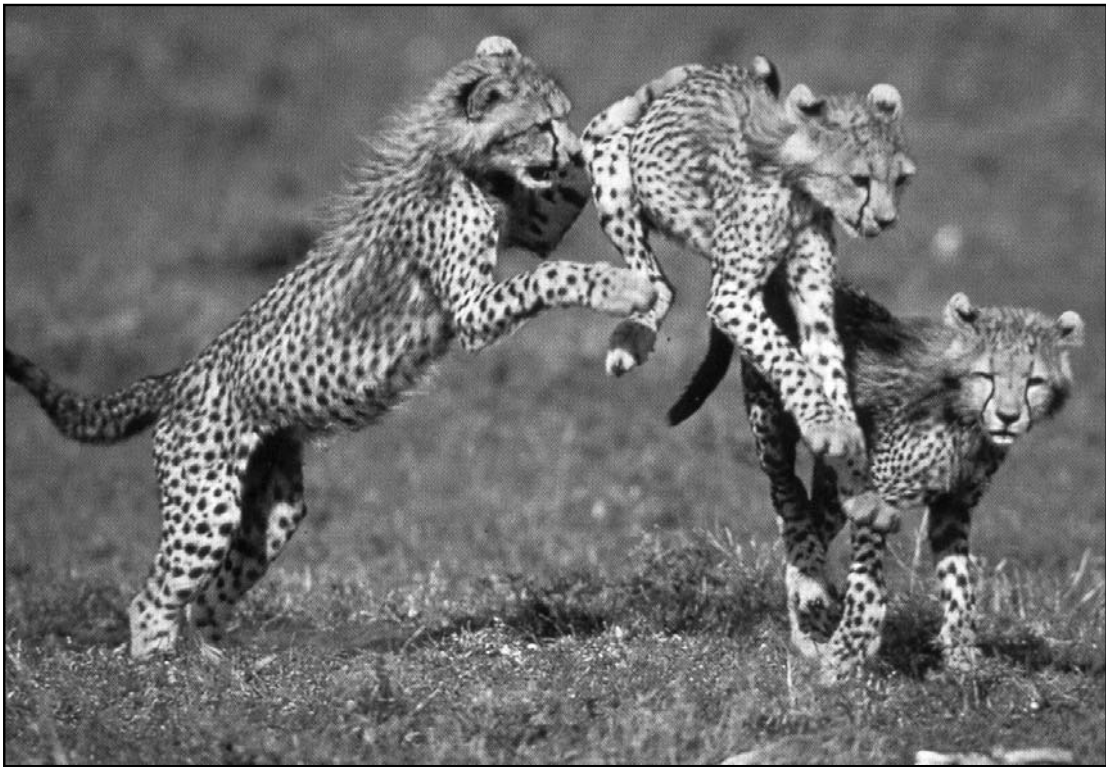


# Cheetah Biology

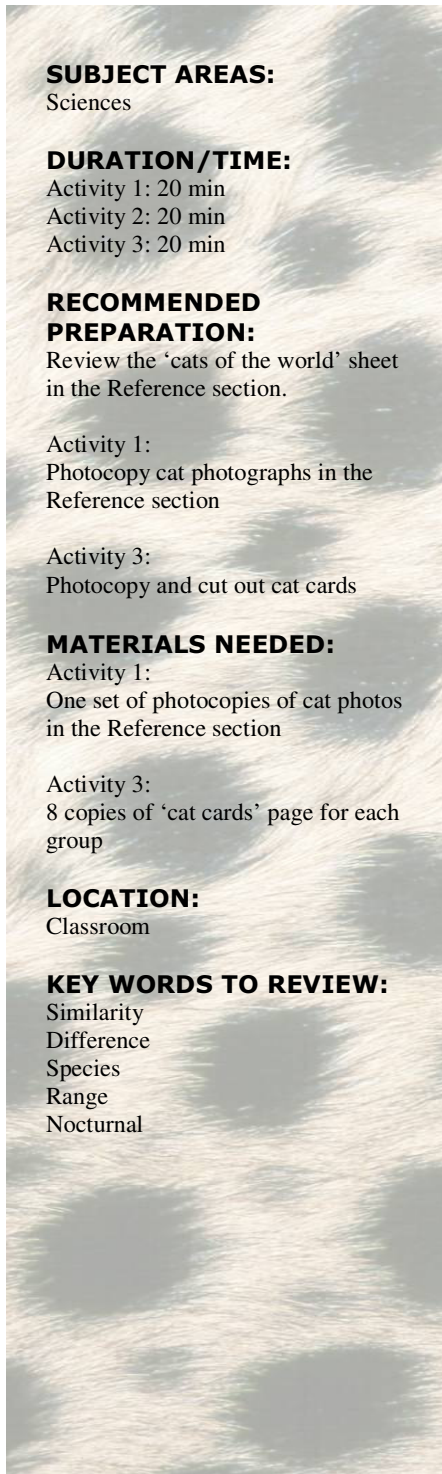


**CHEETAH  
CONSERVATION FUND**

## Cheetah biology

# CAT COMPARISONS I

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## OBJECTIVE:

Learners will study the cheetah by comparing and contrasting the cheetah to other members of the cat family

## LESSON

## ACTIVITIES:

### ACTIVITY 1:

Discussion on cheetah background, behaviour and history. Make a similarities and differences list and hold review discussion

### ACTIVITY 2:

Discussion of family tree  
Learners draw family tree

### ACTIVITY 3:

Snap game



## Teaching the Lesson

### Activity 1 - similarities and differences

Divide the class into groups of two or three. Using the pictures given in the Reference, have the learners identify similarities and differences between the six cat species. Also use the Cat Comparison table provided in this lesson.

Some examples of leading questions are offered below:

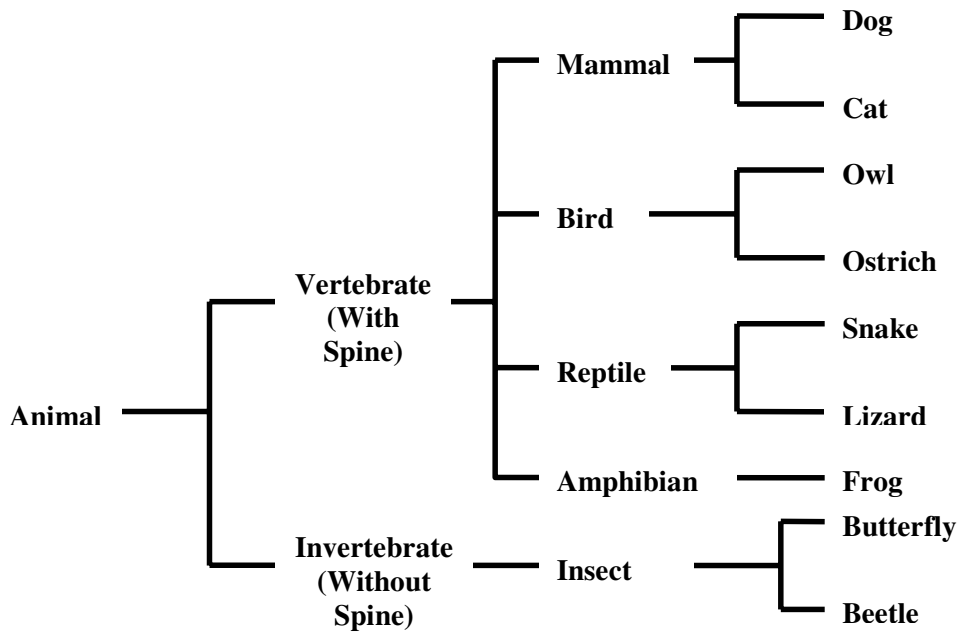
- Which cats look the same?
- Any similar patterns/shading? Body size? Body shape? Head size?
- Are their legs all the same size?

