Inspiring Greatness
ISD
INDEPENDENCE SCHOOL DISTRICT

# High School Science Virtual Learning

# Biology

# Speciation

## April 09, 2020

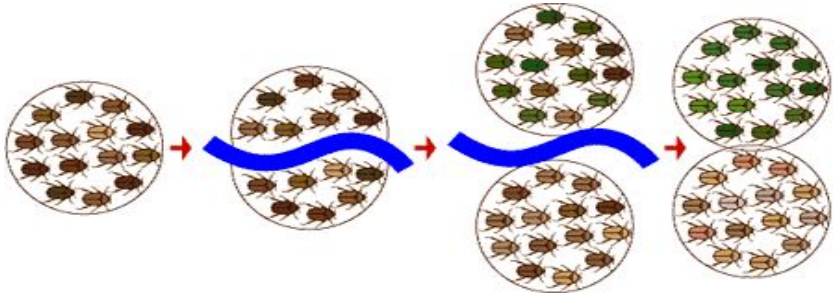
High School Biology
Lesson: April 09, 2020

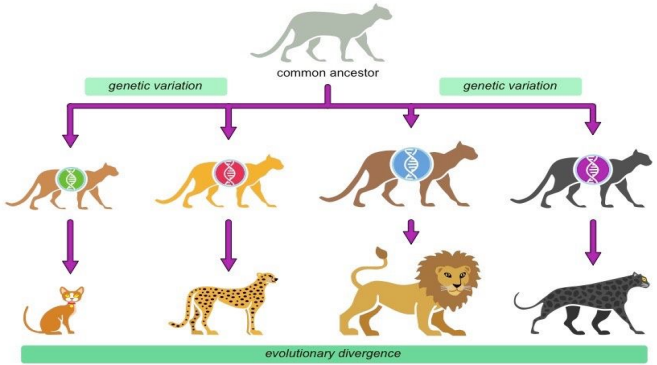
**Objective/Learning Target:**

I can explain speciation and how different species come to be and what makes two organisms different species.

# Let's Get Started:

1. The image to the right shows an example of a river being introduced that caused reproductive isolation. What do you think reproductive isolation means?

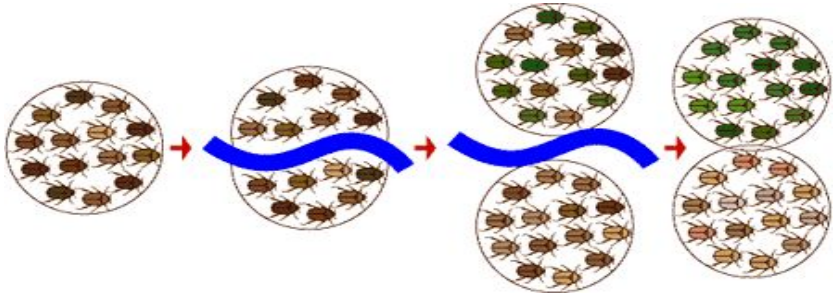


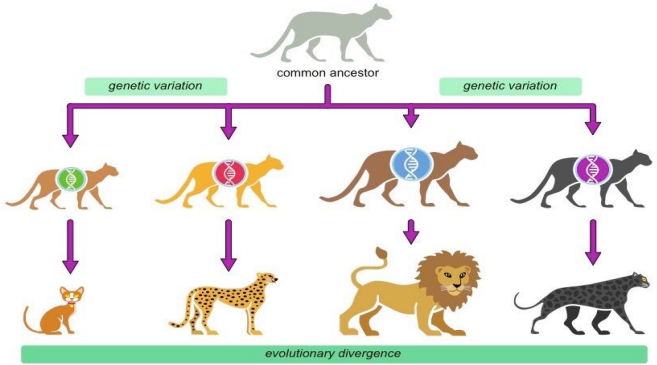



2. Using the image to the left describe how these organisms became difference species.

# Let's Get Started: Answer Key

1. the inability of a species to breed successfully with related species due to some barrier.






2. Over time the species were separated due to different barriers and the species gradually changed to fit their environment.

