Part 2 Natural Selection

Name:

Part 2 Lesson 1 The Galapagos

Due:

Adaptive radiation: A process in which organisms _____rapidly from an ancestral species into a multitude of _____, particularly when a _____ in the environment makes new resources available, alters biotic interactions or opens new environmental niches.

Describe some of the finches that Darwin was able to observe and collect on his journey to the Galapagos Islands on board the H.M.S. _____

Teacher will break your class into six groups. Research the Galapagos Islands for 15 minutes.

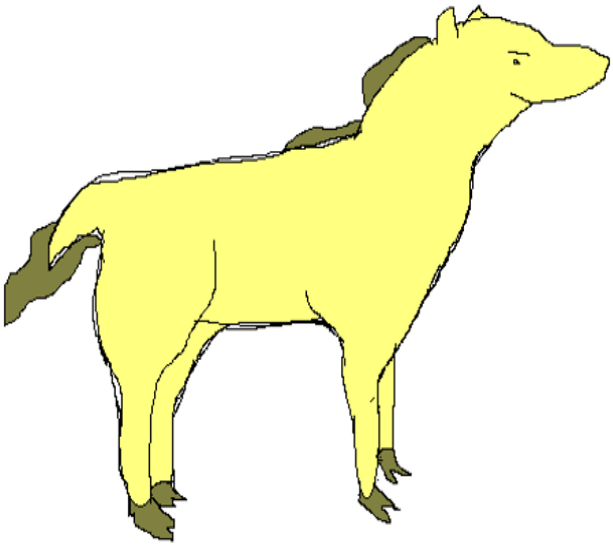
- Be prepared to present to the class in any means you want.
- https://www.livescience.com/62902-galapagos-islands.html

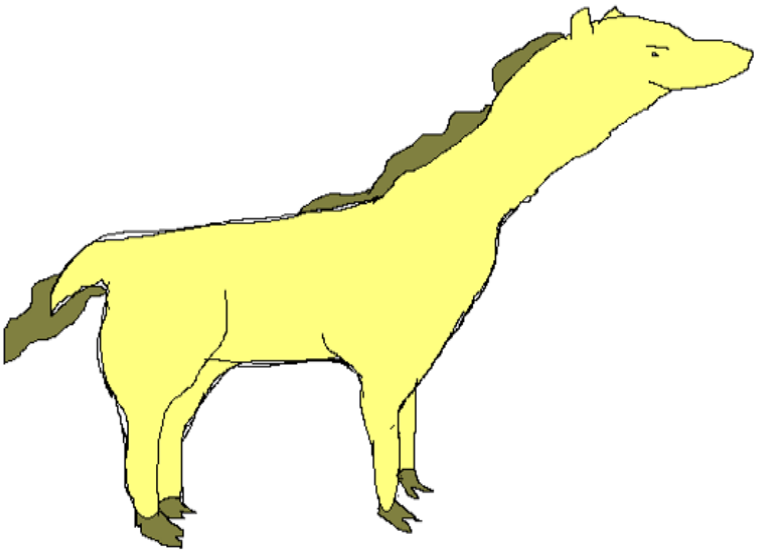
Research for your chosen topics 1-6

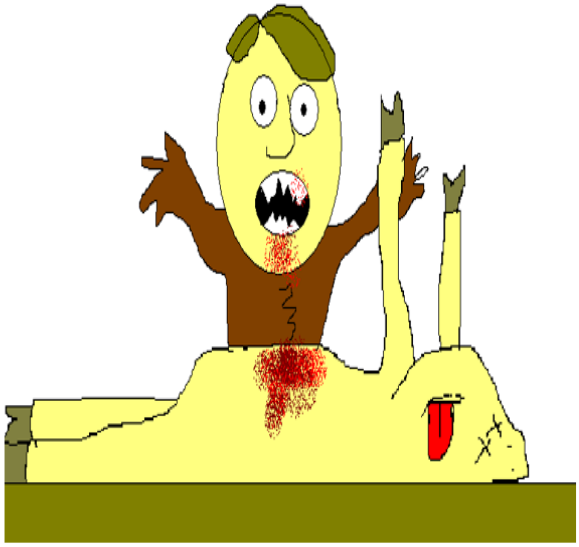
#1) Geography and History	#2) Geology
3) Climate	#4) Plants
#5) Animals	#6) Environmental Threats and Conservation Efforts

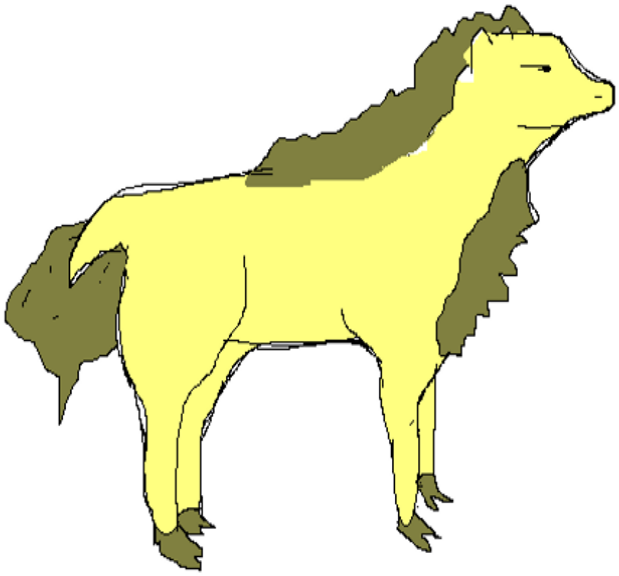
Part 2 Lesson 2

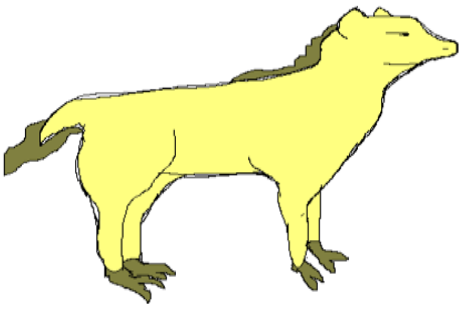
Describe some of the Hypotheticus beasts below as described in the slideshow. How have they changed?











