

Inbreeding Case Studies activity Part 2

This activity extends part 1 by reassigning students to new groups to present the case study completed in part 1, and then to complete the remaining case studies.

After completing Part 1 of this activity, jigsaw the students into new groups of five with one student representative from each inbreeding case study. Have each student in the new group share the case study that they previously investigated. Ask the students to complete the rest of the graphic organizers.

Discussion points for each case study:

1) Domestic dogs

- a) Purebred dogs were inbred for desired characteristics like herding, fetching, and tracking skills
- b) Unfortunately, health problems also resulted like hip, elbow, heart, and eye problems

2) The Florida Panther

- a) Hunting and habitat loss have reduced its numbers to 70 individuals confined to South Florida.
- b) So few panthers remain that they are now inbred, which has caused health problems like heart defects and abnormal sperm. These defects make it even harder for them to survive.

3) Thoroughbred Horses

- a) Thoroughbred horses were selectively bred (inbred) for speed
- b) Some Thoroughbreds have skeletal defects, which can lead to broken bones. They also have reproductive problems.

4) The Hapsburg Royal Family of Europe

- a) The Hapsburg family ruled Austria and Spain as well as many other European countries between the 15-18th centuries.
- b) In order to keep “pure” bloodlines and seal alliances for increased power, the Hapsburgs inter-married one another frequently. Marriages between first cousins and uncles and nieces were fairly common.
- c) One result of this inbreeding is the “Hapsburg Jaw” where the lower jaw grows longer than the upper jaw making for an extended chin.

5) Maple Syrup Urine Disease

- a) The Amish communities had very small founding populations, which led to genes for this disorder to be more common in today’s population.
- b) This circumstance results in the high rate of Maple Syrup Urine Disease in today’s population. This disease can cause seizures, comas, and death, if left untreated.