common; most of the species that have lived on the Earth no longer exist).

## OBJECTIVES

Upon completion of activities, students will be able to:

- Describe characteristics of lions.
- Describe the characteristics of African climates.
- Identify Africa & related continents on global maps.
- Calculate measurements related to wildlife situations and processes.
- Identify the impact of humans on wildlife & environment.
- Understand terminology related to biology.

## Key Words

- Mammal
- Carnivore
- Sub-Saharan
- Africa
- Endangered
- Extinction
- Pride
- Species
- Subspecies
- Vulnerable
- Habitat
- Biology

## Materials

- Handout entitled **Classification of Vertebrates**
- Paper, pencils
- Colored pencils or crayons, chart to show color
- Handout on **Geography of Lions**
- Notes pad

## BACKGROUND INFORMATION AND SUMMARY

Nearly all wild lions live in **sub-Saharan Africa**. They prefer the grassy plains and open woodlands that allow for excellent hunting and easy defense of a territory. Lions are the only cats that live in groups, called **prides**, which are family units that may include up to three males, a dozen or so females, and their young. All of a pride's lionesses are related and female cubs typically stay with the group as they age. Young males eventually leave and may establish their own prides by taking over a group headed by another male.

There are 8 subspecies of lions (Asiatic lion, Barbary lion, West African lion, Masai lion, Katanga lion, Transvaal lion, and the Cape lion). Most lions live in Africa, but their numbers there are rapidly decreasing with a 30- 50% decline over the last twenty years. Estimates of the African lion population range between 16,500 and 47,000 living in the wild from 2002–2004, down from early 1990s estimates that ranged as high as 100,000 and perhaps 400,000 in 1950. Disease, habitat loss and conflicts with humans are the most significant threats to the species. Remaining populations are often geographically isolated from one another, which can lead to inbreeding and reduced genetic diversity which causes weakness in the species.

**Behavioral:** Only male lions boast manes. The male lion's primary goal is to defend their pride's territory. They mark the area with urine, roar and make low, rumbling noises to warn intruders, and chase away or fight rivals that encroach upon their territory. Female lions are the pride's primary hunters and they often work together to capture much larger mammals. Young lions do not help the pride hunt until they are about one-year-old. Lions will hunt alone if the opportunity presents itself, and are known to steal kills from hyenas or wild dogs.

**Scientific Name:** Panthera leo

**Size:** 48 inches high

**Weight:** 330-500 lbs

**Lifespan:** 13 years in the wild

## Theme and Module Variations for Various Levels

### MATH

- **Primary:** See worksheet
- **Middle:** Our lions each consume 25 lbs of meat three times per week. If beef costs \$5 per pound, how much would it cost to feed all 16 of our lions for one month?
  - A lion requires 1 acre per each lion in its pride. How many acres would a 10-member pride of lions require?
- **Secondary:** A lion must consume 75 lbs of meat per week. If a gazelle weighing 100 lbs is caught, how often would a lion have to eat to maintain his body weight?

### LANGUAGE ARTS

- **Primary:** See worksheet
- **Middle:** Safari means "travel" in Swahili. Like its meaning, the word conjures images of other places like Serengeti, Sahara, or Kilimanjaro. Write down five words that explain what you associate with the word Safari. Write a short description of a lion and compare it to that of a domestic housecat. How are the two similar? Different?
- **Secondary:** Ask students to discuss why lions may have been hunted into extinction.

### SCIENCE

- **Primary:** Animals often live in groups. Ask students to identify what type of group a lion lives in. (Pride)
- **Middle:** Ask students to read *The truth about lions* <http://www.cbs.umn.edu/lionresearch/> and identify new ways that people can live peacefully with lions.
  - Identify the Massai and how they are focused on living peacefully amongst lions.
- **Secondary:** A former royal reserve, India's Gir Forest, is the last home of the Asian lion subspecies.