_____ + _____+ _____ = Natural Selection.

What animal adaptation are you choosing for your real story of evolution / How did that animal end up with that adaptation? Animal and Adaptation=_____

_____

Brief Description of your story

Visual of main characters

Title of the story:_____ **Authors**_____

How did the animal change?_____

_____

_____

_____

Did you like the story (1- 10 scale)? **NO 1 2 3 4 5 6 7 8 9 10 Yes**

Why did you give it that rating?_____

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Title of the story:_____ **Authors**_____

How did the animal change?_____

_____

_____

_____

Did you like the story (1- 10 scale)? **NO 1 2 3 4 5 6 7 8 9 10 Yes**

Why did you give it that rating?_____

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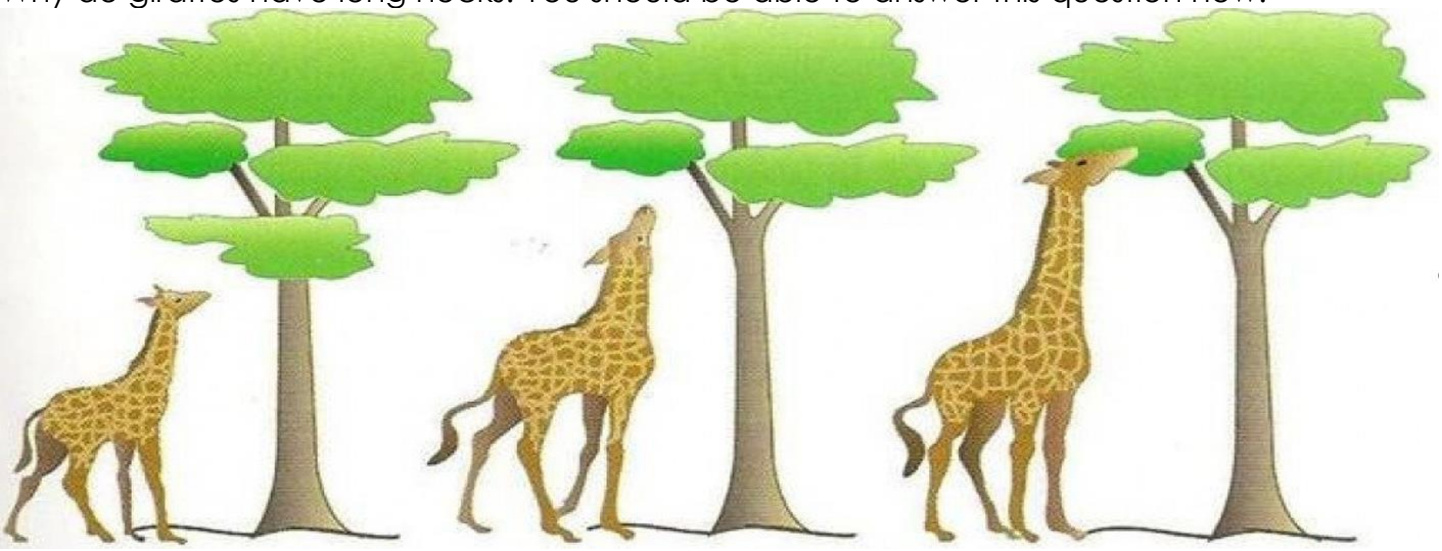
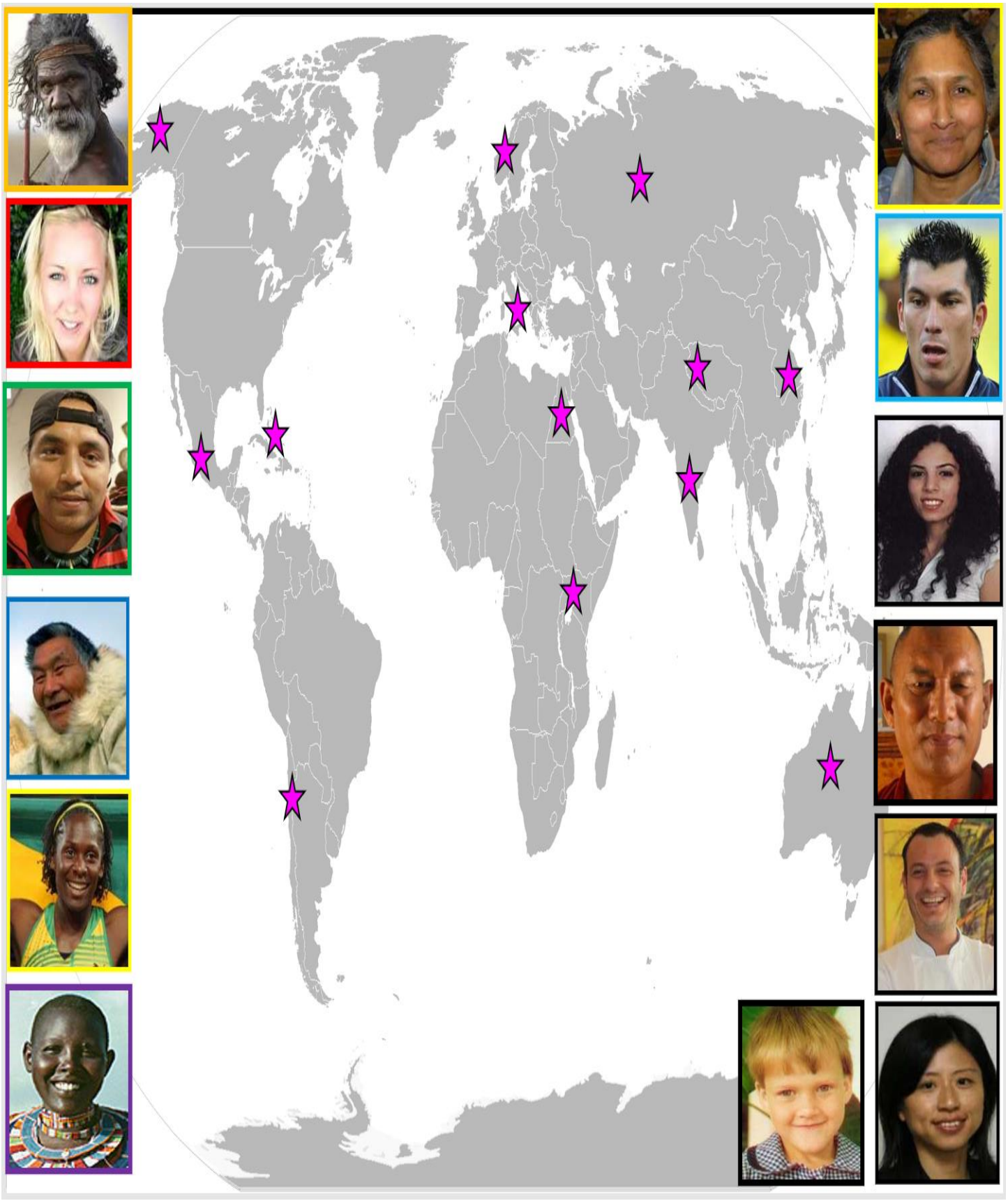
Part 2 Lesson 3

Why do giraffes have long necks. You should be able to answer this question now.