# Lesson Activity:

**Directions:**

1. **Watch the video over speciation. While watching the video fill in the notes sheet.**
2. **Fill in the notes sheet as you watch**

**Link(s):** Speciation Video

Video Worksheet

# Practice

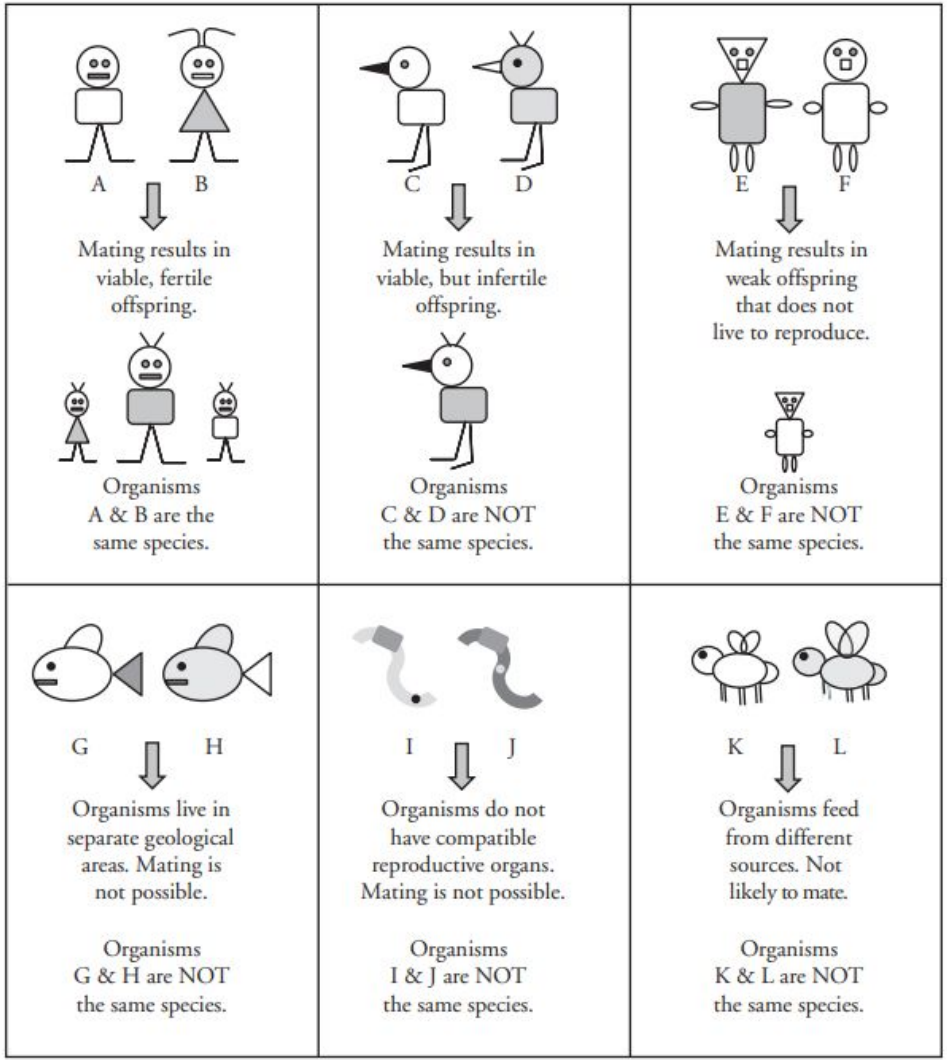
*Complete the following questions using the information you learned during the lesson activity.*

# Questions 1-3:

1. Refer to the image on the right. Identify the pairs of organisms that are able to produce offspring.

2. Which pair of organisms in image are members of the same species?

3. Consider all of the pairs of organisms in the that are not of the same species. What criterion are missing in all cases that could be used to define a species?



# Questions 4-5:

4. A common farming practice is to breed a female horse with a male donkey. The result is a very robust animal – the mule. Most mules however are sterile, and therefore cannot reproduce. Are horses and donkeys members of the same species? Justify your answer.

5. Many species of birds have elaborate mating rituals that include bird calls, nest construction, and courtship displays. A researcher is comparing two populations of birds with similar morphology that live in similar niches. Male birds in one population build a nest before attempting to court a female, while males in the other population build the nest in cooperation with the female. Is it likely the researcher will classify these birds as the same species? Justify your reasoning.

**Read This:**

**The primary criteria for animals to be classified as different species is that there must be reproductive isolation, meaning for some reason organisms from the two populations cannot pass on their genetic code through reproduction for several generations. Other criteria such as differing morphology (appearance and body structure) and how much DNA the organisms share are also used to make a final determination when comparing two similar organisms.**

Once you have completed the practice questions check with the answer key.

1. Organisms A/B, C/D, and E/F are able to produce offspring.

2. The only pair that is the same species are organism A and B.

3. The pairs of organism that are not the same species cannot produce viable, fertile offspring.

4. No, horses and donkeys are different species because when they mate, their offspring are infertile. This is the similar to the organism pair C/D in the image.

5. No, these two birds would not be classified as the same species because it is unlikely that they would be able to mate due to the difference in their mating rituals.

# More Practice:

Complete the following over Speciation

Follow the directions on the practice sheet to answer the questions.

1. Practice Sheet 2 Link

Click on the link and go through the presentation.

2. Reproductive Barriers Slides Link

Additional Practice:
Click on the link below for additional practice.

Speciation Practice