Let the learners write their observations on a sheet of paper headed “Similarities and differences.” Give the learners 15 minutes to complete their lists before asking for feedback. Ask each group for one similarity or difference from their list. Using the table of comparison on the following pages discuss with the learners the main differences and similarities between the six cat species.

### Activity 2 - family tree

Discuss the concept of a family tree (a method by which you show the relationship between different objects) with the learners by developing an example, like the one below in example 1, on the board with their input. Have the learners draw their own family tree of the cats using the similarities and differences previously identified. Give them another 15 minutes before working together to come up with the correct family tree.

### Example 1: Basic Animal Family Tree



### Activity 3 – snap game

Photostat (photocopy) the cards given so that you have 48 cards making sure you have 8 copies of all 6 cats. Divide the class into groups of four, and hand out a set of 48 cards to each group. Mix the cards and deal each learner in the group a hand of 12 cards. Starting with 2 of the four, start the game by placing each card face up, next to each other, so that all players can see them. The next two players in the group then place one card each on top of the two piles formed by the previous two players. At any time that these cards match, the learner, who calls “snap” first followed by the name of the cat, gets a point. Once all the cards have been dealt, the learner with the most points wins.

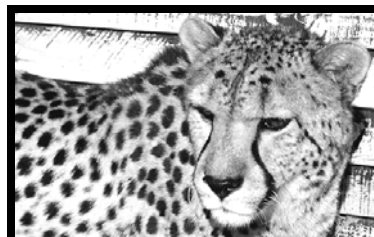
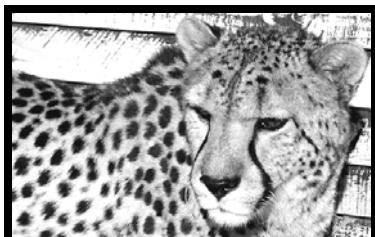
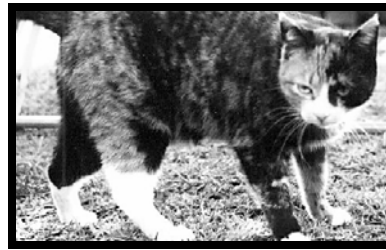
Have the learners assess themselves in the group as to whether they feel capable of moving up to the next level of the game. Use the second sheet of cards to produce 24 more cards. Remove half of the cards from the previous deck, making sure that you have four copies of each cat and add these to the 24 new cards. Play the games once again to see if the learners are still able to identify the different cats when they are in different positions. This game can be used to assess whether the learners can distinguish between the six cats based on their differences and similarities.







*CAT CARDS (Card setup for easier snap game)*





*CAT CARDS (Card setup for more difficult snap game)*





## Background – introduction to the cheetah (*Acinonyx jubatus*)

### History:

The cheetah is Africa's most endangered big cat and is a protected species in Southern Africa. It is considered endangered under the United States Endangered Species Act and is listed on CITES Appendix 1. (CITES: Convention on International Trade in Endangered Species is an international treaty that monitors trade in wild species. 'Appendix 1' indicates that the species is threatened by trade and is in danger of extinction.)

### Characteristics:

The oldest cat species on earth, fossil remains date back 3.5- 4 million years. The cheetah is a highly specialized animal adapted for speed, at a top speed of 110-120 km/h the cheetah is the fastest land animal. In appearance, cheetahs are of light build, making them the lightest of the big cats at 35-45kg for females, and 45-60kg for males. They have long streamlined bodies and long, slim legs. Their size and build is one of the ways that they can be distinguished from Africa's other spotted big cat, the leopard. The leopard, in comparison, is short and stocky, with a large, heavy bone structure and a lot of muscle mass. Cheetah have on average 3,000 solid black spots covering their entire body, together with their short tan fur this creates camouflage. Leopards have brown spots surrounded by incomplete black circles called rosettes on their backs and sides. One of the most prominent, distinguishing features of the cheetah is the tear marks running from their eyes to their mouths.

### Behaviour:

Cheetahs kill other animals for food; therefore we refer to them as predators. They are day hunters due to their speed and are mostly found in open savannah / grassland. They are normally solitary animals, sometimes forming groups amongst brothers. Mothers will spend up to two years with their young, teaching them how to hunt and to avoid other predators, which is not an instinct for a cheetah. Due to their slight build, they prefer to run from a threat, so we refer to them as non-aggressive. The cheetah is the only predator that has not been known to attack humans in the wild.







Table 1: Cat Comparison: general information

	<b>Cheetah</b>	<b>Leopard</b>	<b>Lion</b>	<b>Caracal</b>	<b>Tiger</b>	<b>Domestic Cat</b>
<b>Scientific name</b>	<i>Acinonyx jubatus</i>	<i>Panthera pardus</i>	<i>Panthera leo</i>	<i>Felis caracal</i>	<i>Panthera tigris</i>	<i>Felix domesticus</i>
<b>Distinguishing features</b>	<ul style="list-style-type: none"> <li>• Long slender body</li> <li>• Tan coat with solid black spots</li> <li>• Black “tear marks” on face</li> <li>• Small head</li> <li>• Amber eyes</li> <li>• Semi-retractable claws</li> </ul>	<ul style="list-style-type: none"> <li>• Largest spotted cat, short and stocky, muscular</li> <li>• Coats marked with rosettes</li> <li>• No “tear marks”</li> <li>• Large head, powerful jaw</li> <li>• Green eyes</li> <li>• Retractable claws</li> </ul>	<ul style="list-style-type: none"> <li>• Largest African carnivore</li> <li>• Uniform tawny sandy coat</li> <li>• Males have long mane</li> <li>• Tail sometimes black on tip</li> <li>• Retractable claws</li> </ul>	<ul style="list-style-type: none"> <li>• Long, slender body</li> <li>• Yellow-grey to reddish-brown coat</li> <li>• Short tails, tapered</li> <li>• Ears narrow and pointed</li> <li>• Long black tufts on ears (4.5 cm)</li> <li>• Hind-legs longer than forelegs</li> <li>• Retractable claws</li> </ul>	<ul style="list-style-type: none"> <li>• Largest of all cats</li> <li>• Black stripes on an orange coat</li> <li>• Males have prominent ruff / collar</li> <li>• Retractable claws</li> </ul>	<ul style="list-style-type: none"> <li>• Belong to the small cats</li> <li>• Variety of colours and patterns</li> <li>• Retractable claws</li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• Total length: 180-220 cm</li> <li>• Adult body length: 112-134 cm</li> <li>• Tail length: 60-80 cm</li> <li>• Shoulder height: 73-80 cm</li> <li>• Weight: 30-45 kg(F), 45-60 kg(M)</li> </ul>	<ul style="list-style-type: none"> <li>• Body length: 91-243 cm</li> <li>• Tail length: 68-110 cm</li> <li>• Shoulder height: 70-80 cm</li> <li>• Weight: 17-60 kg(F), 20-90 kg(M)</li> </ul>	<ul style="list-style-type: none"> <li>• Total length: 230-270cm (F), 250-330 kg(M)</li> <li>• Tail length: 100 cm</li> <li>• Shoulder height: 100 cm(F), 120 cm(M)</li> <li>• Weight: 110-152 kg(F), 150-222 kg(M)</li> </ul>	<ul style="list-style-type: none"> <li>• Body length: 60-92 cm(F), 80-105 cm(M)</li> <li>• Tail length: 20-35 cm</li> <li>• Shoulder height: 40-50 cm</li> <li>• Weight: 11-15 kg(F), 13-20 kg(M)</li> </ul>	<ul style="list-style-type: none"> <li>• Body length: 119-170 cm(F), 170-290 cm(M)</li> <li>• Tail length: 53-119 cm</li> <li>• Shoulder height: 85-124 cm</li> <li>• Weight: 75-300 kg</li> </ul>	<ul style="list-style-type: none"> <li>• Weight: 3-5 kg</li> </ul>
<b>Range</b>	Africa: 26 countries  Iran: 200 individuals	Africa: widely dispersed  Also in South Asia, Far East, and Arabia	Africa; Southern/Eastern  Few in Asia	Africa, Asia, Turkistan, Northwest India, Arabia	Not found in Africa  Found in India, China, and Indonesia	Found world-wide where humans have settled
<b>Habitat</b>	Grasslands, savannahs, woodlands, bush lands, hill country	Very adaptable – woodlands, lowlands, forests, mountains, savannahs, dry steppes	Grassy plains, arid woodlands, semi-deserts (not in forests)	Wide range from open savannah and woodland to semi-arid areas.  (Not found in forests)	Not found in open habitats, they tend to live in a variety of forests and mangrove swamps requiring cover and water	Human settlements
<b>Period of activity</b>	Hunt early morning, late afternoon	Nocturnal and diurnal	Nocturnal and diurnal	Mostly nocturnal, will be active during the day	Nocturnal	Mostly nocturnal
<b>Threats to humans</b>	<i>Not a threat</i>	<i>Can and do attack humans</i>	<i>Are a threat</i>	<i>Are not a threat</i>	<i>Are a threat</i>	<i>Are not a threat</i>