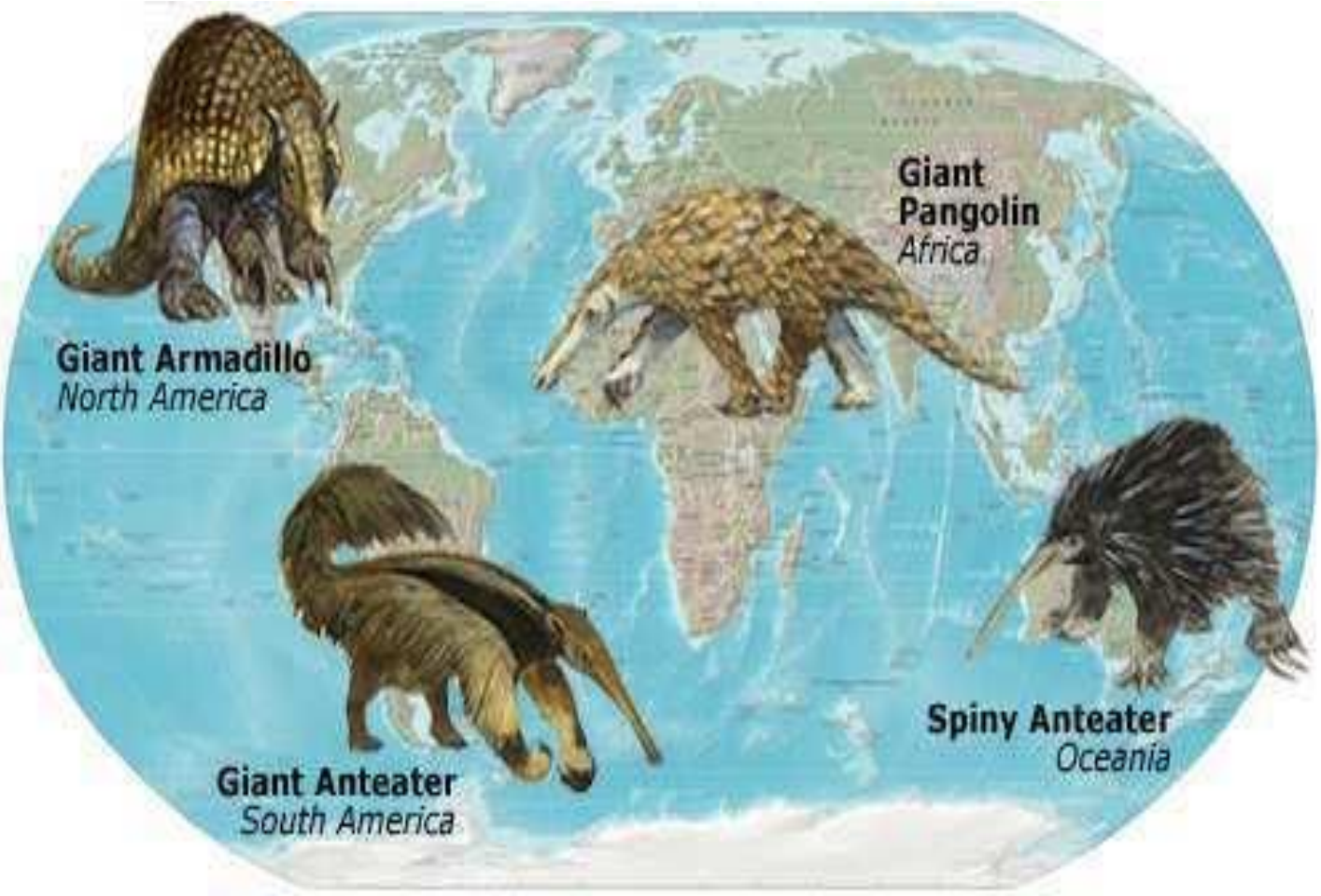
Divergent evolution: When a group from a specific population develops into a _____ species.

Draw an arrow from the person the star/their native country of origin as described in the slideshow.

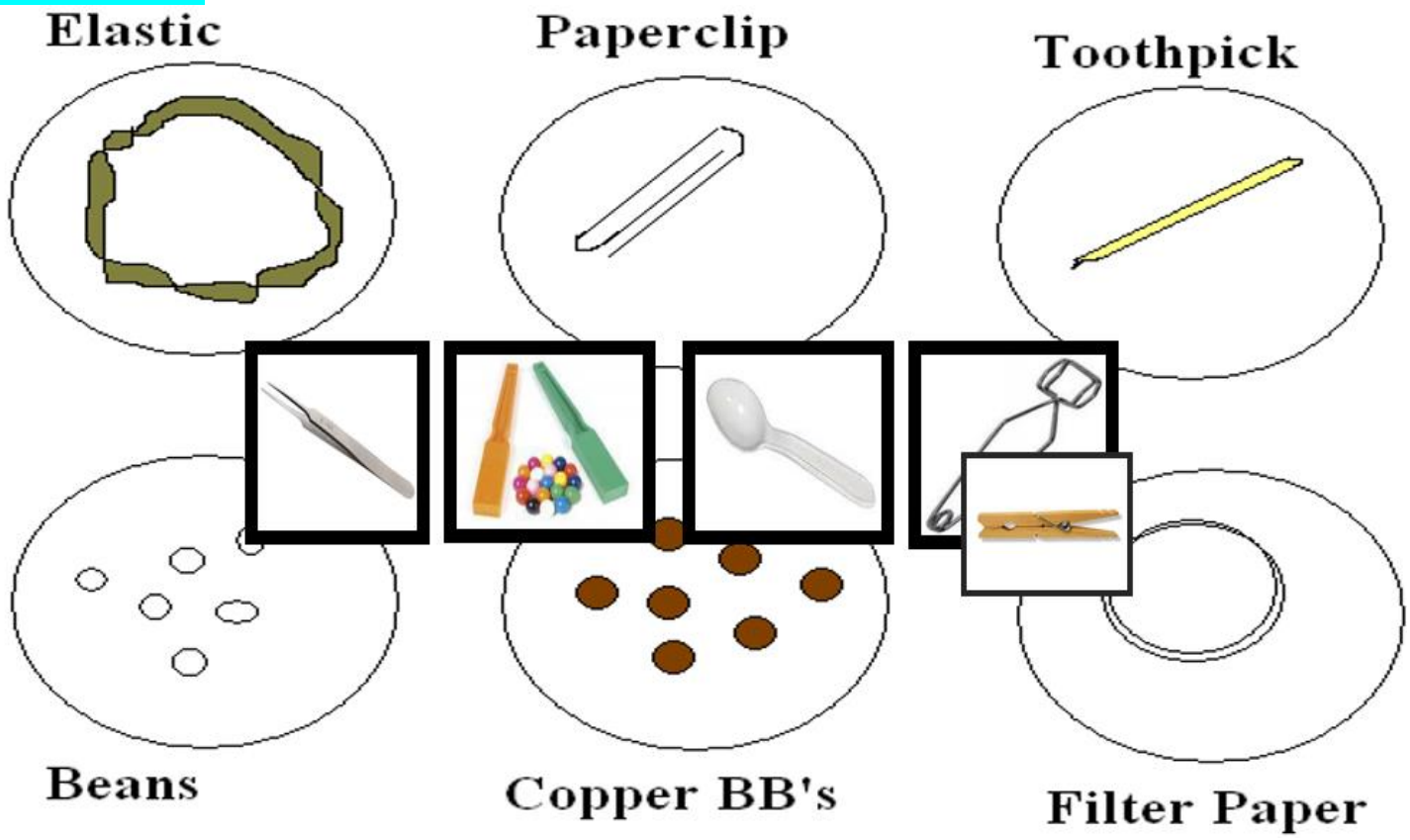


Convergent Evolution: _____evolved structures in _____ animals.