### HISTORY

- **Primary:** See worksheet
- **Middle:** Assyrian kings took, kept and bred lions as pets as early as 850 BC. Monarchs and other people in power have also used lions as pets. Ancient Romans used African lions in the Coliseum, pitting them against gladiators or using them as executioners. How can we see history repeating itself? Give specific examples. (*Examples include: As early as the 1300's, African lions were features of exhibit for the elite in menageries, now known as zoos. As time passed by, menageries ceased to be exclusive displays for the rich and became more a public attraction, and in turn the demand for more enclosures for public animals were needed.*)
- **Secondary:** In Africa, lions can be found in savanna grasslands with scattered Acacia trees, which serve as shade. Their habitat in India is a mixture of dry savanna forest and very dry deciduous scrub forest. The habitat of lions originally spanned the southern parts of Eurasia, ranging from Greece to India, and most of Africa except the central rainforest-zone and the Sahara desert. Herodotus reported that lions had been common in Greece around 480 BC; they attacked the baggage camels of the Persian king Xerxes on his march through the country. Aristotle considered them rare by 300 BC. By 100 AD they went extinct. A population of Asiatic lions survived until the tenth century in the Caucasus, their last European outpost. Identify ways lions have adapted and migrated in world and the historical significance of lions.

### GEOGRAPHY

- **Primary:** See Worksheet
- **Middle:** Review the map of Masai-Mara located at <http://www.masai-mara.com/mmvmk.htm>. Identify how geography can influence the way people live with lions. Lions live in sub-saharan Africa. Ask students to give examples of Sub-Saharan Climates, Africa. Ask students to describe the climate of sub-saharan Africa.
- **Secondary:** Ask students to identify key characteristics of sub-saharan Africa and discuss the ways that the geography of the region impacts people who live there.

## Worksheet 1

**Part One:** Write down each word that comes to mind when you think of the word:

## Safari

### Teacher Notes: (10-15 minutes)

1. Tell students they will have two minutes to brainstorm and write down all the animals they can think of. Tell them they can be both general and specific. *(For instance, they can list specific types of animals or write descriptive words that would illustrate a safari (i.e., jeep, Africa, lion, khaki, etc.)*  
**NOTE:** Students who have difficulty writing quickly can be teamed up with another person. Students who want an extra challenge can make an alphabetical list.
2. When two minutes have passed, ask them if they want one more minute. If yes, give them one more minute to work. If not, move on.
3. Ask students to share their information.

## World Map

Identify the following continents on the map below: Africa, North America, South America, Asia, Europe, Antarctica, and Australia. Use a separate color to identify where lions can now be found and another color to identify their native territories.



## LION FAST FACTS

**Group:** Mammal

Order: Carnivore

**Height:** (to shoulder) = 4 feet (1.3 meters)

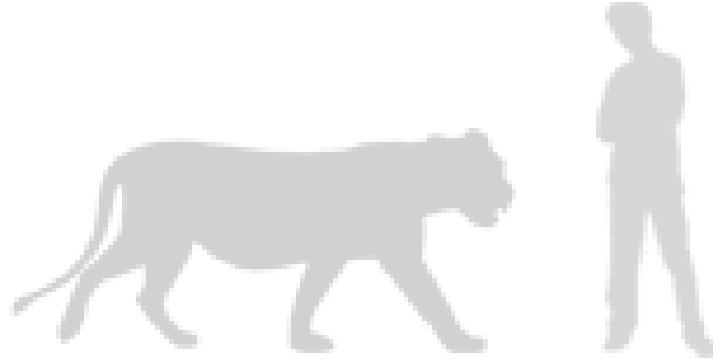
**Average life span:** 16 to 20 years

**Weight:** 300 to 500 lbs (120 to 226 kg)

**Group name:** Pride

**Protection status:** Endangered

**Size relative to a 6-ft (2-m) man:**



### Lazy Lions

Lions are the laziest of the big cats. They usually spend 16 to 20 hours a day sleeping and resting. They spend the rest of the day hunting, courting or protecting their territory. Lions keep in contact with one another by roaring. On a good day, they can be heard up to five miles away. The pride usually remains intact until the males are challenged and successfully driven away or killed by other males, who then take over.

