Feline Cart

CONCEPTS

Grade 1 Standards
1. Heredity: Make observations to construct an evidence account that **young plants and animals are like, but not exactly like, their parents.**

Look at the animals: How are our young tiger and baby lion similar to their parents?

It is hard to tell our full-grown Jillian and her mother Leann apart at first glance, where the baby lion is small, spotted and lacks his father's mane; he looks more like his mother.

2. Use materials to design a solution to a human problem by mimicking **how plants and/or animals use their external parts to help them survive, grow and meet their needs.**

Refer to the items on the biofact cart; here are some questions and comments that refer to those.

How do the coloration, paws,[forearm] claws,[in the container in the drawer] and teeth and eyes[skull] of our cats help them thrive in their habitats?
Compare the lion's fur with those of the CA mountain lion and snow leopard. How do these different coats help the animals live in the different climates where they live? [dry, arid savanna, CA mountains to coast, high snowy rocky mountains]

How does the lion's color help it hide when it hunts antelope in the dry brown savanna? Did you see our Savanna? What animals did you see there? These are some of the animals that lions like to hunt and eat. Why don't we keep our lions in the Savanna?

Note the padding on the paw and where the wrist is; these help the lion move very quietly. How does that help it in hunting?

Look at how big the lion's eyes are; how does this help it hunt when there is not much light—in the early morning or evening?

When the lioness hunts, she jumps on the back of her prey/food. How do her claws help her hold on? Look at her huge canine teeth; she uses these to bite the neck of her prey and kill it instantly. How is it important that she can do so? What might happen if she couldn't hold on and kill her prey so quickly? [Make analogies to having your food taken away]
Look at the other teeth and the sandpaper that is like the lion's tongue. The lion uses its pointy, jagged back teeth to tear hunks of meat from its prey and to tongue

helps push the chunks of meat down its throat without chewing. Why is this a better way for the lion to eat than stopping to chew carefully as we do our food?

3. Read texts and use media to **determine patterns in behavior of parents and offspring that help offspring survive.**

How do the lion parents and cub interact? What role does the father play?
Note the mother is in charge and the father less so.

Grade 2: Concepts
1. **Make observations of plants and animals to compare the diversity of life in different habitats.**
Why aren't our lions living in their natural habitat, the Savanna, with the other savanna animals? See above comments about the Savanna

Grade 3: Concepts
1. Animals form groups that help them survive

Lions live in prides with a male lion in charge of a number of females and he has cubs with all of the females who are old enough. What advantages are there in living in a group like this?

2. Animals have traits they inherit from their parents and those traits can vary and also be influenced by the environment.

What advantages might there be in having different traits?
We have two tigers here at the zoo—the Sumatran that comes from the hot, tropical island nation of Indonesia and the Amur that comes from a very cold region near the Russian-Chinese border. How are these two tigers different? Which one is bigger? Why would the island tiger be smaller? Why is the Amur tiger bigger?

3. How are cats' life cycles different from ours? Except for the lions that live in a pride, all other cats (tigers, snow leopards, fishing cat, and bobcat) are solitary except when they are mating or the mother is caring for her cubs. What are the advantages of being solitary?
After a year or two as head of the pride, usually a new, younger and often more handsome male lion will come along and fight the older male to replace him as head of the pride. He will then mate with the lionesses and produce new cubs. What are the advantages of this change to the pride?

4. Except for our bobcat that is found all over North America, all of our cats are threatened or endangered and may become extinct. That is, their breed may no longer be on the earth. What do you think has caused this possible disappearance of these beautiful animals? What happens when where they live changes too much for them to live there?

Grade 4

1. What internal and external structures help our cats survive, grow, and reproduce?
Look at the lion's skull (see Grades 1 &2). How do the large eyes help the lion hunt when the light is low? Did you know that most cats have a tapetum lucidum on the retina at the back of the eye; this is like a mirror that reflects incoming light back out like a flashlight to enhance the cat's sight when they hunt at night. That's why cats' eyes glow in the dark. Also consider how much pressure the can exerts when it is biting down on its prey—we can infer how string its muscles and bite are from its short snout and large zygomatic arch. Can you see the gap in the eye socket? That gap serves to release the pressure of the cat's bite so the bones don't crack.

Also Look behind the tape on the lion's skull. Those are delicate bones called turbinates, which when covered with nerves and flesh expand the area over which scent travels and gives the cats a very good sense of smell—much better that ours! How does this structure, along with the enhanced eyesight, help the cats succeed if finding food?

Grade 5
Food is important to support life. Cats eat mainly protein from other mammals. Those mammals usually are plant eaters. They get their from the plants that get their energy from the sun. So, indirectly our cats, as well as all other life are dependent upon the sun's energy.