Please describe how this picture represents convergent evolution.



Part 2 Lesson 4



Name the four types of beaks in the beak simulation? What types of seeds was each beak good at collecting? Was there a beak that was the overall best, and was there a beak that was the worst / would likely lead to extinction?

What did the bird beak activity tell us about natural selection?

Part 2 Lesson 5

Limiting Factors: A factor that causes a population to _____ in size.

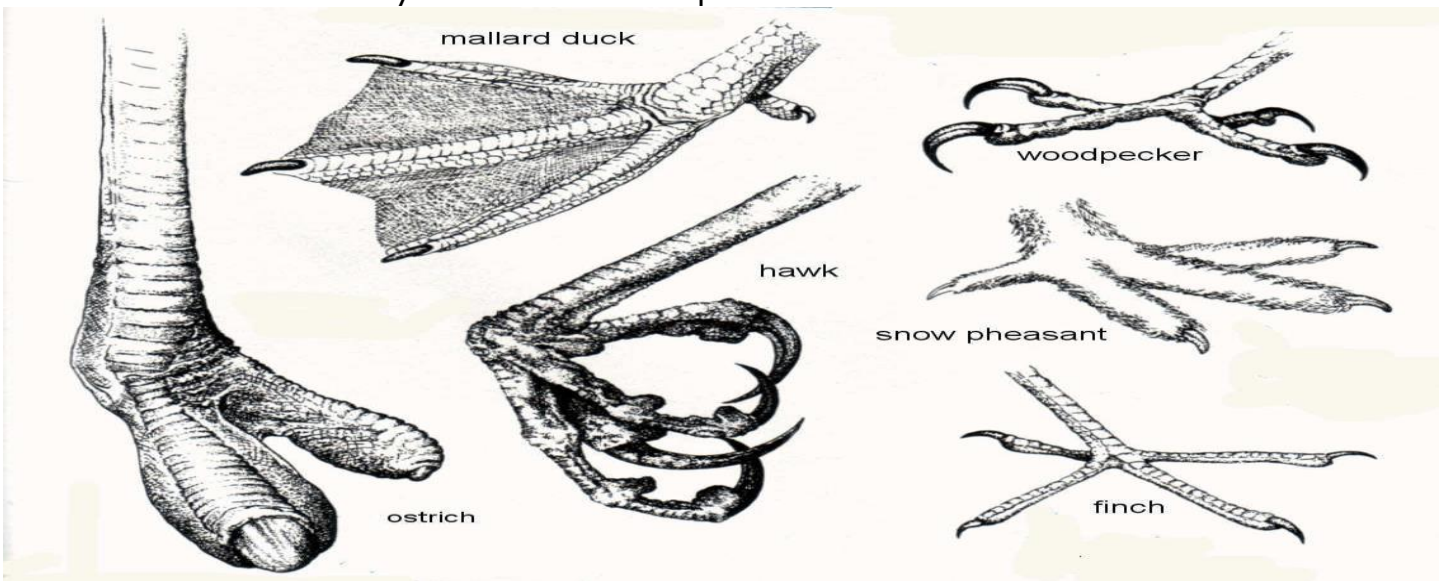
Which is a density dependent, and which is a density independent factor?

Disease, Parasites, Predators, Competition Answer=	Sunlight, Water, Temperature, Answer=

R Species	K Species
Organism is very small size	Large Organism
Energy to make a new organism is low	Energy to make a new organism is high
Many babies made at once	Low number of babies made at a time
Early maturity	Long time for maturity
Short Life	Long Life
Each individual reproduces once and then dies	Individuals can reproduce many times throughout life

Name a species that is a R species and why? Name a species that is a K species and why? What are humans?

Describe how the types of feet below allow the bird to be successful at….? Describe why this is an adaptation.



Part 2 Lesson 6

Coevolution: The evolution of _____ or more species, each adapting to changes in the other.

These ecological relationships include:
- Predator/prey and parasite/host
- Competitive species
- Mutualistic species

Mutualism: Both organisms _____

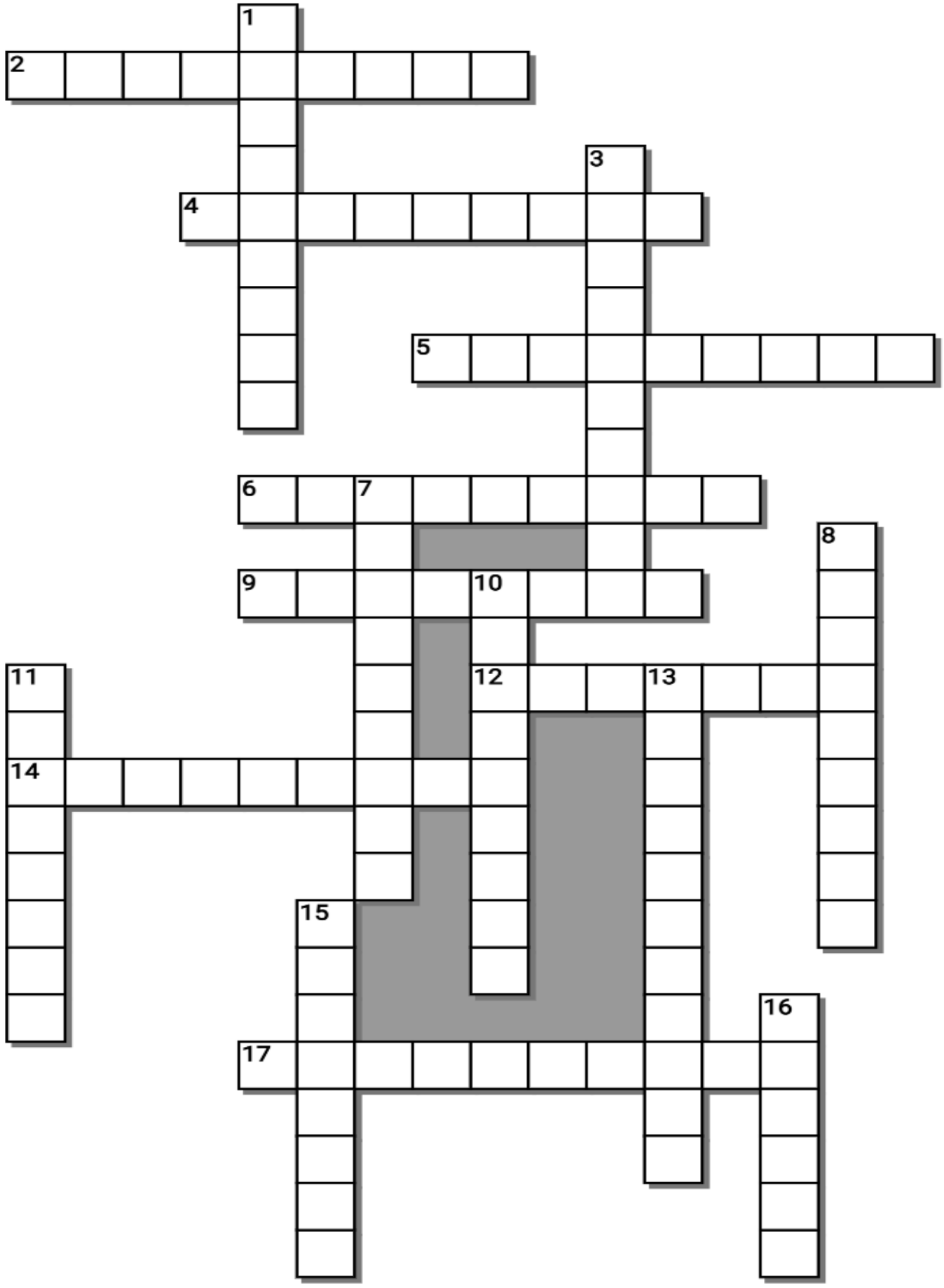
Types of mutualisms
- Trophic mutualism: Both species help _____ each other.
  - -Usually nutrient related.
- -Cleaning symbiosis: One species gets food and shelter, the other has _____ removed.