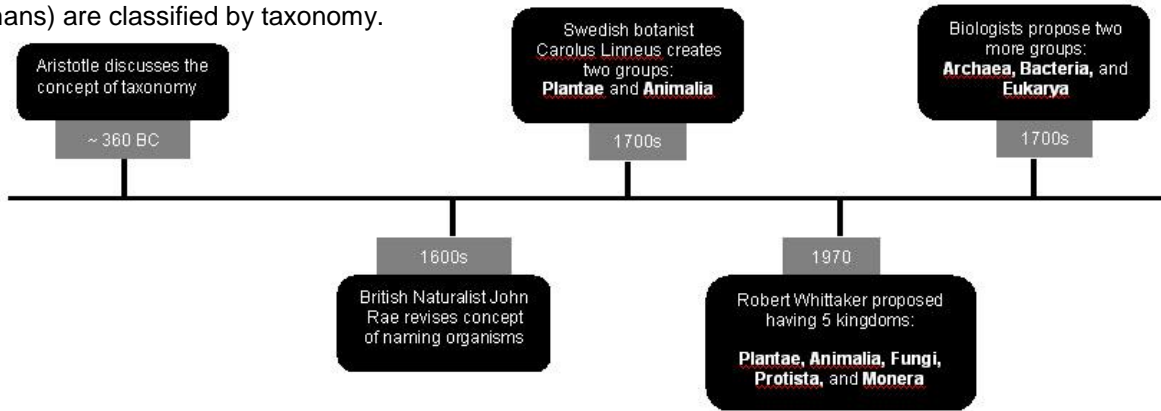
### Did you know...

- Not all lions live in prides. At maturity, young males leave the units of their birth and spend several years as nomads before they become strong enough to take over a pride of their own. They hunt by following other migrating herds at a distance; but the nomadic life is much more difficult, with little time for resting or reproducing.
- Most lions drink water daily if available, but can go a few days without it as long as it is eating. Lions in arid regions appear to obtain moisture from the stomach contents of their prey.


**Directions:** Write a short story in which you create a history for one of the animals you have seen today. Identify its past challenges, where it came from, what it thinks about when seeing all the people who stare at them. It does not have to be a true story – use your imagination and make up an entire history for the animal of your choice.

## Make Your Own Trading Cards

Taxonomy is the science of identifying and naming species and organizing them into systems of classification. All animals (even humans) are classified by taxonomy.



# The Lion



# Panthera Leo

## The Lion

**Order:** Vertebrates

**Family:** Mammal

**Genus:** *Panthera*

**Species:** *Panthera leo*

**Status:** Vulnerable

**Notes:**  
 Brave, Strong, Smart, Beautiful.  
 This is why the Lion is king of the jungle and the top of the food chain.

**Directions:**  
 Choose one animal that you have seen today at Out of Africa Wildlife Park. Make your own trading card for that animal.



