

Priority Standard 5b FA #4: Project

Students will be assigned an existing animal and habitat. They will use the information about their assigned organism to explain the adaptive advantages of the organism's existing traits/characteristics (5.2.1). In addition, students will include a portion in their project about environmental change and how this change would be a driving force for the future evolution of their animal (5.2.2 & 5.3.1). The student will also write a thorough description of the relationship between their organism's traits, environment, and natural and/or sexual selection. Finally, students will briefly explain what limitations, lack of precision, or lack of reliability their model shows (5.3.3).

This project may be done as a comic strip, poster, powerpoint, or other presentation of the student's choosing (with teacher permission). Make sure when choosing your format that you are able to include all of the following:

The project needs to include the following:

- 1) Graphical Representation of Existing Animal: Provide a drawing or photograph of your assigned animal, with at least 5 physical and/or behavioral adaptations clearly labeled (5.2.1). (Note: These are the adaptations it currently has)

- 2) Description of Adaptations: Use the above-labeled adaptations to explain how the animal's characteristics help it survive in its current habitat (5.2.2).

- 3) Drawing of adapted animal: Using your assigned environmental change, draw the "future" version of your animal. This should represent how it has changed after 100,000 years of evolution in its new environment. Include at least 3 new, labeled adaptations (behavioral and/or physical) (5.3.1).

- 4) Justification: **Explain** the relationship between your animal's "new" characteristics and its future environment, using the process of natural selection as a model (5.3.1/5.3.2).

- 5) Limitations: Evaluate the limitations, lack of precision, and lack of reliability your new species design might have. (5.3.3)

- 6) 5.4.1 Opportunity: DNA shows that Polar Bears are very closely related to brown bears, yet, as you can see, they are very different. Explain what factors shaped the evolution of the polar bear.

DUE DATE: _____

Teacher instructions: Give one animal square to each student

BAT



TODAY

- Wings for flying
 - Eats small insects in mid-air
 - Hunts in the dark
 - Poor eyesight
 - Uses hearing to find prey
 - Hangs from trees
- ...in 100,000 YEARS**
- Insects have become extinct
 - Eats small animals on ground
 - Hunts by smell
 - Climate has gotten much colder
 - Must run fast to catch prey

SQUIRREL



TODAY

- Eats acorns in oak trees
 - Cool climate
 - Sharp front teeth
 - Good climber
- Big bushy tail for balance

...in 100,000 YEARS

- Fungus has killed all oak trees
- Competition on land has become too great for them to survive there
- Females prefer males with longer claws

DOLPHIN



TODAY

- Warm oceans
 - Eats fish
 - Very fast
 - Very intelligent
 - Many small, sharp teeth
- ...in 100,000 YEARS**
- Seas have cooled
 - Water has become too shallow to swim
 - Must sneak up on and feed on large reptiles along shore
 - Females are choosing males with larger eyes

PEACOCK



TODAY

- Tropical forests
 - Dense underbrush protects it from predators
 - Large, bright tail
 - Small beak for eating seeds and fruit
 - Cannot fly
- ...in 100,000 YEARS**
- Human activity has destroyed the protective underbrush and seeds
 - Feeds on large mammals
 - Large tail and bright colors make it impossible escape from predators

SPARROW



TODAY

- Lives in backyards and birdfeeders
 - Eats seeds and small insects
 - Dull colors to blend in

...in 100,000 YEARS

- Females select males with strange, showy traits
- Predators show a preference for eating smaller individuals
- Insects have very hard shells for protection

RABBIT



TODAY

- Grassy fields
- Live in burrows
- Eat grasses and small plants

...in 100,000 YEARS

- All grasses and plants less than 4 feet tall have poisons that rabbits cannot eat
- Plants more than 4 feet tall are ok to eat, but have very tough bark
- Females start to select males with crazy-colored fur to breed with

FROG



TODAY

- Swamps and wetlands
 - Eats bugs
 - Warm climates
- Blends in with surrounding plants

...in 100,000 YEARS

- Males become more aggressive and are defending their territories by butting heads
- Changes in the atmosphere have caused plants to produce blue and purple pigments
- Insects have very hard shells for protection
- Climate has cooled to almost freezing

PIGEON



TODAY

- Strong flyer
- Groups together for safety
 - Eats small seeds

...in 100,000 YEARS

- Live on small islands with no predators
- No seeds to eat on islands, only medium-sized crabs with huge claws
- Females select males with strange plumage (feathers)