-Defensive mutualisms: One species _____ the other and gets some benefits for its help.
-Dispersive mutualisms: One species receives food in exchange for moving the _____ or _____ of its partner.

What is a symbiosis? Describe each type of mutualism next to the picture. Give me some specific details.



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Across

2. The ecological interaction between two or more species where each species has a net benefit. Mutualism is a common type of ecological interaction.
4. _____ Islands: A volcanic archipelago in the Pacific Ocean. It's considered one of the world's foremost destinations for wildlife-viewing. A province of Ecuador, it lies about 1,000km off its coast. Its isolated terrain shelters a diversity of plant and animal species, many found nowhere else.
5. Natural _____: Adaptations to the environment that do well replace poor ones. Usually an advancement.
6. _____ Evolution: When a group from a specific population develops into a new species.
9. Variation + Many Offspring + _____ = Natural Selection.
12. Darwins _____: A group of about 18 species of passerine birds. They are well known for their remarkable diversity in beak form and function.
14. The change in the heritable characteristics of biological populations over successive generations. These characteristics are the expressions of genes that are passed on from parent to offspring during reproduction.
17. _____ mutualisms: One species receives food in exchange for moving the pollen or seeds of its partner.

Down

1. Adaptive _____: A process in which organisms diversify rapidly from an ancestral species into a multitude of new forms, particularly when a change in the environment makes new resources available, alters biotic interactions or opens new environmental niches.
3. _____ Evolution: Similar evolved structures in unrelated animals.
7. _____ + Many Offspring + Heredity = Natural Selection.
8. Variation + Many _____ + Heredity = Natural Selection.
10. _____ mutualisms: One species protects the other and gets some benefits for its help.
11. _____ symbiosis: One species gets food and shelter, the other has parasites removed.
13. The evolution of two or more species, each adapting to changes in the other.
15. _____ Factors: A factor that causes a population to decrease in size.
16. Darwin made many of his observations while traveling on the H.M.S _____ around the world.

----------Teacher can remove this word bank to make crossword more challenging----------

Possible Answers

BEAGLE, CLEANING, COEVOLUTION, CONVERGENT , DEFENSIVE, DISPERSIVE , DIVERGENT, EVOLUTION, FINCHES, GALAPAGOS, HEREDITY , LIMITING , MUTUALISM, OFFSPRING, RADIATION, SELECTION, VARIATION

Part 2 Natural Selection

Name:

Part 2 Lesson 1 The Galapagos

Due:

Adaptive radiation: A process in which organisms diversify rapidly from an ancestral species into a multitude of new forms, particularly when a change in the environment makes new resources available, alters biotic interactions or opens new environmental niches.

Describe some of the finches that Darwin was able to observe and collect on his journey to the Galapagos Islands when he traveled on the H.M.S. Beagle

Teacher will break your class into six groups. Research the Galapagos Islands for 15 minutes.

- Be prepared to present to the class in any means you want.
- https://www.livescience.com/62902-galapagos-islands.html

Research for your chosen topics 1-6

Answers will vary

#1) Geography and History	#2) Geology
3) Climate	#4) Plants
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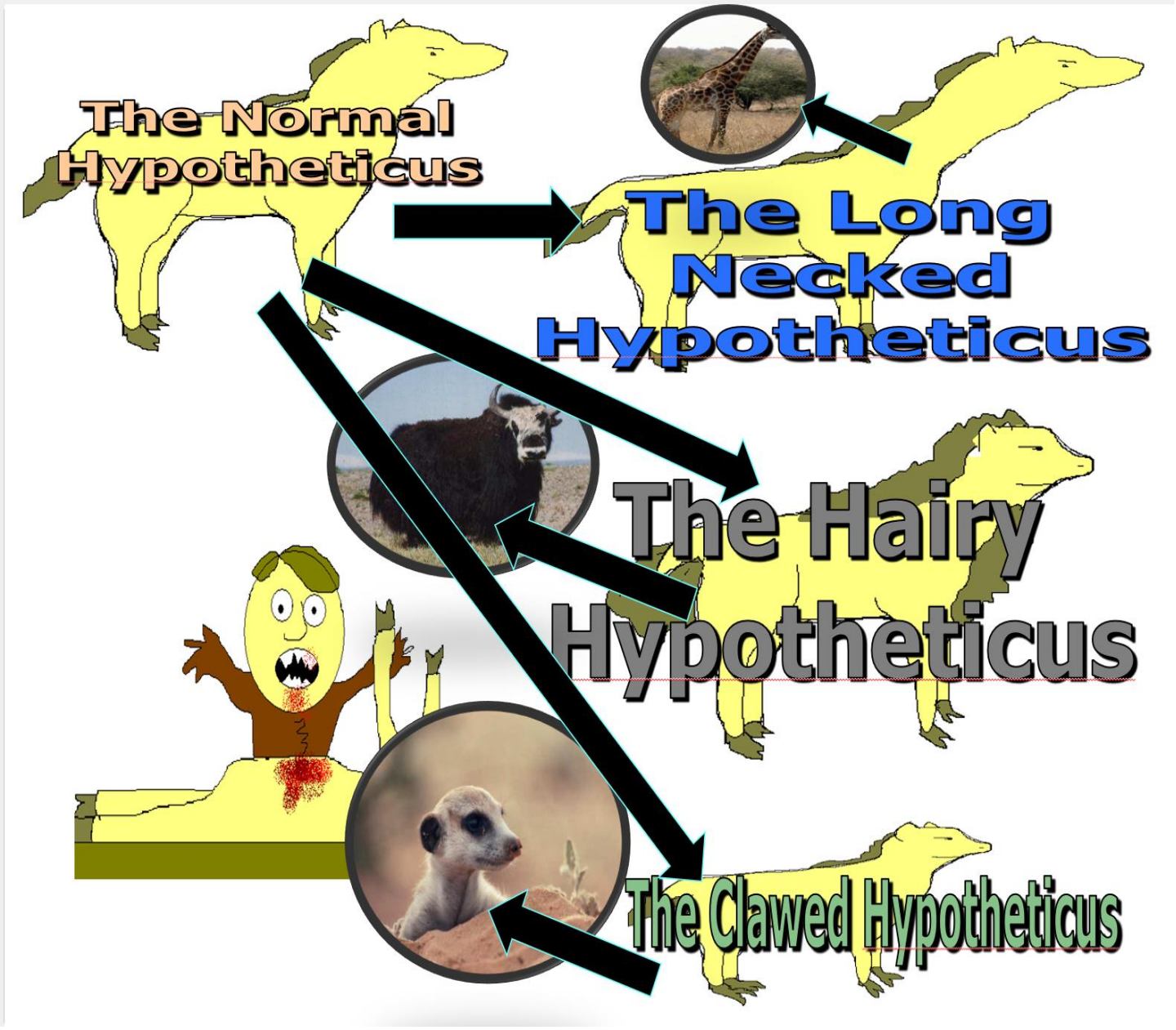
Part 2 Lesson 2

