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What is a lek in the context of animal mating?

- ☐ A lek is a location where animals hunt and store food.
- ☐ A lek is a site where animals gather for hibernation and shelter.
- ☐ A lek is a territory marked for exclusive feeding purposes.
- ☐ A lek is a site where animals aggregate to attract mates through displays or calls, with no other purpose than mating.

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What is the expected outcome when altruism is present in a population?

- ☐ Altruism can result in increased competition and resource depletion within the population.
- ☐ Altruism can cause a decline in genetic diversity due to reduced individual reproduction.
- ☐ Altruism can lead to decreased survival and reproductive success of unrelated individuals.
- ☐ Altruism can lead to increased survival and reproductive success of related individuals, benefiting the population as a whole.

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How do plants exhibit social interactions?

- ☐ Plants can communicate through root systems to share nutrients, indicating social interactions.
- ☐ Plants can have defense responses when neighboring individuals are attacked by herbivores, indicating social interactions.
- ☐ Plants can release pheromones to attract pollinators, demonstrating reproductive interactions.
- ☐ Plants can alter their growth patterns based on sunlight availability, showing individual adaptation.

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Under what conditions do dominance hierarchies form?

- ☐ Dominance hierarchies form when group size is small and isolated.
- ☐ Dominance hierarchies form when individuals prefer solitary behavior.
- ☐ Dominance hierarchies form when resources are ephemeral or when group benefits outweigh the need for territory defense.
- ☐ Dominance hierarchies form when resources are stable and territory is easily defended.

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What is the Dilution Effect?

- ☐ The Dilution Effect describes the enhanced ability of a group to attract predators by increasing their visibility.
- ☐ The Dilution Effect refers to the reduced probability of predation for an individual in a group, as the risk is spread out among many.
- ☐ The Dilution Effect refers to the increased probability of survival for an individual in isolation due to reduced competition.
- ☐ The Dilution Effect relates to the concentration of resources around a single individual in a group.

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What is kin selection?

- ☐ The process where competition between unrelated individuals is maximized.
- ☐ The process where natural selection favors solitary survival.
- ☐ The process where indirect fitness through relatives is favored by natural selection.
- ☐ The process where individuals select mates based on physical traits.

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How is direct fitness favored?

- ☐ By helping a brother or half-brother successfully mate, allowing the brother to sire 6.1 offspring.
- ☐ Through direct selection.
- ☐ Through indirect selection (kin selection).
- ☐ Both the donor and recipient experience reduced fitness, which cannot be favored by natural selection.

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What roles do sterile castes play in eusocial species?

- ☐ They specialize in hunting for their own food.
- ☐ They focus on individual survival and reproduction.
- ☐ They engage in territorial disputes and mating rituals.
- ☐ They specialize in tasks such as defending and foraging for the group or caring for offspring.

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What characterizes cooperation in social interactions?

- ☐ Only the donor experiences increased fitness.
- ☐ Both the donor and recipient experience reduced fitness.
- ☐ Both the donor and recipient experience increased fitness.
- ☐ The donor loses fitness while the recipient benefits.

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What is the average number of offspring for subordinate males?

- ☐ 1 offspring on average.
- ☐ 5 offspring on average.
- ☐ 0 offspring.
- ☐ 2 offspring on average.

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What is the relationship between resource abundance and territorial behavior?

- ☐ When resources are limited, territorial behavior becomes more aggressive.
- ☐ When resources are abundant, the benefit of defending a territory diminishes, leading to less territorial behavior.
- ☐ When resources are scarce, territorial behavior increases.
- ☐ When resources are depleted, territorial behavior intensifies.

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How does haplodiploidy affect the evolution of eusociality?

- ☐ It establishes equal relatedness, promoting solitary behavior.
- ☐ It creates strong asymmetries in coefficients of relatedness, favoring the evolution of eusocial behavior.
- ☐ It creates uniform relatedness, favoring individual reproduction.
- ☐ It reduces genetic diversity, hindering the evolution of eusocial behavior.

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How does socializing improve mating success in animals?

- ☐ Socializing decreases mating success by increasing competition among animals.
- ☐ Socializing enhances the ability to find mates, as animals may aggregate to attract potential partners through displays.
- ☐ Socializing enhances territorial defense, improving access to resources but not mates.
- ☐ Socializing reduces the need for mating displays as animals find partners independently.

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What is inclusive fitness?

- ☐ The sum of an individual's direct and indirect fitness.
- ☐ The combination of an individual's personal and environmental fitness.
- ☐ The total of an individual's reproductive and survival fitness.
- ☐ The sum of an individual's direct and competitive fitness.

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What factors influence whether animals maintain a territory?