## Cheetah biology

# CAT COMPARISONS II

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**SUBJECT AREAS:**

Sciences

**DURATION/TIME:**

Activity 1: 45 minutes

**RECOMMENDED PREPARATION:**

Activity 1:

Make photocopies of the cat tracking cards and cut out. Also, photocopy the incomplete field guides to be given to each group.

Prepare your classroom into divided habitats and disperse the cat tracking cards (clues) around the designated habitats.

**MATERIALS NEEDED:**

Activity 1:

Photocopies of the cat tracking cards and incomplete field guides.

**LOCATION:**

Classroom

**KEY WORDS TO REVIEW:**

Species  
Habitat  
Track  
Cub  
Diet  
Threat

**OBJECTIVE:**

For learners to gather a broader understanding between the differences of the cat species

**LESSON****ACTIVITIES:****ACTIVITY 1:**

A discussion and game rules will begin the activity. Learners will participate in an energetic activity in the classroom. Learners in groups will search 'habitats' to look for clues (cat tracking cards) of their animal and fill in their incomplete field guide cards. At the end of the lesson, groups will present their findings to the class.



### *Learning Outcomes*

This activity is designed to reinforce the differences between the cats. Learners will track the lion, leopard, cheetah, caracal, tiger and domestic cat through a simulated habitat, learning about each individual animal as they progress through the activity. They will also learn how to use and design field guides of their own.

### *Teaching the Lesson*

Note that complete field guides are provided to assess the work of the learners.

### *Activity 1 - track a cat*

(adapted from Cincinnati Zoo's "Track my cat" activity)

For this lesson the educator needs to adapt the classroom or the outdoor environment into a series of "habitats" suitable to each species of cat. Divide the area (the teacher can decide which size) into four sections designated for a savannah, mountainous area, forest and urban settlement. These can be shown as separated simply by using some string to mark off each area or placing representative props within the areas (to show trees, grass, bushes, rocks, etc). Use a sign to show what each area is to represent (savannah, forest, etc).

Each cat has six different cards with information about that species. These cards can be copied if you choose. Distribute the Cat Tracking Cards throughout the classroom in their respective habitat area as follows:

**Savannah** - Lion, cheetah, leopard, caracal  
**Forest** - Tiger, caracal, leopard  
**Mountain** - Leopard  
**Urban Settlement** - Domestic cat



There should be three sets of cards copied for the leopard, two for the caracal and one each for the cheetah, lion, tiger and domestic cat. Place one set in the above areas. It is more fun if the cards are spread out through different levels of the room rather than simply on the floor. For example, lion and leopard can sometimes be found in trees, cheetah will try to hide in the shade of trees and bushes and domestic cats can be found everywhere within the urban settlement.

Divide the class into six groups. Each group will track one of the cats through one of the environments. Explain that the learners are scientific research teams with the task of finding out more about these cat species. They are going to create a field guide to help identify these cats. A field guide is a booklet designed to help identify animals from a picture with a brief description, including habitat, range, diet and behaviour so that the possessor of the guide can learn more about the animal they have seen. Learners only know what each cat looks like. Even the name of the cat is unknown. The learners need to follow, or track, the cats to discover more about them. Cat Tracking Cards have been distributed throughout the room in the specific location where people have spotted the cats. The goal is for each group to collect all six of their Cat Tracking Cards, identify their cat, and create a field guide using the attached field guide formats.

Assign each group of scientists a different species of cat to track; each group receives an incomplete field guide to their cat, which only gives information about the appearance of the cat, including an outline of its body. As the blanks indicate on the incomplete field guides, the learners need to discover their cat's period of activity, diet, social behaviour, hunting behaviour, reproduction, etc. Tracking is carried out in the following way: Learners move through the room looking for the tracking cards which match their cat's physical description. Although there is other information on the tracking card, the only way the learners can be certain that the card applies to their cat is to match it with the description on the provided Field Guide. Each group should collect six cards specific to their cat. If a learner finds a card that describes a cat other than their own, they should put it back in the exact same spot where they found it! However, if they find one of the blanks that states an unidentified cat was spotted, they can pick it up.







Once the learners have found all six cards, they should come to the teacher. The teacher will help the learners identify their cat by name through use of the Table of Comparisons found in the Cat Comparisons I activity. After tracking is complete and groups are settled, the group must take the information from their cards and fill in their Field Guide for their cat. They must write as neatly as possible so that other learners can use this as an identification guide. Explain that hunting behaviour will include the time of day, how the cat hunts, etc.

When each group has finished their Field Guide, have each group present their cat to the classroom. They should explain where their cat lives and what it eats as well as aspects of reproduction, hunting, etc. After learners present their cats, encourage them to make comparisons between cats. Discuss differences and similarities between some or all of the categories listed in the Comparison Tables. Finally, using the group's field guides, compile a class field guide of the cats.









Field guide cards

Lion Set: cat tracking cards

<p>A group of adults: both male and female seen lying under a tree</p> 	<p>Seen feasting on a kill of large antelope during the night</p> 	<p>Group of females seen during the day stalking a kudu, finishing off with a short chase bringing the prey down</p> 
<p>Group of females seen with a litter of four cubs, about 6 months old, feeding on a rabbit</p> 	<p>Young male of about 5 seen attempting to court a female</p> 	<p>Confronted by a large male, growling and hissing</p> 







Cheetah Set: cat tracking cards

<p>Solitary female spotted under a bush</p> 	<p>Female with a litter of three young cubs seen chasing down an impala at high speed during the early morning</p> 	<p>Young male of about two years seen courting a female</p> 
<p>Pair of males seen stalking a springbok during the late afternoon</p> 	<p>Confronted a solitary male, which ran away</p> 	<p>Mother seen leaving cubs of about 18 months</p> 











*Leopard Set: cat tracking cards*







Seen with kill up a tree 	Seen at night pouncing on a antelope and killing by strangulation 	Female seen with two cubs during the day 
Young male of about 3 years seen courting female 	Mother seen leaving cubs of just under two years of age 	Confronted by a solitary male, which attempted to attack 

*Tiger Set: cat tracking cards*







Solitary male seen stalking and pouncing on a wild pig 	Group seen sharing a meal at night 	Seen stalking a fellow scientist 
Seen dragging a deer under cover at night 	Young male of about 5 years seen courting female 	Mother seen leaving her cubs of about 2 years of age 



*Domestic Cat Set: cat tracking cards*

<p>Small cat of indeterminate colour seen playing with a mouse</p> 	<p>Black and white cat with a litter of four kittens seen playing in a garden</p> 	<p>Small ginger tabby seen killing a small bird</p> 
<p>Young male of about one year seen courting female of similar age</p> 	<p>Small grey, long haired cat seen playing with a group of children</p> 	<p>Small black cat seen pouncing on locusts in a suburban field</p> 

*Caracal Set: cat tracking cards*

<p>Mother seen leaving cubs of one year of age</p> 	<p>Seen pouncing on a bird in flight at night</p> 	<p>Solitary male seen walking at night</p> 
<p>Seen taking baby antelope up a tree</p> 	<p>Ran away when approached by fellow scientist</p> 	<p>Young male of about 14 months seen courting female</p> 



Incomplete Field Guide Sheets



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** This large spotted cat is short, stocky, and muscular. The coat is marked with brown spots surrounded by black. The head is large with a powerful jaw.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

\_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

\_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** This large cat has a long, slender body with a tan coat and solid black spots. The head is small with tear marks running from the corner of the eyes to the mouth and amber eyes.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

\_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

\_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** The largest of all cats has black stripes on an orange coat, with males having a prominent fur collar.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** This medium sized cat has a long slender body with a yellow-grey to reddish-brown coat. Their tails are tapered, and ears narrow and pointed with long black tufts. The hind legs are longer than the forelegs.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** This small cat has a variety of coat patterns and colours.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_



**Your Cat's Name:** \_\_\_\_\_

**Appearance:** This large cat has a uniform tawny / sandy coat with some having a black tip on their tails. The males have a long mane.

