

Grade 3

Self-Guided Tour Africa Trail



Aligns with the following Arizona State Science Standards

S1C1-01, S1C2-05, S1C3-02
S2C2-01, S2C2-02
S3C2-01, S3C3-01, S3C3-02, S3C4-02
S4C1-01, S4C2-02, S4C3-01, S4C3-02, S4C3-03

This self-guided tour through the Africa Trail is offered by the Phoenix Zoo as an aid for **third grade** teachers planning a visit to the zoo. The tour outlines discussion points for several locations along the Africa Trail. These discussions can be the starting point for further activity in the classroom or a means to reinforce or review concepts already discussed. The tour is arranged so that concepts at each location build upon the previous stops.

I. Savanna Exhibit

- Discuss the relationships between the plants and animals on the savanna.
- Discuss how the food chain is illustrated on the savanna. What other systems are happening on the savanna? Discuss that the savanna as an ecosystem can be considered a system of its own.
- Discuss resource availability on the savanna.
- Discuss changes that can affect the savanna
 - Drought – typically causes a slow change in the environment because water sources cannot be replenished fast enough. Drought has a negative effect on the environment.
 - Population increase – it takes several generations within most populations for the size to reach threatening proportions, however, anytime there is a small increase in population there is an increase in competition for resources.
 - Fire – many effects of fires are immediate on the environment and negative. Plants are destroyed, animals lose homes and are injured; food sources are limited. However, there are also long term and positive effects of fire. The fire replenishes the nutrients in the soil so the ecosystem is healthier over time.
 - Hunting on the savanna: Hunting can be good because it helps keep the population in check if done responsibly. It can also be negative if too much hunting is done so the population is decimated.
 - Disease- most of the animals on the savanna are herd animals so they spend a lot of time with each other. It is easy for a disease to spread throughout a herd once it hits. One herd being hit by disease can influence others either through the disease itself or by affecting the food chain and availability of resources as the animals die off.

2. Desert Lives fire pit area

- On the Desert Lives Trail students will be able to closely examine several desert plant species. Have the students explore these plants and point out their structures and their uses. Note: Although there are a few African species on this trail, most of the plants are native to the Sonoran Desert in Arizona.
- Surrounding the covered fire pit area you will find the following species:
 - Brittle bush, Palo Verde, Pencil cholla, Penstemon, Prickly pear cactus, Saguaro, Desert broom, Mesquite, Creosote, Ocotillo
- Also you can find, near the covered fire pit area, an example of the life cycle of the saguaro cactus. There is a full-grown cactus, a decaying cactus, and if you look around you might find a tiny saguaro growing under a nurse plant. Discuss the life cycle of this cactus.
- Notice what the plants look like. Notice that many of them have waxy leaves or small leaves.

3. Arabian Oryx Exhibit

- Have the students read the story of the Arabian Oryx on the graphics.
- They will learn that as technology increased, vehicles were built, gun technology increased and roads were built, which made it easier for the Oryx to be hunted. This caused the population of Oryx to plummet.
- However, when the problem was recognized, technology was also used to bring the population numbers back up. Scientists used modern medicine, holding facilities, transportation and access to processed foods to be able to breed the Oryx successfully in captivity and eventually release them into the wild.
- The graphics also depict the Phoenix Zoo's role in the breeding and re-growth of the Oryx population. The Phoenix Zoo is credited with saving the Oryx population!

4. Other Exhibits

All of the animals on the Africa Trail cause change to the environment through the food that they eat and the homes that they make. As animals use resources, die, and give birth they affect a continually fluctuating cycle of the health of the environment. At each exhibit, with the students, use the graphical information concerning diet and behavior along with observations of the animals, to determine how the animals affect the environment that they live in. Have the students record their questions and conclusions. Be sure that they explain the thought process that brought them to their stated conclusions.

The animals you will see are:

- Sumatran tiger
- African Lion
- Warthog
- Meerkat
- Hamadryas Baboon
- Mandrill
- Cheetah
- White Rhinoceros

5. Otter Exhibit

- The otter lives in a very different environment than the other animals on the Africa Trail. Ask the students to compare and contrast this environment to the lion exhibit or the baboon exhibit.
- Have students compare the plants they saw on the Desert Lives trail to the plants growing in the Otter exhibit. These plants are in an area with much more moisture. (Do they have the same waxy skin as many of the plants from the desert? Are their leaves larger or smaller?) In moist areas where a lot of plants grow, there is more competition for sunlight. Leaves in these areas will grow larger in order to have the opportunity to take in more light.