Describe some of the Hypotheticus beasts below as described in the slideshow. How have they changed?



Variation + Many Offspring + heredity = Natural Selection.

What animal adaptation are you choosing for your real story of evolution / How did that animal end up with that adaptation? Animal and Adaptation= Answers will vary but try and make sure story is evolution based / has some aspects of how animals actually change over time.

Brief Description of your story

Visual of main characters

Title of the story:_____ **Authors**_____

How did the animal change?_____

_____

_____

_____

Did you like the story (1- 10 scale)? **NO 1 2 3 4 5 6 7 8 9 10 Yes**

Why did you give it that rating?_____

_____

_____

_____

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How did the animal change?_____

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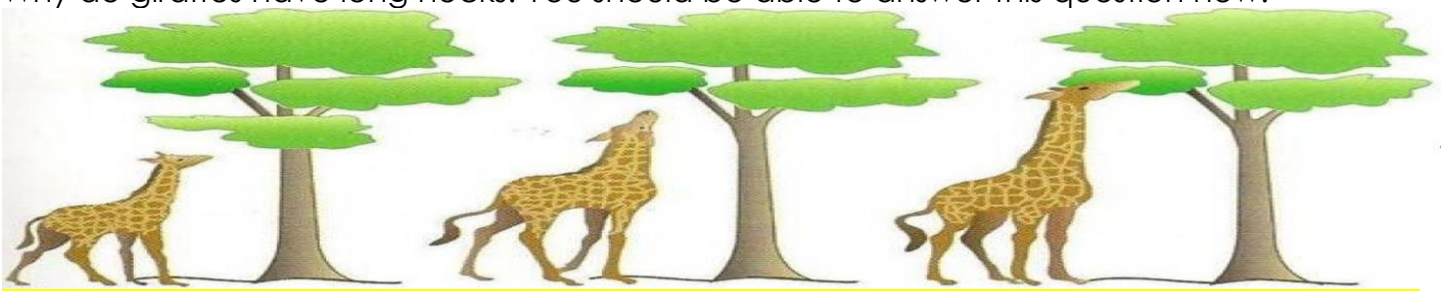
Part 2 Lesson 3

Why do giraffes have long necks. You should be able to answer this question now.



Since the days of Charles Darwin, the long necks of giraffes have been a textbook example of evolution. The theory goes that as giraffe ancestors competed for food, those with longer necks were able to reach higher leaves, getting a leg — or neck — up over shorter animals.
Note: There is some debate about the evolutionary theory. Some biologists believe the longer neck makes them better neck fighters when the males are trying to find a mate.

Divergent evolution: When a group from a specific population develops into a new species.

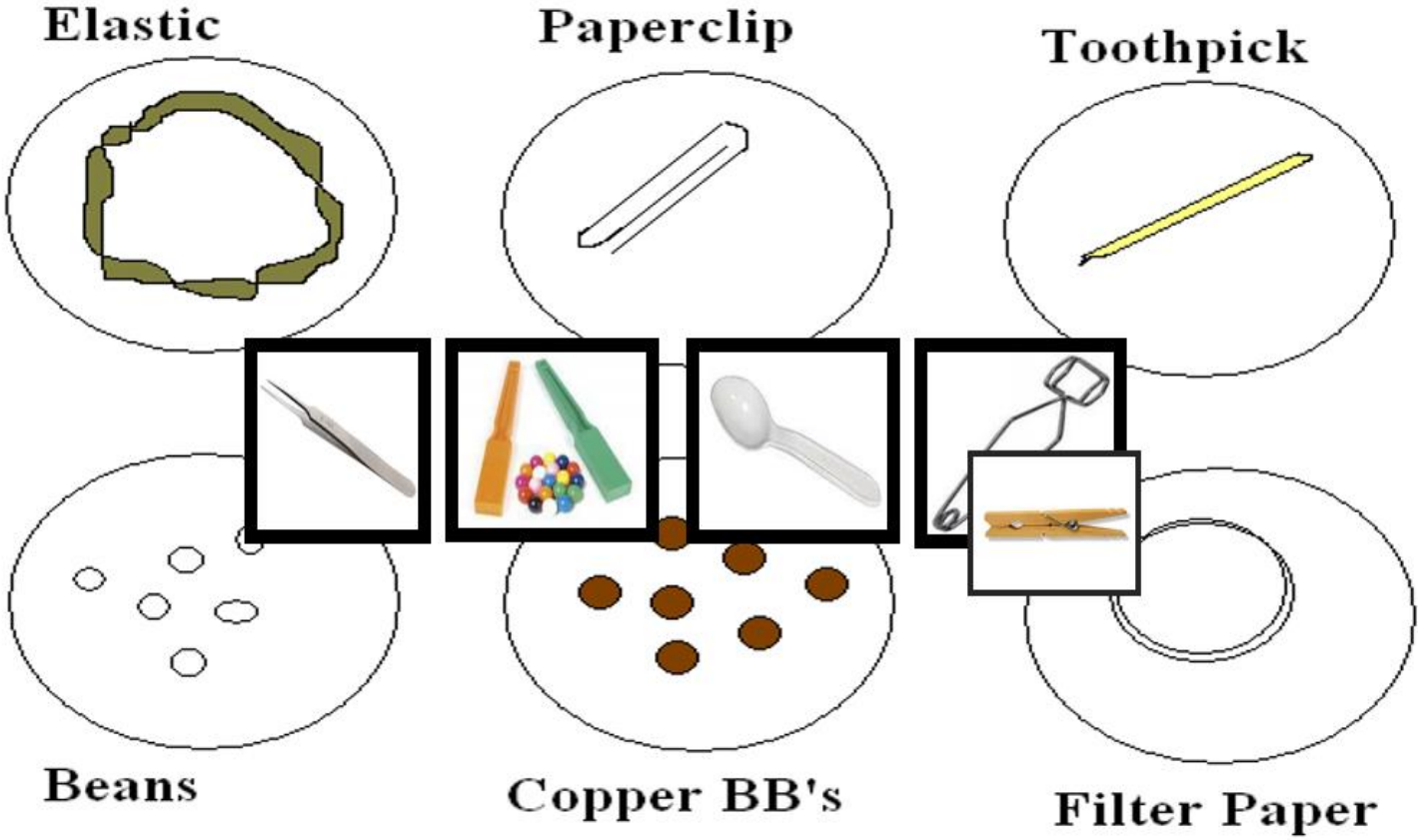
Draw an arrow from the person the star/their native country of origin as described in the slideshow.