**Habitat:** \_\_\_\_\_

**Diet:** \_\_\_\_\_

**Hunting Behavior:** \_\_\_\_\_

**Social Behavior:** \_\_\_\_\_

**Age of Sexual Maturity:** \_\_\_\_\_

**Threat to Man:** \_\_\_\_\_





ANSWERS: Complete Field Guides



**Your Cat's Name:** Cheetah (*Acinonyx jubatus*)

**Appearance:** This large cat has a long, slender body with a tan coat and solid black spots. The head is small with tear marks running from the corner of the eyes to the mouth and amber eyes.

**Habitat:** Savannah

**Diet:** Small antelope

**Hunting Behavior:** Diurnal hunter. Stalks then chases at high speed. Ends with a trip and strangle.

**Social Behavior:** Solitary cat, with some males forming coalitions. Mother leaves cubs at about 18 months.

**Age of Sexual Maturity:** Two years of age

**Threat to Man:** Are not a threat to man



**Your Cat's Name:** Leopard (*Panthera pardus*)

**Appearance:** This large spotted cat is short, stocky, and muscular. The coat is marked with brown spots surrounded by black. The head is large with a powerful jaw.

**Habitat:** Savannah, Forest, Mountain

**Diet:** Antelope

**Hunting Behavior:** Nocturnal, will pounce on prey and kill by strangulation. Will take kill up a tree.

**Social Behavior:** Solitary except with cubs, mother generally leaves cubs around 2 years of age.

**Age of Sexual Maturity:** About three years

**Threat to Man:** Are a threat to man



**Your Cat's Name:** Tiger (*Panthera tigris*)

**Appearance:** The largest of all cats has black stripes on an orange coat, with males having a prominent fur collar.

**Habitat:** Forest

**Diet:** Wild pig and deer

**Hunting Behavior:** Nocturnal hunter, stalking and pouncing on prey

**Social Behavior:** Generally solitary, will sometimes share a meal. Mother leaves cubs at about two years of age

**Age of Sexual Maturity:** Around five years

**Threat to Man:** Are a threat to man



**Your Cat's Name:** Caracal (*Felis caracal*)

**Appearance:** This medium sized cat has a long slender body with a yellow-grey to reddish-brown coat. Their tails are tapered, and ears narrow and pointed with long black tufts. The hind legs are longer than the forelegs.

**Habitat:** Savannah, Forest

**Diet:** Birds and small antelope

**Hunting Behavior:** Nocturnal hunter, able to pounce on a bird in flight. Will take its kill up a tree.

**Social Behavior:** Solitary cat, mother leaves her young about one year of age.

**Age of Sexual Maturity:** About 14 months

**Threat to Man:** Are not a threat to humans



**Your Cat's Name:** Domestic Cat (*Felix domesticus*)

**Appearance:** This small cat has a variety of coat patterns and colours.

**Habitat:** Urban settlements, towns

**Diet:** Small animals including mice, birds, and insects. Domestic cat food.

**Hunting Behavior:** Stalk and pounce, will play with food. Nocturnal and diurnal

**Social Behavior:** Mostly solitary, but will form social groups

**Age of Sexual Maturity:** About one year

**Threat to Man:** Is not a threat to man



**Your Cat's Name:** Lion (*Panthera leo*)

**Appearance:** This large cat has a uniform tawny / sandy coat with some having a black tip on their tails. The males have a long mane.

**Habitat:** Savannah

**Diet:** Mainly large antelope

**Hunting Behavior:** Nocturnal and diurnal hunter. Stalking as close as possible, finishing off with a short chase. Jumps on back to bring down prey.

**Social Behavior:** Social animal, lives in family groups (prides).

**Age of Sexual Maturity:** Males reach maturity at about 5 years.

**Threat to Man:** These cats are a threat to man.

## Cheetah biology

# ADAPTATIONS

**SUBJECT AREAS:**

Sciences

**DURATION/TIME:**

Activity 1: 10 min

Activity 2: 30 minutes

Activity 3: 45 minutes

Experiment: 30 minutes

**RECOMMENDED PREPARATION:**

Activity 2: Gather supplies needed  
And make photocopies

Activity 3: Gather materials, insects  
(all the same kind), make  
photocopies and prepare your  
answer sheet.

**MATERIALS NEEDED:**

Activity 1:  
Background sheet

Activity 2:  
All supplies listed under 'build a  
cheetah' and photocopies of  
worksheet

Activity 3:  
Insects for pair use  
Materials listed  
Backyard adaptations worksheet  
copied (2 pages)

Experiment:  
Photocopy experiment worksheet

**LOCATION:**

Classroom

**KEY WORDS TO REVIEW:**

Adaptation  
Endoskeleton  
Exoskeleton  
Semi-retractable  
Rudder  
Variables  
Manipulate  
Investigate

## OBJECTIVE:

Learners will understand and  
investigate animal adaptations.

## LESSON

## ACTIVITIES:

**ACTIVITY 1:**

Discussion: what is adaptation?  
(use 'background' sheet on pg. 38)

**ACTIVITY 2:**

'Build-a-cheetah' hands-on  
discussion and worksheet on cheetah  
adaptations

**ACTIVITY 3:**

Backyard adaptations: learners  
investigate insects and complete a  
worksheet on their findings

**EXPERIMENT:**

Using the backyard adaptations  
information, learners form a  
hypothesis



## Learning Outcomes

In this activity learners will learn about the adaptations of animals and the role these adaptations play in their survival. Cheetah adaptations are discussed using analogous objects and learners are given the opportunity to discover adaptations of backyard insects.

## Teaching the Lesson

### Activity 1 – Discussion on adaptations

Animals come in all different shapes, sizes and colours. These differences make each species or individual member of a species especially adapted for success in a different habitat or place within the habitat.

Use the following activity to begin a discussion with the learners on adaptations. To help learners understand the great diversity of life forms found in nature, generate a list of species with the colours and shapes listed below. Ask learners to come up with as many species as possible. Some examples are listed. Ask the learners why they think the animals have these adaptations. Try to draw a link to habitat.

Black (penguins, black wildebeest)  
Green (plants, grasshoppers)  
Striped (tiger, zebra)  
Fur (mammals)  
Short tail (hyena, wild dog)  
Short legs (warthog)  
No legs (snakes, whales)

Grey (elephant)  
Spotted (cheetah, leopard, giraffe)  
Wings (birds)  
Gills (fish)  
Long tail (cheetah, lion)  
Long legs (giraffe, antelope)

### **What is an adaptation?**

Animals are designed to survive in particular habitats. Just as we might try to guess where people of different cultures are from by observing the way they dress, talk and behave, we can tell a lot about an animal's habitat by observing its behaviours and appearance. Simply explained, an adaptation is a physical or behavioural characteristic that helps an animal survive in its habitat. Those best adapted to the conditions in which they live are more likely to survive and reproduce. For example, take a cheetah with solid black spots. The spots help to hide them in the shade of bushes and trees, making it harder for other predators, which are a threat to the survival of the cheetah, to see them.

