

Name:

Period:

Genetics Performance Assessment

Your assignment is to demonstrate your knowledge of heredity and adaptations by completing one task from under each of the following headings.

Heredity

- 1) Choose one parent, grandparent, or older family member. Interview them about at least four traits that they see being passed through the family. After your interview gather pictures of family members and either in a PowerPoint or poster describe each of the four traits mentioned, who has had them, and how they were passed down. (Make sure to include the name and relationship of the person you interviewed.)

or

- 2) Create a list of eight traits for two imaginary parents. Provide a genotype and phenotype for each of the traits. (For example: Parent 1 - Brown eyes - BB; Parent 2 – Blue Eyes - bb) Create a Punnett square for each trait and predict the likely outcome for that trait. Then you will draw two offspring, one with all of the most likely traits and the second with all of the least likely traits.

Adaptations

- 1) Research three real life animals. In a PowerPoint or poster describe the habitat that you would find them, a picture of the organism in their habitat and four adaptations that they use to thrive in their specific environment.

or

- 2) Choose one of the three environments below. For that chosen environment draw a mythical creature that would fit into that environment. Include at least eight adaptations that it needs to survive in its environment and then describe how each of those specific adaptation helps them to survive.

1: This planet is dark and cold most of the time. It is very mountainous. It rains almost all day. Because of the wet, dark conditions, the only plants that grow well are small mosses and funguses. Animals on this planet include a type of mouse, a nocturnal hunting large cat, fish, and a variety of insects.

2: This planet is dry and hot. Most of the planet is flat. Water is found in underground streams but there is little water on the surface of the planet. Most of the planet's surface is covered in sand, although there are patches of dry grass. When plants can get their roots down into the water table, they grow into tall trees with leaves at the top but not along the trunk. Plants which are not connected to the water table are small and dry, but they are edible. Animals on this planet include insects, a species of birds which roost in the high trees, a sand-colored lizard and a type of rat.

3. This planet is tropical: wet and hot. Most of the planet is covered by rainforest. The planet is very flat. Water collects in large pools and lakes which have water in them all year 'round. A species of poisonous plant grows thickly on the ground. The spines of this plant are poisonous, and any animal which steps on one is sure to die. The vegetation is plentiful, and includes leaves, fruits and nuts. Animals include carnivorous snakes, varieties of insects, monkeys, fish and birds.

Rubric	Wow (100%)	Good (85%)	Could Be Better (70%)	Not Your Best Work (50%)
Heredity Option 1 (40 pts)	Demonstrates that the student taken time to talk with family members, includes four traits. Detailed explanation of each trait being passed along. Descriptions show mastery of how traits are inherited.	Demonstrates that the student taken time to talk with family members, includes at least three traits. Detailed explanation of each trait being passed along. Descriptions show mastery of how traits are inherited.	Demonstrates that the student taken time to talk with family members, includes at least three traits. Explains of each trait being passed. Descriptions show basic understanding of how traits are inherited.	Student has not taken the time to talk with family members. Has talked about two or fewer traits. Demonstrates little mastery of how traits are inherited.
Heredity Option 2 (40 pts)	Student has included eight traits for both parents & assigned genotypes correctly. Student has used all Punnett squares accurately and the two drawing are representative of predicted outcomes.	Student has included at least six traits for both parents & assigned genotypes correctly. Student has used six Punnett squares accurately and the two drawing are representative of predicted outcomes.	Student has included at least five traits for both parents & assigned genotypes correctly. Student has used five Punnett squares accurately and the two drawing are representative of predicted outcomes	Student has included less than four traits for both parents & assigned genotypes correctly. Student has used only four Punnett squares accurately and the drawings do not result from predicted outcomes.
Adaptations Option 1 (40 pts)	Student has accurately researched three animals, and in their own words describe their habitat and four adaptations, including pictures. Descriptions demonstrate mastery of adaptations.	Student has accurately researched three animals, and in their own words describe their habitat and three adaptations, including pictures. Descriptions demonstrate mastery of adaptations.	Student has accurately researched two animals, and in their own words describe their habitat and four adaptations, including pictures. Descriptions demonstrate basic grasp of adaptations.	Student research is incomplete, description are unclear and less than that three adaptations are included Descriptions demonstrate limited understanding of adaptations.
Adaptations Option 2 (40 pts)	Student creature is accurately adapted for the chosen and drawn environment. Student has included all 8 required adaptations. The adaptations described show mastery of the need and purpose of adaptations.	Student creature is accurately adapted for the chosen and drawn environment. Student has included at least 7 required adaptations. The adaptations described show mastery of the need and purpose of adaptations.	Student creature is accurately adapted for the chosen and drawn environment. Student has included at least 5 required adaptations. The adaptations described a basic understanding of the need and purpose of adaptations.	Student creature is not correctly adapted for the chosen and drawn environment. Student has included less than 5 required adaptations. The adaptations show limited understanding and purpose of adaptations.
Product (15 pts)	Student's final products show high levels of thoughtfulness, creativity, and are well organized.	Student's final products show thoughtfulness, creativity, and are well organized.	Student's final products show some thoughtfulness, creativity, and have some organization.	Student's final products show little thoughtfulness, creativity, and are disorganized.
Participation (5 pts)	Student is on task consistently, uses class time wisely.	Student is on task 95% of the time, needs little redirection.	Student is on task 90% of the time, needs little redirection	Student does not make good use of time.