

SCIENCE·3D

THE BLACK PANTHER

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

During this **Mission Research**, students will complete diagrams of life cycles and use their understanding to support arguments about which offspring belong to which parents.

The information in the **Mission Reader** will help students learn about this and a variety of topics, such as how offspring are different from their parents, how traits are passed from parents to offspring, variation in traits, and animal behavior.



Parents and Offspring

Let's explore similarities and differences of parents and offspring.

1. For the picture below, **list** the ways that the parents and offspring are **similar**. Then **list** the ways that they are **different**.



Similarities

Have fur

Floppy ears

Black nose

Differences

Not all the same color

Fur texture

Eye size

Is That My Parent?

For each set of animals, describe if the parent and offspring pictured are a match or not. If a parent and offspring are shown, select **match**. If they are not related, select **not a match**. Explain your reasoning.



MATCH



NOT A MATCH



2. What evidence did you use to make your decision?

I saw that both are dogs. They have the same shape and same colors.



MATCH

NOT A MATCH



3. What evidence did you use to make your decision?

The shape of the baby is a bit different. Their noses and fur are different, and the baby doesn't have stripes.

Students don't need to have all of these answers, but enough to tell the difference.



MATCH

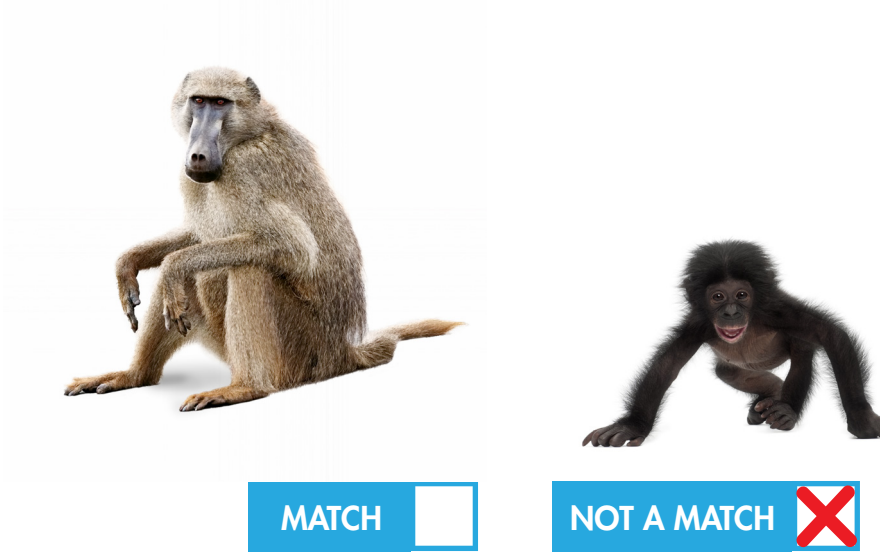


NOT A MATCH

4. What evidence did you use to make your decision?

They have the same ears and shape.

Both animals have trunks, tusks, long tails, and are the same color.



5. What evidence did you use to make your decision?

The baby is a different color, has a different face shape, and doesn't have a tail.