Use the following lesson to teach learners the significance and benefit of adaptations using the cheetah and its adaptations.





## Activity 2 - Build-A-Cheetah: built for speed

Explore with your learners the special body parts and adaptations cheetahs have that allow them to run so fast. Using supplies listed below and the adaptation fact sheets and diagrams, discuss with the learners the various adaptations of the cheetah. Next to each of the supplies listed is the body part and adaptation it represents. Go through items one by one and explain why each is an important piece to include in the cheetah. You may want to put up a picture of the cheetah to help learners visualize each part.

Supplies	Body Part	Adaptations	Function
Paper airplane	Long, thin body	Aerodynamic build	Speed
Running shoe / takkie	Paws	Semi-retractable claws	Better traction for running
Long, medium, short sticks	Legs	Long legs	Bigger stride
Piece of wire	Spine	Flexible spine	Increased stride length
Picture of a cheetah	Body / skeleton	Thin and light	Increased speed
Long piece of string	Tail	Long and narrow	Balance and steering
Paper heart	Heart	Strong, enlarged heart	Increased oxygen supply to muscles
Binoculars (two toilet rolls tied together can substitute)	Eyes	Enhanced vision	Vision of 5 km
Sunglasses	Face markings	Tear marks on eyes	Protect eyes from sun's glare

### Paper airplane:

Throw it into the air and watch it fly. The cheetah has a long, thin body to create less resistance to wind while running, just as a paper airplane flies easily through the air. Now crumple the paper and throw it; it will not fly like the airplane. Animals that move quickly through the air like birds or through the water like fish are streamlined. Cheetahs' long, thin bodies help them to run so fast.

### Running Shoe/takkie:

What type of shoe? (*Running shoe / takkie / sneaker*)

When do we wear these shoes? (*Running / sport / exercise*)

Why do we wear these shoes for these activities and not other shoes? (*Rough sole with grooves. Can slip easily with a smooth sole. The rough sole provides better grip decreasing the chances of slipping and falling*)

Do you think it will aid a cheetah to have such an adaptation providing grip?

(*A cheetah's paw has two adaptations to grip: the non-retractable claws, which can dig into the ground and the grooves on the pads which work similar to the treads on a car tyre*)

### Sticks:

Ask learners which sticks they would use for a cheetah's legs. Long legs increase the stride of a cheetah, allowing it to cover a greater distance in less time.



*Wire:*

Bend and straighten the wire to show how flexible it is. This represents the cheetah's spine. The cheetah has a very flexible spine, which allows the body to stretch out in a run. Together with the long legs, this gives the cheetah a stride of 8m (pace out 8m).

*String:*

What is a rudder? The cheetah's tail acts like a rudder helping the cheetah turn while running. The cheetah uses its tail like we use handle bars on a bike to steer.

*Heart:*

What is the function of your heart? (*Pump blood with oxygen to your muscles*)  
When you are active, would you need more to keep muscles working? (*Yes*)  
Why do you get tired when active? (*Not enough oxygen getting to the muscles.*)  
Do you think it will take a lot of oxygen to run at 120km/h? (*Yes*)  
Therefore the cheetah has an enlarged heart to help it run that fast.

*Binoculars:*

If you are a springbok, are you going to live near a cheetah or far away? (*Far away*)  
What do we use to see things that are far away from us? (*Binoculars*)  
Do you think that it would be an advantage to a cheetah to be able to see far? (*Yes, will be able to see where food is / other predators are*)  
Cheetahs' eyes work like a pair of binoculars (binocular vision), allowing the cheetah to see very far (5 km). Use a landmark 5 km from the school that the learners all recognize to explain to them just how far 5km is. Cheetahs will be able to see a bird at that distance.

*Sunglasses:*

Due to its speed a cheetah has to hunt by day in order to clearly see where it is going. At a cheetahs active times, early morning / late afternoon, the sun is low on the horizon, often resulting in the cheetah looking directly into the sun. When you look into the sun can you see clearly? Do you think this would be good for the cheetah while hunting and running fast? What do we use to protect our eyes from the sun? (*Sunglasses*) What do you think are the cheetah's sunglasses? (*Tear marks*)  
The colour black absorbs light, attracting the glare of the sun below the eyes, not directly into the eyes.

**Assessment:**

Using both of the following activities, you can assess the learners' understanding of the lesson as well as their ability to access information from a variety of sources.



*Worksheet - built for speed*

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Using the paragraph and diagram on the adaptations of a cheetah and what you have learned from the previous activity, fill in the blanks to show the relationships between structure, adaptation and function.

STRUCTURE	ADAPTATION	FUNCTION
Tail		
Body		
Paws		
Spine		
Heart		

**Adaptations of a Cheetah for Speed:**

The cheetah is the fastest animal on land, with a maximum speed of 110 - 120 km per hour. Running is the cheetah's main form of defence; its speed allows it to hunt and escape from danger.

The cheetah has many adaptations, which help it to run so fast. The cheetah has a very light skeleton and does not have a lot of muscles. The cheetah's body is thin and streamlined. The leg bones are longer than other cats and cheetahs run on the tips of their toes, giving them a bigger step. The cheetah's spine also can bend a lot more than other cats; this also allows them to increase the size of their steps by stretching their body out. Their hip bones can turn where they are attached to the rest of the skeleton; this allows them to stretch their hind legs out further. All these adaptations give the cheetah a stride of 8 meters while running at full speed. The cheetah's long, narrow tail helps it to keep its balance and steer around corners. The feet give them better grip on the ground to stop the cheetah from slipping while it is running. This grip is provided by grooves on the cushions of the feet as well as the claws which cannot be pulled into the paw completely (we say that they are semi-retractable). It takes a lot of energy for the cheetah to run that fast. It is the oxygen in their blood that provides that energy. The cheetahs have a very big heart and lungs to make sure that they get enough oxygen to their muscles while running to keep up their energy.



Answer Key for worksheet – built for speed

STRUCTURE	ADAPTATION	FUNCTION
<b>Tail</b>	Long and narrow	Balance and steering
<b>Body</b>	Slender, long-legged, streamlined, light	Less wind resistance, and longer stride, therefore increased speed
<b>Paws</b>	Semi-retractable claws Grooves in pad	Better traction for acceleration and faster movement
<b>Spine</b>	Flexible	Increases the stride by allowing the body to stretch out further
<b>Heart</b>	Enlarged	Increased oxygen supply to muscles





### Activity 3 – backyard adaptations

#### **Procedure:**

In this activity, learners will investigate adaptations using a specimen (insect) from the school's backyard and apply the knowledge previously attained through the cheetah adaptations to give an informed opinion as to the purpose of these adaptations. The learners will also practice their skills at scientific drawing.

Select your insect or other invertebrate in advance of this lesson and research its traits and behaviours. This will become the answer key to the learner worksheet.

#### **Materials:**

Be sure to have enough insects (or other invertebrates) for the learners to investigate, one each or in groups of two to three, collected from the pupils' backyard or the schoolyard.

- Container for the insect to be kept in for easy observation (A small transparent bag, plastic container with a clear top, or a plastic Petri dish)
- One piece of white paper
- A spoon and small paintbrush or stick
- A metric ruler
- A hand lens if available

The lesson can be easily adapted to use other equipment if any of the above are not available, or simply make sure the learners collect large enough insects for easy observation by the naked eye. If time allows, it is encouraged that learners spend many days on this activity, which will enable them to create a sound and beneficial experiment.



Worksheet - backyard adaptations

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Insect: \_\_\_\_\_

**Introduction Activity:**

In this activity, you will learn some important things about the anatomy and behaviour of your insect. You will also learn how to handle it and that it will not harm you.

The knowledge and skills you acquire in this activity will be of help to you when you design and conduct your investigation in the second part of this activity.

