

SCIENCE·3D

THE BLACK PANTHER

In this packet, sample student answers are provided in **red** and notes to teacher are in **blue**.

In this **Science Mission**, students will use information from the **Mission Reader** and the **Mission Video**, as well as simple data from the field, to make predictions about what offspring will look like and why a black panther like Saya's behavior may be different from leopards with yellow fur.

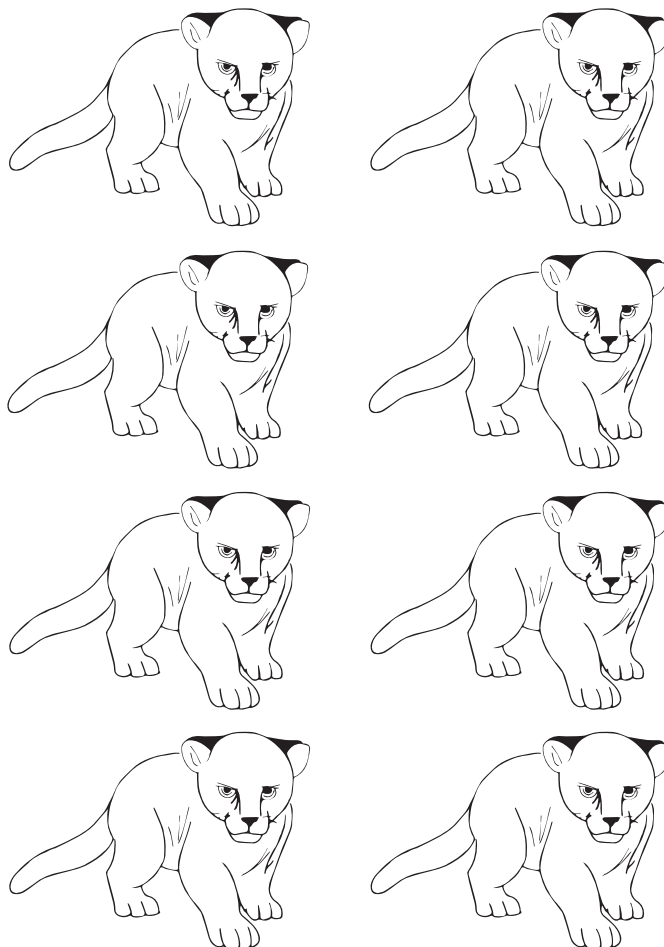


Activity 1: Just Like Dad?

Saya is a black panther. Even though he is called a panther, he is a leopard. Saya's mate is a yellow leopard named Mist. Saya and Mist have eight cubs.

1. **Color** Saya and Mist's eight cubs.

Students may have different numbers that are black or yellow with spots. For this question, it is not critical that they have a specific correct answer but that they draw leopards with colors that are plausible (very few or no black panthers).



2. **Explain** why you think the cubs will have these colors.

There are not many (or any) black cubs because black panthers are rare. Mom is yellow with black spots so her cubs will be yellow with black spots. Saya is black so his cubs are black. Other answers are possible but should be logical and consistent with the drawing.

This is an opportunity to discuss the idea of variation between animals of the same species. How are they similar? How are they different?

Activity 2: What Should I Do Today?

Shaaz has been following the black panther for years. He has discovered that he has favorite things to do at different times of the day. One thing he *doesn't* like to do is get too hot! Table 1 shows what he spends his time doing at different times of the day. What do you think his main activities are?

A primary goal of this activity is to have students realize that many behaviors are focused on finding shelter and food. It should also help students see that animals respond to their environments. This activity can be conducted as a written activity or discussion. Start with one student sharing something that Saya does. Then have additional students say what Saya does next. Together, the students will tell the story of the day. Alternatively, you could have groups act out Saya's different behaviors during the day.

Table 1. Most common behaviors at different times of day

Time of day	Behavior
Early Morning	Look for food
Late Morning	Get a drink; watch for other leopards
Noon	Sleep in shade
Early Afternoon	Sleep in shade
Late Afternoon	Sleep in shade
Evening	Get a drink; watch for other leopards
Night	Look for food

1. **Write** a paragraph that describes what Saya does all day.

Saya sleeps during the afternoon. Then he wakes up and gets a drink. He looks for other leopards.

He spends the night looking for food. He looks for food in the morning. Then he gets a drink. He

looks for other leopards. Then he goes to sleep.

2. Why do you think Saya sleeps during the middle of the day?

He sleeps during the day to get out of the heat.

Some students may also guess that because he is black, prey would see him during the day. Accept any partial answer that hints at one of these ideas. This question can also be posed to the entire group for discussion.

3. Why do you think Saya looks for food at night?

At night, it is not too hot. At night, prey can't see him because he is black. He can sneak up on prey.

Accept any partial answer that covers one of these ideas. This question can also be posed to the entire group for discussion.

4. Do you think that Mist (a yellow leopard) would look for food at the same time as Saya? Why?

She will probably hunt during the day because she blends in with the plants during the day.

Accept any partial answer that hints at this idea. This question can also be posed to the entire group for discussion. It is also reasonable for students to say she will hunt at night because it is cool.

Activity 3: Which is Better?

In many places, environments change. People cause some of these changes. Other changes are natural. For each example, **predict** whether a black panther or a yellow leopard would benefit from a change in the environment. **Write** one sentence to explain your answer.

The primary goal of this activity is to get students thinking about how changes in the environment might influence organisms and how some traits might help certain individuals survive.

1. Many trees grow. An open area with lots of light becomes much darker because of the shade.

Who does better?

BLACK PANTHER

YELLOW LEOPARD

Why?

Black panthers will benefit because they can sneak up on their prey more easily. Students may also say they do better because they don't get too hot anymore.

2. Most of the trees are cut down. Grasses grow. There is now lots of light and prey can see predators more easily.

Who does better?

BLACK PANTHER

YELLOW LEOPARD

Why?

Yellow leopards will do better because black panthers will be too easy for the prey to see. Some students may say both do poorly because neither can sneak up on prey easily.