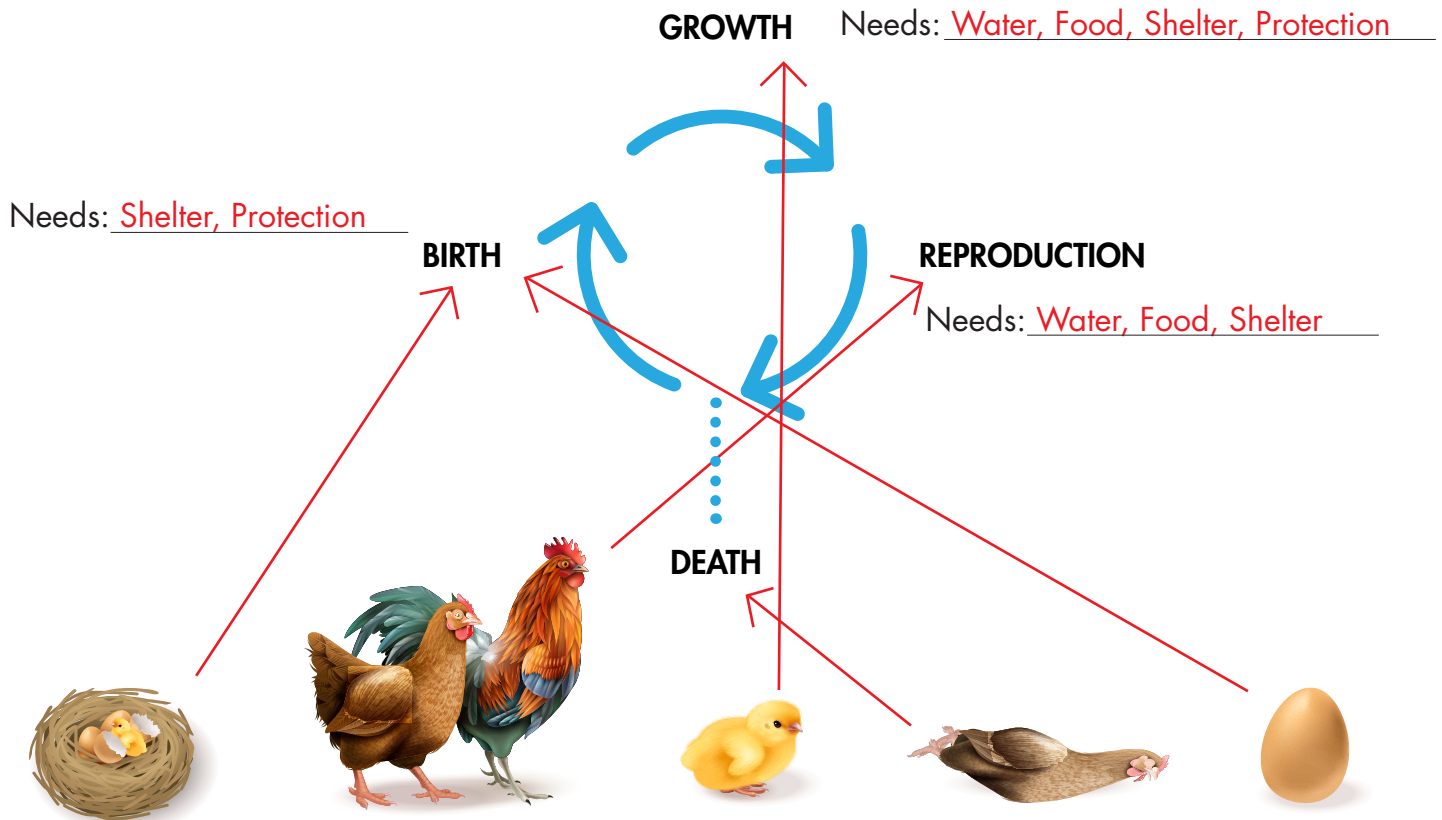


6. What evidence did you use to make your decision?

The child is the same shape as the parent. Both stand on two legs. Both have hair, similar facial expressions, and wear clothing.

Life Cycles

7. Draw lines to match each picture to the correct life cycle stage. For each stage, write the bird's needs. Use words like **food**, **shelter**, **water**, **protection**.



Have students (or small groups) create a poster or computer presentation to describe the life cycle of one or two different organisms that were not described in the reader.

1. Assign each student or group a different organism. Consider **frogs**, **fish**, **butterflies**, **cacti**, etc.
2. Have students conduct research on their species.
3. Tell students to label the stages in the life cycle, including **birth**, **growth**, **reproduction**, **death** and **metamorphosis** when appropriate.
4. Explain that for each stage they should write what their species eat and some of its needs. They might include things such as food, shelter, and protection.
5. Have them present, or even act out, the life cycles of their animal or plant.
6. Ask students to compare the life cycle of their chosen organism to the life cycle of a leopard. For each stage, have them list the ways the organisms are alike and different.

Answers will vary depending on the organism. Potential similarities include: they both need food, water, and shelter; they both need protection from parents; they both need to be fed by their parents. Potential differences include: leopards need help from their mothers, but a fish doesn't need protection from parents; one lays eggs and leopards give birth; leopards don't have metamorphosis, but frogs do.