**Procedure:**

Using the spoon and the brush, place two or three insects in the container. Gently work with the insects in order to answer the following questions.

1. What is the length in millimetres of the shortest insect? \_\_\_\_\_ mm  
How long is the longest? \_\_\_\_\_ mm
2. How many pairs of legs do they have? \_\_\_\_\_  
Do all of them have the same number of legs? \_\_\_\_\_
3. How many antennae does one have? \_\_\_\_\_  
What functions do you think the antennae may have?  
\_\_\_\_\_  
\_\_\_\_\_
4. How many eyes do they have? \_\_\_\_\_  
Are the eyes simple (with one lens on the outside) or compound (each eye is made of multiple sections of the lens)? \_\_\_\_\_
5. Do they have wings? \_\_\_\_\_ If so, how many? \_\_\_\_\_



6. Draw a sketch of your insect below. Label all of the parts you can clearly recognize.



7. Touch the back of the insect to determine if it has an endoskeleton (like yours) or an exoskeleton. If it seems hard and stiff, it has an exoskeleton; if it's soft and fleshy, it has an endoskeleton. Which type of skeleton does it have?

\_\_\_\_\_

8. Place the insect on its back on the piece of paper. Describe how it turns over and what it does next.

\_\_\_\_\_

Describe what it does when it comes to an edge where there is a drop-off.

Can it climb on steep, smooth surfaces like the edges of the Petri dish or container?

Can it climb on your arm or another steep, rough surface? \_\_\_\_\_

9. How fast can it run/walk? (to measure, do the following)

- Mark a small X in the centre of your piece of paper.
- Place it on the X.
- After releasing it, record the time it takes for it to move off of the paper.
- Place another X where it left the paper.
- Measure the distance between the two X's in centimetres.
- Calculate the speed of the insect in centimetres per second (cm/sec) by dividing the distance travelled by the amount of time it took.
- The insect travelled \_\_\_\_\_ cm/sec.





### Experiment - backyard adaptations

Now that you have become familiar with the insect's physical makeup, you are ready to design and perform a scientific investigation about the behaviour of your specimen. Also, you will record and report any observations you make about its behaviour.

1. Brainstorm with your partners about possible behaviour questions you would like to investigate. List at least three questions.
2. Select one of these questions to investigate and state it below. Make sure it is a question.
3. Write a hypothesis that relates to your problem question. Write your hypothesis in the form of an "if, then" statement.  
(For example, "If mopane worms are placed in a box where they can choose between light and dark surfaces, **then** they will choose dark surfaces.")
4. Give your project a descriptive title and write the title below.
5. Make a list of all of the variables that may influence your investigation.
6. Determine the variable that you will manipulate (it is the independent variable) and write it below. [Remember that you should manipulate only one independent variable at a time]. Also determine the variable that you will measure (the dependent variable), and the variables that will be consistent throughout the investigation (the controlled variables).  
Independent variable: \_\_\_\_\_  
Dependent variable: \_\_\_\_\_  
Controlled variables: \_\_\_\_\_

*NOTE: The information above should help you in completing the investigation write up. Organize this information according to your teacher's instructions.*



7. Develop a series of step-by-step instructions that you will follow to test the question in your problem. The instructions will be the design of your experiment. [Make sure that the design of the experiment will really do what it is supposed to do] The design should include a way to answer the question in your problem.
8. Make a drawing to illustrate the design of your experiment.
9. Conduct the experiment that you designed.
10. Using a data table, record your data and summarize the results. Using the appropriate graph type (line or bar) supply a graph of your results. The graph should have a descriptive title and a label for each axis.
11. Write a paragraph that states your conclusions. It should include an answer to your problem question and state whether or not you confirmed your hypothesis and explain why. Also, discuss how the results of the experiment may relate to the ability of the insect to survive in its own natural environment.

**Things to consider:**

When designing your experiment, make sure that you can answer the following questions. [If you don't understand any of these questions, make sure to seek guidance from your teacher.]

- Have I identified all of the variables?
- How will the variables be controlled?
- How will variables be measured?
- How will variables be manipulated?
- What equipment and supplies do I need?
- Does my experimental design really do what it is supposed to do?
- Will my experiment answer my question?
- How many organisms will I use in my investigation?
- Is my experiment designed to avoid harming the organisms?
- How many times will I repeat the investigation to ensure that the results are valid?



## Background - adaptations

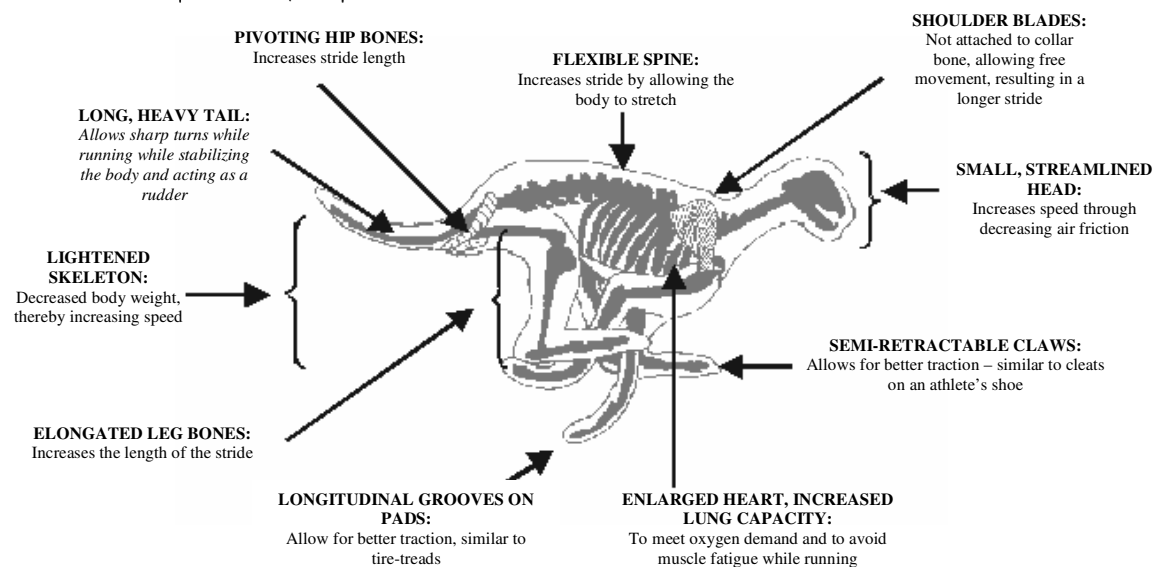
As the fastest animal on land, with a maximum speed of 110 - 120 km per hour, the cheetah can accelerate from 0-80km in 3 seconds. Their top speed can only be maintained for between 400-500 meters resulting in a short burst of speed (20-30s). They then need to rest for about 30 min. Running is a cheetah's main form of defence, its speed allows it to hunt and escape from danger. Over generations the cheetah has evolved many adaptations to facilitate a specialization for speed.

Speed consists of the distance one covers in a certain time; therefore by increasing the distance covered one can increase one's speed. The cheetah is aerodynamic (stream-lined) for decreased resistance while running. The leg bones are longer in comparison to the other cats and they run on their toes, giving them a longer stride. The cheetah also has a very flexible backbone, which allows it to stretch its body out further. The cheetah's shoulder blades are not connected to the collarbone, thus allowing the shoulders to move freely and help increase the length of the forelegs while running. The hip bones pivot in their sockets, allowing for greater length of the hind legs while running. All these adaptations result in a stride of 8 m at full speed. The lightened skeleton and reduced muscles mass aid the cheetah in running faster by decreasing the weight carried (the larger you are the slower you are).

The long tail helps the cheetah to balance and helps the cheetah make sharp turns when running, stabilizes the body and acts as a rudder. A cheetah's foot shows several modifications, allowing for greater grip while running. The pads on the base of the foot bear longitudinal ridges, the function of which is equivalent to tire-treads. The cheetah has semi-retractable claws, which serve a function similar to cleats on a track/soccer shoe.

