**/100 points**

**Homework: Constructing a Species**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Create a new animal species by selecting characters and traits from the provided categories. Choose one or two traits per category and describe how each selected trait evolved, specifying whether it was through natural selection, sexual selection, or social selection. Additionally, explain one advantage and one disadvantage of each trait. Ensure that the chosen traits complement each other and do not contradict – your selections must work together to ensure survival and reproductive success for your species. (2 points per category – 78 points total)

**Species Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Invertebrate or Reptile or Bird or Mammal

| **Characters and traits** | **Choose the type of selection and EXPLAIN the evolution of the trait?** | **What is one benefit of having this trait?** | **What is one drawback of having this trait?** |
| --- | --- | --- | --- |
| **Body Size:**   1. Big 2. Small | Natural Sexual Social |  |  |
| **Penis Length:**   1. Long 2. Short | Natural Sexual Social |  |  |
| **Testicle Size:**   1. Large 2. Small | Natural Sexual Social |  |  |
| **Penis Type:**   1. Projectile Penis (hectocotylus) 2. Barbed 3. Double-headed penis 4. Two distinct penises 5. Prehensile glans 6. Permanently erect penis 7. Explosive penis | Natural Sexual Social |  |  |
| **Breeding Type:**   1. Seasonal 2. Continuous | Natural Sexual Social |  |  |
| **Reproduction Type:**   1. R-Selected 2. K-Selected | Natural Sexual Social |  |  |
| **Parental Care:**   1. Yes 2. No | Natural Sexual Social |  |  |
| **Mate Attraction Strategy (choose 2):**   1. Colour 2. Pheromone 3. Sounds 4. Dances 5. Nuptial Gift 6. Fight other males for access to female(s) | Natural Sexual Social |  |  |
| Natural Sexual Social |  |  |
| **Fertilization Strategy:**   1. Monogamy 2. Polygyny 3. Polyandry 4. Polygynandry 5. Promiscuous | Natural Sexual Social l |  |  |
| **Sexual Conflict - Before Mating**   1. Infanticide 2. Coercive Sex 3. None | Natural Sexual Social |  |  |
| **Sexual Conflict - During Mating**   1. Sperm Competition 2. Prolonged Copulation 3. None | Natural Sexual Social |  |  |
| **Sexual Conflict - After Mating**   1. Mate Guarding 2. Cryptic Female Choice 3. Postcopulatory Mounting 4. Mating Plug 5. Sperm Ejection 6. None | Natural Sexual Social |  |  |

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| --- |
| **To ensure compatibility among traits, it's likely that you wouldn't be able to create a male having all desired features. Such trade-offs are common in nature. Identify and explain three pairs of traits that would be incompatible and could not evolve simultaneously within the same species. (12 points – 4 points per pair).** |

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| --- | --- |
| **Use your selected characters and traits to draw in colour the male and female organisms of your constructed species. You will be graded on the included representation of your traits and their compatibility between the male and female, your artistic skills will not be evaluated.** | |
| **Male (5 points)** | **Female (5 points)** |