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**Order:**

**Family:**

**Genus:**

**Species:**

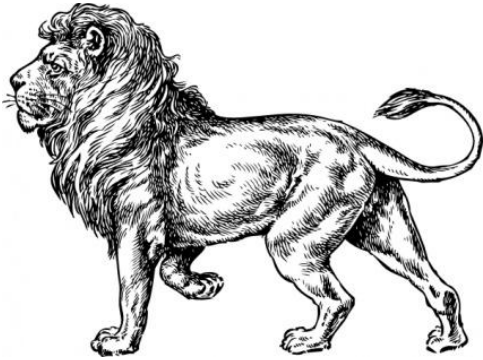
**Status:**

**Notes:**

### The Lion

Y G O L O I B B U S P A O E N  
 L I O N W L C L E L Q C V I O  
 F G I B C N H I A A B I X E I  
 W I R F D A C Y V M G R Q N T  
 V L K A B E R X N P M F R R C  
 K U X I P W R N Q X G A S J N  
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 S X W J I N X P M N A R F E E  
 A N A R A H A S B U S D E C I  
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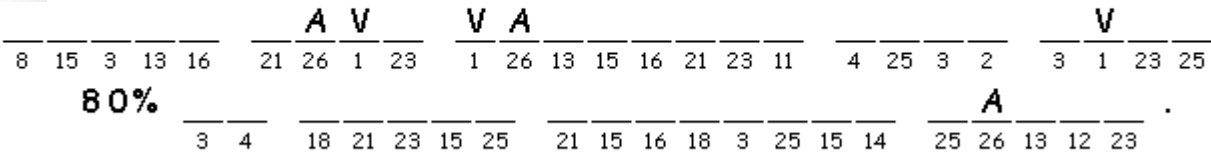
AFRICA  
 BIOLOGY  
 CARNIVORE  
 ENDANGERED  
 EXTINCTION  
 HABITAT  
 LION  
 MAMMAL  
 PRIDE  
 SPECIES  
 SUB-SAHARAN  
 SUBSPECIES  
 VULNERABLE



### Pride



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
26																					1				



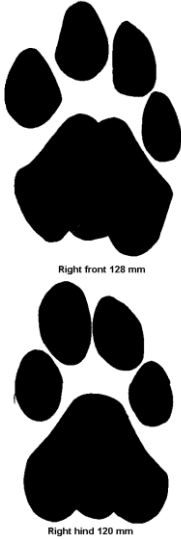
### ANIMAL TRACKS

DOMESTIC CAT TRACKS

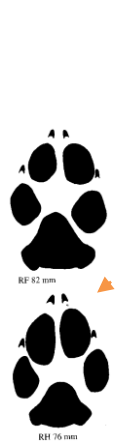


Since cats can retract their claws, they don't leave toenail marks on their tracks

LION TRACKS



DOG OR WOLF TRACKS



Dogs can't retract their claws, so they leave toenail marks on their tracks.





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## The Lion

A thematic approach to learning about animals - brought to you by Out Of Africa Wildlife Park in cooperation with PetsWeekly.

### Conclusion – 5 minutes

1. Ask students for any final observations.
2. Review the items in the sample questions to the right.
3. Make a list of questions that students ask about the different classes and encourage them to look up the answers in books or on the internet.
4. Tell students that this is an activity they can do on their own to test and challenge themselves.
  - a. Can they list more invertebrates the next time, or a more evenly-distributed list among the classes of vertebrates?

### Math Sample Questions

- ~ In 1999 there were 400 Asian lions. In 2007 there were 204 Asian lions. What is the rate of decline?
- ~ Lazarus must consume 25 lbs of meat (turkey, chicken and beef) three times per week. If a turkey weighs 18 lbs, how many turkeys must he eat each week?
- ~ The enclosures at Out of Africa are between 1-3 acres. How many acres is that per lion?

### Language Arts Sample Question

- ~ Identify three things that you learned about a lion today.
- ~ Write a short story with a lion as the main character.
- ~ Use the words mane and main in only one sentence.
- ~ Create a conversation between an elder Massai and a scientist.
- ~ Identify a reason why people may want to hunt lions and formulate a response to these people.

### Art and Music

The lion has been represented in many different cultures throughout the world. Identify which period and culture each of the pictures below may represent.

China  
Australia  
Rome  
Greece

### Science

- ~ The lion is considered to be a \_\_\_\_\_ species. (*vulnerable*)
- ~ The lion's only predator is a \_\_\_\_\_. (*human*)
- ~ Identify ways that the fate of the lion in the wild can be improved through science.

### Geography

- ~ On which continent do lions naturally live? (*Africa*)
- ~ How does geography affect the role of villages and their impact on lions?
- ~ How might geography affect relocation options of lions?