It takes a lot of energy to sustain the top speed of a cheetah, and therefore the cheetah has several adaptations to allow more effective delivery of oxygen to the muscles. In comparison to the other large cats, the cheetah's heart, lungs, nostrils and sinuses are enlarged to increase oxygen supply to the muscles.

### Cheetah's adaptations for speed:



## Cheetah biology

# LIFE CYCLES

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**SUBJECT AREAS:**

Sciences  
Mathematics

**DURATION/TIME:**

Activity 1: 45 minutes

**RECOMMENDED  
PREPARATION:**

Activity 1:  
Read the 'background' sheet on the cheetah's lifecycle. Photocopy worksheet 'cheetah and me' for learners. Make one photocopy of the 'weight and age chart' to post.

**MATERIALS NEEDED:**

Activity 1:  
Photocopies of the 'cheetah and me' worksheet for learners and graph paper, if necessary

**LOCATION:**

Classroom

**KEY WORDS TO REVIEW:**

Captivity  
Habitat  
Maturity  
Cub  
Litter  
Mortality  
Den  
Gestation  
Graph axis

## OBJECTIVE:

Learners will work on their graphing skills by comparing the similarities and differences in the growth of cheetah cubs and human children

## LESSON

## ACTIVITIES:

**ACTIVITY 1:**

A warm-up 'guess the weight' game and then a discussion about activity and review of information in the 'background' sheet. Learners create a line graph in a weight/age activity and then learners compute results from graph. End with discussion



## Learning Outcomes

In this activity learners will work on their graphing skills by comparing the increase in weight after birth of cheetah cubs and human children.

## Teaching the Lesson

### Activity 1 – cheetah and me

The major purpose of this activity is for learners to recognize similarities between cheetah cubs and human babies as well as develop mathematic skills.

### Procedure

1. Begin a class discussion with learners about cheetahs (use information on the ‘a cheetah’s life cycle’ background sheet). Ask learners to guess how much a cub (baby cheetah) might weigh when it is born. Learners can write down their guess on a piece of paper. Call for their guesses. Ask for their ideas about how long mother cheetahs are pregnant, what baby cheetahs eat when they are born, how much they might weigh when they are a year old, how many brothers and sisters they might have who are their same age, how much they weigh when they are full grown and how long they live. (answers can be found on the development chart)
2. Following discussion, post a copy of the ‘weight and age chart’ and provide as a handout found on the next page. Review with learners any of the background information not covered in the class discussion. Ask learners to plot the cheetah's weight and age.
3. Ask the learners to plot their own weight at the same ages as the cheetah shown on the chart. They will be required to estimate for years past their present age. Ask the learners to graph both sets of data. (Graph can be done on the ‘cheetah and me’ worksheet or separately on graph paper.)
4. Ask the learners to compute the following, and include their results with their graph and drawing:
  - A. How much weight did the cheetah gain at each interval (that is, from birth to four months, 12 months to two years, etc).
  - B. How much weight did you gain during the same intervals?
  - C. How many times more weight did the cheetah gain during each period?
5. In discussion, ask the learners to comment on the similarities and differences between the lifecycles of cheetahs and people.



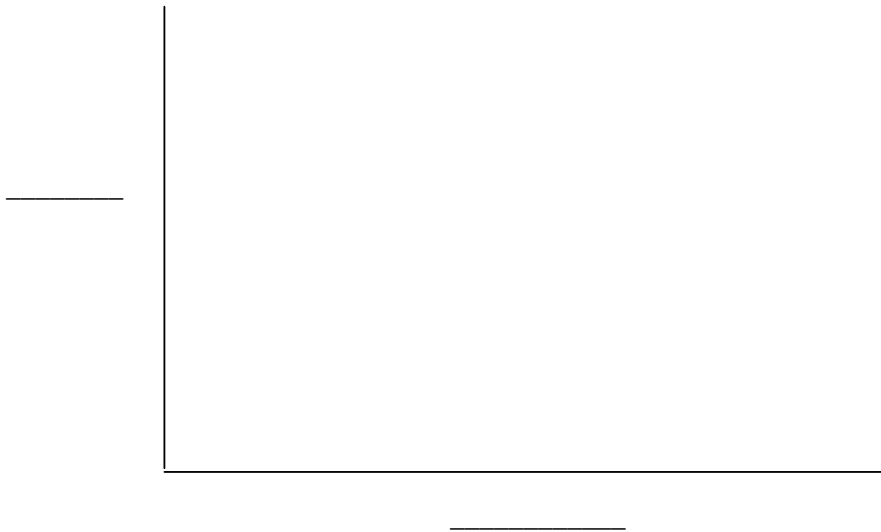
Worksheet - cheetah and me

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Instructions:** Create a line graph in which one line represents cheetahs and one line represents you. Don't forget to put the correct labels on the axis!

Graph Title: \_\_\_\_\_



**Weight and Age Chart**

*The amounts for the cheetah have been rounded up for convenience; that for the child has been averaged for boys and girls and rounded to the nearest 1/2 kg.*

Cheetah		Child	
Age	Weight	Age	Weight
Birth	0.3 kg	Birth	3.5 kg
2 months	3 kg	2 months	5.5 kg
4 months	7 kg	4 months	6.5 kg
6 months	12 kg	6 months	8 kg
12 months	25 kg	12 months	10 kg
16 months	30 kg	16 months	11 kg
24 months	35 kg	24 months	12 kg
adult	35 - 40 kg	4 years	16 kg
		8 years	26 kg
		12 years	43 kg
		16 years	60 kg
		Adult	63 - ? kg



**Development Chart**

<b>Stage of Development</b>	<b>Cheetah</b>	<b>Human</b>
Gestation	<i>90-95 days</i>	<i>9 months</i>
Open eyes	<i>4-14 days</i>	<i>From birth</i>
First tooth	<i>3 weeks</i>	<i>6 months</i>
Milk teeth	<i>6 weeks</i>	<i>By 30 months</i>
Permanent teeth	<i>8 months</i>	<i>By 13 years</i>
Weaning	<i>Starts at 6 weeks</i>	<i>6 months to one year</i>
Walk	<i>3 weeks</i>	<i>12-16 months</i>
Life span	<i>8-12 years</i>	<i>70 years</i>

*Assessment*

**Checklist for graph**

<b>Assessment statements</b>	<b>Yes</b>	<b>No</b>
Graph has a heading		
Both axes are labelled (e.g. weight vs. age)		
Axis labels are correct		
Axis labels include the relevant units (e.g. grams vs. months)		
Axes are divided into relevant intervals		
Data is plotted accurately		
Both sets of data are plotted		
Both sets of data are distinguishable from each other		
The graph is neat and legible		







### *Background - a cheetah's life cycle*

The average life expectancy for cheetahs in captivity is 10-12 years, although some may live longer. In the wild there has not been much research done regarding life expectancy, although it is thought to be slightly less, possibly only 7-8 years. Longevity and survival of the cheetah depends on availability of suitable habitat and its ability to hunt successfully.

Female cheetahs reach sexual maturity between 20-24 months and males between 2-3 years. Cheetahs do not have a particular breeding season. The sexes have a courtship period of up to three days. After breeding the male will leave the female. Gestation period is between 90-95 days. Litters vary in size from 1-8 cubs, with an average of 3 cubs. Birth takes place in bushy thickets, tall grass, rock cavities or "borrowed" burrows. Cheetah cubs are born blind and helpless around 150-300g and up to 30 cm long. Newborn cubs can move enough to reach mother's teats and suckle, turn their heads, spit and give soft purring calls. Cheetah cubs develop more quickly than any young of any other big cat, gaining about 50 g daily. Cubs open their eyes between 4 and 14 days (average 10 days). Cubs can crawl in about 2-3 days and walk at three weeks.