- ☐ Animals are likely to maintain a territory if the resources are easily shared and the defense is unnecessary.
- ☐ Animals are likely to maintain a territory if the resource can be defended and the benefits of defending it outweigh the costs.
- ☐ Animals are likely to maintain a territory if the resources are scarce and difficult to defend.
- ☐ Animals are likely to maintain a territory if the costs of defending it are high and the benefits are minimal.

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What is the optimal group size for yellow baboons?

- ☐ The optimal group size for yellow baboons ranges from 50-75 individuals, which minimizes stress and competition.
- ☐ The optimal group size for yellow baboons is 100-150 individuals, maximizing resource use.
- ☐ The optimal group size for yellow baboons is 2-5 individuals, reducing social interaction.
- ☐ The optimal group size for yellow baboons is 20-30 individuals, promoting solitary behavior.

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What is the significance of the term 'ephemeral' in resource availability?

- ☐ Ephemeral resources are predictable and maintain consistent hierarchies.
- ☐ Ephemeral resources are temporary and can lead to the formation of dominance hierarchies when they are present.
- ☐ Ephemeral resources are permanent and lead to stable territories.
- ☐ Ephemeral resources are abundant and reduce territorial behavior.

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What is the impact of social interactions on fitness?

- ☐ Interactions always increase the fitness of both participants.
- ☐ Interactions can positively or negatively affect the fitness of both the donor and recipient.
- ☐ Interactions have no impact on the fitness of either party.
- ☐ Interactions only affect the fitness of the donor.

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What is the coefficient of relatedness between siblings?

- ☐ 0.25, indicating a 25% probability of receiving the same gene from a parent.
- ☐ 0.5, indicating a 50% probability of receiving the same gene from a parent.
- ☐ 1.0, indicating a 100% probability of receiving the same gene from a parent.
- ☐ 0.75, indicating a 75% probability of receiving the same gene from a parent.

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How do plants distinguish between relatives and non-relatives?

- ☐ Some plant species can recognize relatives and alter their growth strategies accordingly, often allocating less energy to competition against relatives.
- ☐ Plants can recognize relatives through genetic matching and increase resource allocation to them.
- ☐ Plants distinguish relatives by size and proximity, favoring non-relatives for resource allocation.
- ☐ Some plant species can identify relatives using pheromones and enhance their defense mechanisms.

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What is the primary advantage of the Many-Eyes Effect in predator detection?

- ☐ The primary advantage is that it enables more efficient communication among group members.
- ☐ The primary advantage is that it allows for quicker detection of predators, enabling better evasive actions by the group.
- ☐ The primary advantage is that it enhances individual hunting skills for better prey capture.
- ☐ The primary advantage is that it allows for better resource allocation within the group.

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What is the relationship between group size and parasite infection risk?

- ☐ Smaller group sizes can lead to higher parasite infection rates due to increased competition.
- ☐ Group size has no impact on the risk of parasite infection.
- ☐ Larger group sizes reduce the risk of parasite infection due to isolation.
- ☐ Larger group sizes can lead to a higher risk of parasite infection due to easier spread among individuals.

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How do social behaviors relate to evolutionary processes?

- ☐ Social behaviors are entirely learned and not subject to evolutionary change.
- ☐ Social behaviors are fixed and cannot be modified by natural selection.
- ☐ Social behaviors are random and unrelated to genetic factors.
- ☐ Social behaviors are influenced by genetic factors and are subject to evolutionary modification through natural selection.

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What is a linear dominance hierarchy?

- ☐ A ranking system based on age rather than dominance.
- ☐ A hierarchy where lower-ranked members dominate higher-ranked ones.
- ☐ A system where all members share equal status and resources.
- ☐ A ranking system where the first-ranked member dominates all others, the second-ranked dominates all but the first, and so on.

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What is the role of dominance hierarchies in social interactions?

- ☐ Once established, dominance hierarchies are constantly challenged and reformed.
- ☐ Once established, dominance hierarchies are determined by random chance.
- ☐ Once established, dominance hierarchies are ignored in subsequent interactions.
- ☐ Once established, dominance hierarchies resolve subsequent contests based on social ranking.

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What is the coefficient of relatedness between an individual and its offspring?

- ☐ 0.75, indicating they share 75% of their genes.
- ☐ 1.0, indicating they share all of their genes.
- ☐ 0.25, indicating they share 25% of their genes.
- ☐ 0.5, indicating they share 50% of their genes.

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What is the average number of offspring for dominant males?

- ☐ 3.2 offspring on average.
- ☐ 6.1 offspring on average.
- ☐ 10.1 offspring on average.
- ☐ 8.5 offspring on average.

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What is the significance of sterile castes in eusocial species?

- ☐ They do not reproduce but contribute to the colony's success through specialized roles.
- ☐ They focus on individual survival without contributing to the colony.
- ☐ They compete for resources with reproductive members.
- ☐ They reproduce independently and establish new colonies.