Convergent Evolution: Similar evolved structures in unrelated animals.

Please describe how this picture represents convergent evolution.

Anteaters represent convergent evolution because they all evolved similar structures to help them find food such as ants and termites. Long snouts, tongues, and claws help to be more successful. They all evolved into something similar independently / not from any recent ancestor.

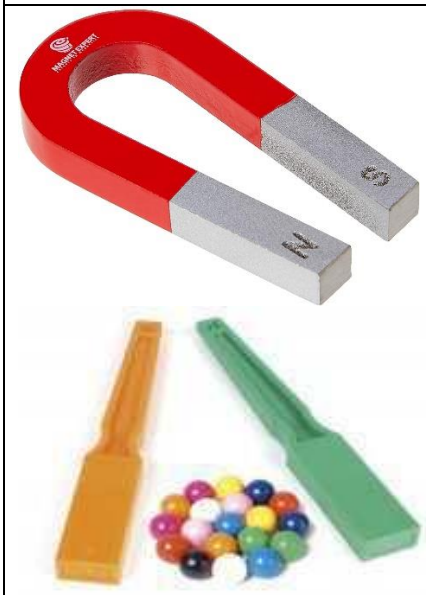
Part 2 Lesson 4



Name the four types of beaks in the beak simulation? What types of seeds was each beak good at collecting? Was there a beak that was the overall best, and was there a beak that was the worst / would likely lead to extinction?

Answers will vary but the spoon beak is a very versatile beak that was good at collection BB's, and Beans the best, but could also grab paper clips and elastics. It struggles with the papers.

Grabber beak was good at the elastic bands, and okay with the toothpicks and paper. Not good with the BB's and Beans.



Magnetic Beak was the best at the paperclips and BB's, but not very good on any other food source.

Tweezer beak was another all around good beak but not great at the BB's or Beans.

What did the bird beak activity tell us about natural selection?

Part 2 Lesson 5

Limiting Factors: A factor that causes a population to decrease in size.

Which is a density dependent, and which is a density independent factor?

Disease, Parasites, Predators, Competition Answer= Density Dependent (Living Factors such predators, parasites, competition with other species)	Sunlight, Water, Temperature, Answer= Density Independent (Non-living / Abiotic)

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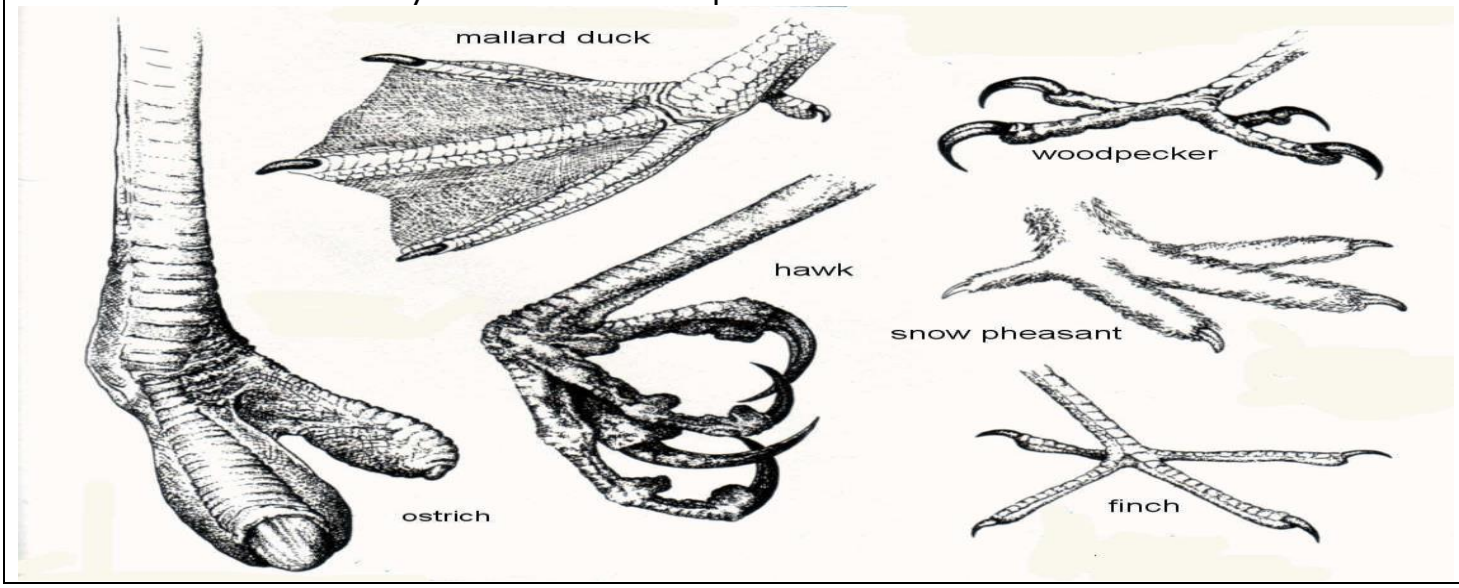
Name a species that is a R species and why? Name a species that is a K species and why? What are humans?

The Mosquito is an example of a R Species. It is small, can easily make hundreds of new mosquitos, has a short life, with early maturity. People are K Species that are large, takes lots of time and energy to make a new individual, has a long life where they can reproduce several times.

Describe how the types of feet below allow the bird to be successful at….? Describe why this is an adaptation.



Answers vill vary but the Ostrich has great feet for runing on the ground at high speeds, the ducks has webbed feet for paddling through the water, the Wood pecks can cling to the sides of trees, the Hawk can kill and grasp prey, the snow pheasant feet can stay warm in the cold, and the finch has all purpose feet and can perch well.