For first 6 weeks of their lives, the cubs are hidden in dense vegetation. The mother returns at night to suckle and groom the cubs. Cubs get their upper and lower canines at three weeks, full set of milk teeth at 6 weeks and their permanent set of teeth by 8 months. Cubs will nurse from 2-3 months with weaning usually beginning around 6 weeks. Cubs begin eating meat at 4-6 weeks. At 6 weeks cubs begin to follow their mother, but return to their den until about 8 weeks.

After 8 weeks they will follow her continuously, bedding down for the night wherever they are. From 6 weeks to 3-4 months is the most vulnerable time for cubs, with predation and starvation being the major causes of death. Cubs also succumb very easily to disease.

The mortality rate amongst cubs is very high; with on average only 10 % survive the first year. Young cheetahs play spirited, athletic games consisting of stalking, pouncing, chasing, boxing, wrestling, and tug-of-war. Play is more related to hunting tactics than fighting. When cubs are about 18 months old the mother leaves them. They usually remain in a sibling group for another six months. At about 2 years the female cubs come into oestrous and leave the group. Young males may remain together, forming a life-long coalition, or separate.

When a cheetah cub reaches one year of age, cubs weigh about 25 kg. A mature cheetah weighs 34-54kg and has a shoulder height of 73+ cm. The male tends to be slightly larger than the female.



## Cheetah biology

# NUTRITION & TEETH

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**SUBJECT AREAS:**

Sciences  
Health

**DURATION/TIME:**

Activity 1: 15 min  
Activity 2: 40 min

**RECOMMENDED  
PREPARATION:**

Activity 2:  
If possible, borrow actual skulls to use. Also, photocopy of the 'learners skull page' and 'teeth talk' worksheets for each learner.

**MATERIALS NEEDED:**

Activity 2:  
Skulls and photocopies

**LOCATION:**

Classroom

**KEY WORDS TO REVIEW:**

Nutrition  
Carnivore  
Herbivore  
Omnivore  
Incisors  
Canines  
Premolars  
Domestic

## OBJECTIVE:

Learners will discover what the teeth of an animal can tell us about the animal

## LESSON

## ACTIVITIES:

**ACTIVITY 1:**

Review terms and lead a discussion on a cheetah's nutritional diet and the teeth of different animals.

Explanation of different types of teeth and teeth functions.

**ACTIVITY 2:**

Categorizing animals based on the skulls learners see. Complete the 'teeth talk' worksheet and discuss the reasons for grouping the skulls.



## Learning Outcomes

Learners will discover what the teeth of an animal can tell us about the animal and they will use this information to group common animals.

## Teaching the Lesson

### Activity 1 - review

Review with the learners the terms: carnivore, omnivore and herbivore. Explain the different types of teeth and their different functions, using the labelled picture of teeth found on the next page.

Molars (M) and Premolars (P)	- grind
Canines (C)	- tear / puncture
Incisors (I)	- slice / cut

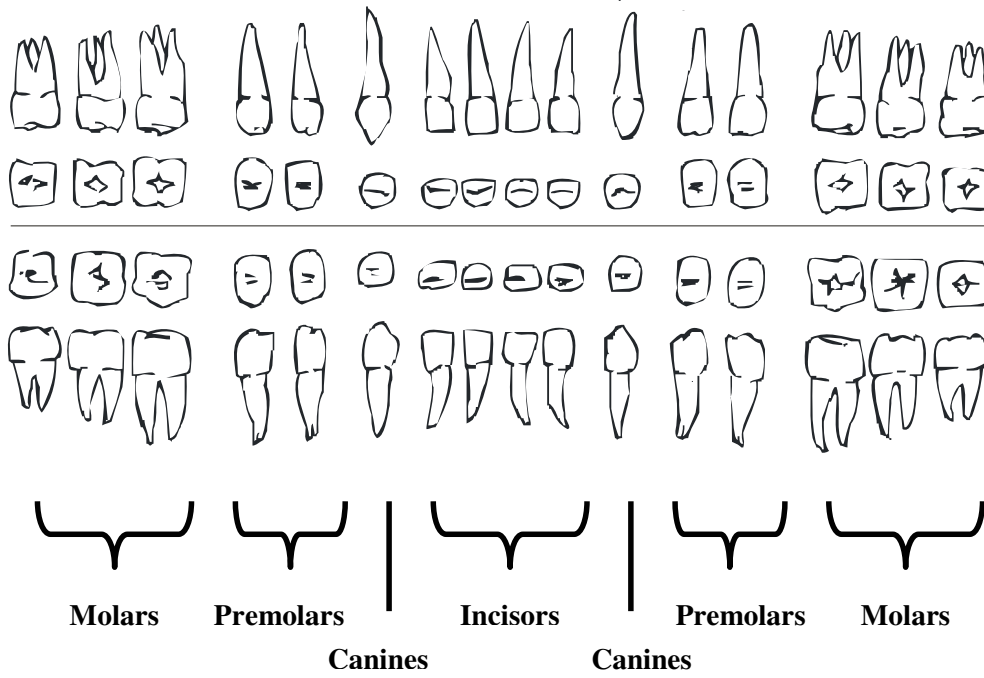
### Activity 2 - teeth talk

Have the learners look at the pictures of the various skulls as shown on the Skull Sheet. If possible, try to have some actual skulls available (look into borrowing them from the local university or museum). Ask the learners to look at the teeth and predict the diet of the animal by the different teeth present. For example, do they see canines? Have the learners group the skulls into categories based on what they see, giving their reasons for that grouping. Fill in the 'teeth talk' worksheet. Allow for 10-15 minutes. (Have the learners write down their answers on an activity sheet)

Give the examples on the following page of the dentitions of a herbivore, carnivore, and omnivore and allow the learners to re-categorize with the new information. As a class, see if they can brainstorm ideas on which animal the skull belongs to, writing the list of animals up on the board.

## Assessment

1	2	3	4
Learner was unable to identify the teeth and could not classify diet or category that the skulls fell under	Learners could identify the teeth, although reasoning behind classifications did not always show understanding	Learner completed the worksheet showing good reasoning behind the classifications	Learner exceeded expectations producing innovative reasoning behind classifications



*Dentition Examples*

CARNIVORE

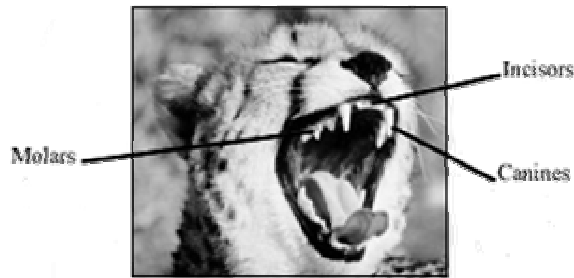
3 incisors, 1 canine, 4 premolars, 2 molars on one side of the top jaw  
 3 incisors, 1 canine, 4 premolars, 2 molars on one side of the lower jaw

OMNIVORE

2 incisors, 1 canine, 2 premolars, 3 molars on one side of the top jaw  
 2 incisors, 1 canine, 2 premolars, 3 molars on one side of the lower jaw

HERBIVORE

0 incisors, 0 canines, 3 premolars, 3 molars on one side of the top jaw  
 3 incisors, 1 canine, 3 premolars, 3 molars on one side of the lower jaw





Learner's Skull Page



1) Cheetah



2) Baboon



3) Domestic Cat



4) Domestic Dog



5) Goat



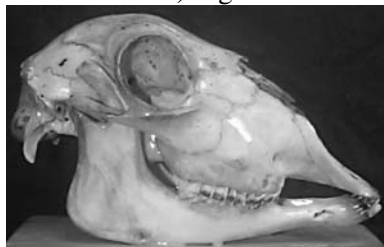
6) Horse



7) Pig



8) Human



9) Sheep



10) Impala

Using the pictures above, find the special teeth that help the animal eat its food. Place this animal in the table showing what you think their diet would be and whether it is a herbivore, carnivore, or omnivore.



Worksheet - teeth talk

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Skull #	Diet	Category (herbivore, carnivore, or omnivore)	Reasoning	New Category
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				