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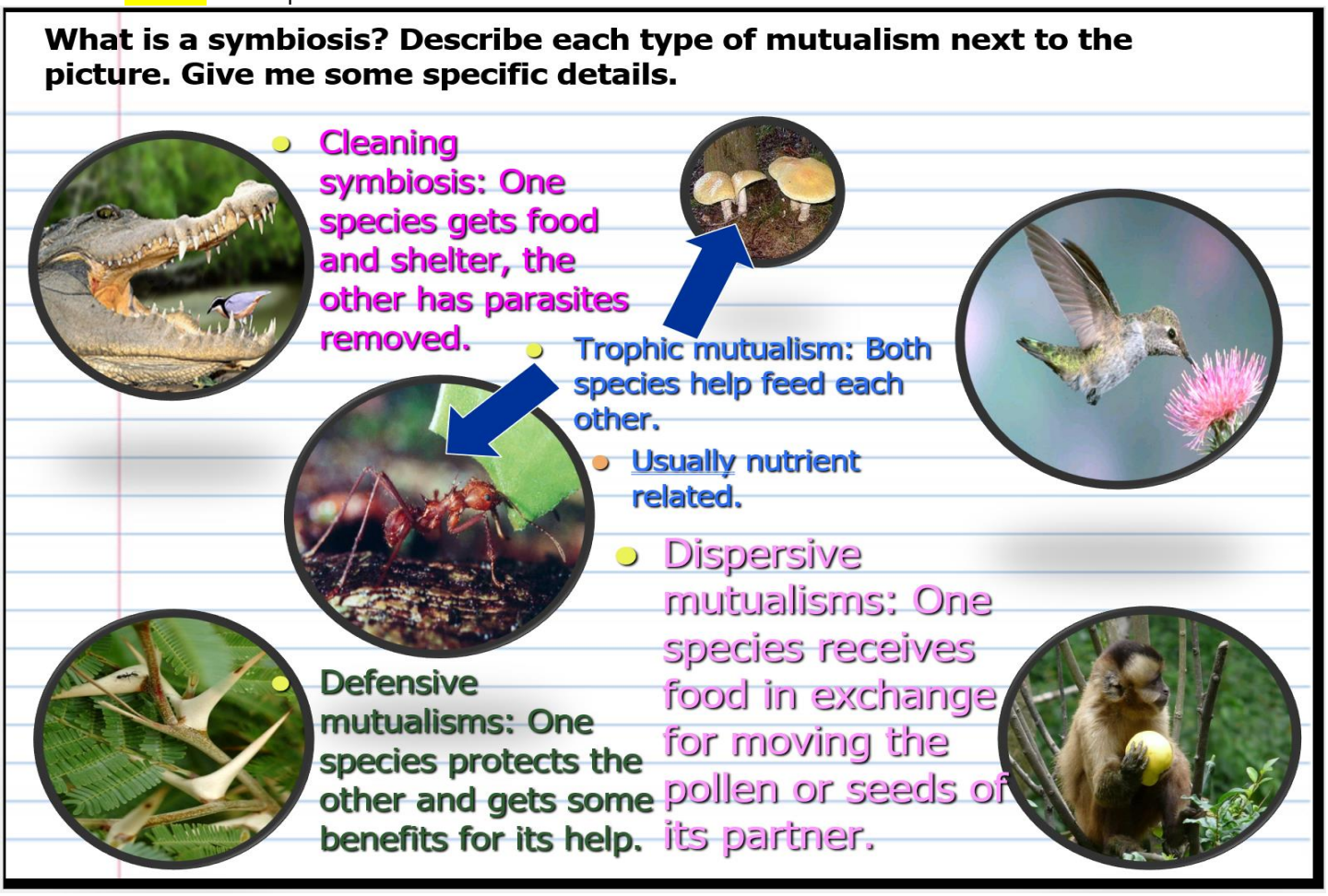

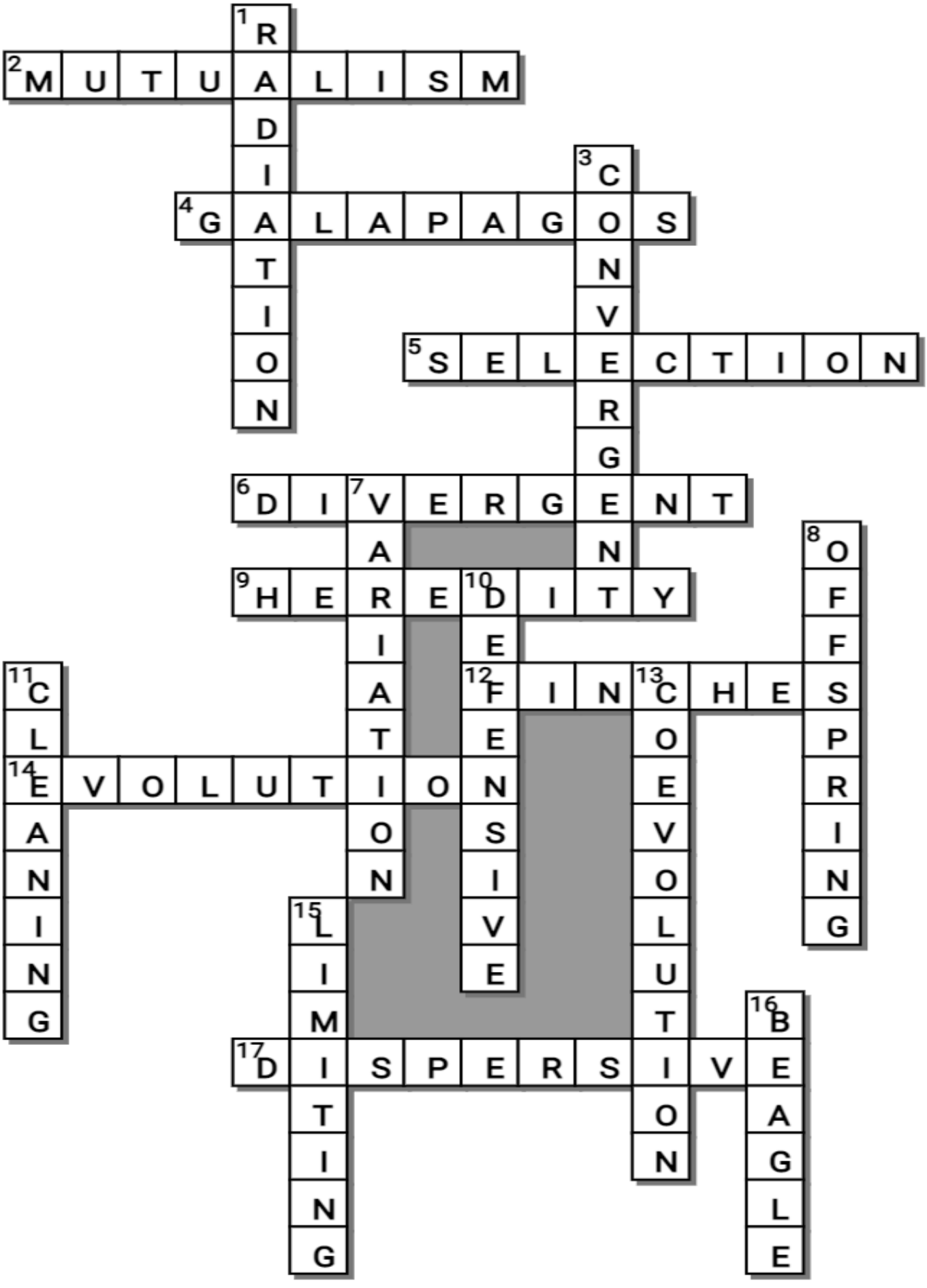
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14 EVOLUTION
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OVOLUTION
15 LIMITING
16 BEAGLE
17 DISPERSION

Across

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