

Advantages & Disadvantages Asexual & Sexual Reproduction



S1-1-07 Compare sexual and asexual reproduction in terms of their advantages and disadvantages for plant and animal species.

Sexual vs. Asexual Reproduction:

There are advantages and disadvantages with each kind of reproduction:

Asexual Reproduction:

Advantages:

- New organism IDENTICAL to the PARENT
 - Can be good if well ADAPTED to the ENVIRONMENT (BACTERIA)
- No need to find a PARTNER
 - Able to reproduce WHENEVER NEEDED.
- Much QUICKER than sexual reproduction
 - Some cells can reproduce in a matter of MINUTES
- Little to no ENERGY is used to PRODUCE/CARE FOR offspring
 - Offspring are usually able to SURVIVE on their OWN.

Sexual vs. Asexual Reproduction:

Asexual Reproduction:

Disadvantages:

- NO GENETIC VARIATION
 - The organism cannot ADAPT to environment.
- Only ONE PARENT to care for offspring if required.
 - Often the parents DO NOT care for offspring, lowering CHANCES of SURVIVAL
- Species runs risk of EXTINCTION due to CATASTROPHE.
 - Irish POTATOES in 1840's → overrun by DISEASE



Sexual vs. Asexual Reproduction:

Sexual Reproduction:

Advantages:

- Offspring have TRAITS from BOTH parents (GENETIC VARIATION)
 - The organism is able to ADAPT to environment
- TWO PARENTS to care for offspring
 - INCREASED chance of SURVIVAL of offspring
- GENETIC VARIATION ensures a higher SURVIVAL RATE

Sexual vs. Asexual Reproduction:

Sexual Reproduction:

Disadvantages:

- Finding a PARTNER (must have MALE and FEMALE GAMETES)
 - Requires TIME and ENERGY
- Results of MEIOSIS and FERTILIZATION are UNPREDICTABLE
 - Chances for ERRORS and MUTATIONS that may reduce chances of SURVIVAL.
- Must have ways to FERTILIZE and ATTRACT the opposite sex.

Adaptations for Reproductive Success:

There are many ways in which organisms have adapted to enhance the success of reproduction:

Behaviour:

- Parents often CARE for their offspring until they are READY to SURVIVE on their own.

Ex. HUMANS, PRIMATES, most MAMMALS.



Adaptations for Reproductive Success:

Appearance:

- Some animals have a certain APPEARANCE to ATTRACT the OPPOSITE SEX.

Ex. BIRDS, PRIMATES, HUMANS, etc.



Adaptations for Reproductive Success:

Mating Calls:

- Mating calls are used to ATTRACT the OPPOSITE SEX during MATING SEASON.

Ex. Elk-BUGLE, Birds-SING, Moose-“GRUNT”, etc.

Moose Mating Call

Elk Mating Call

Adaptations for Reproductive Success:

Chemical Cues:

- Sometimes, a certain SCENT (PHEROMONES) is used to attract mates.
- Occurs in most ANIMALS.



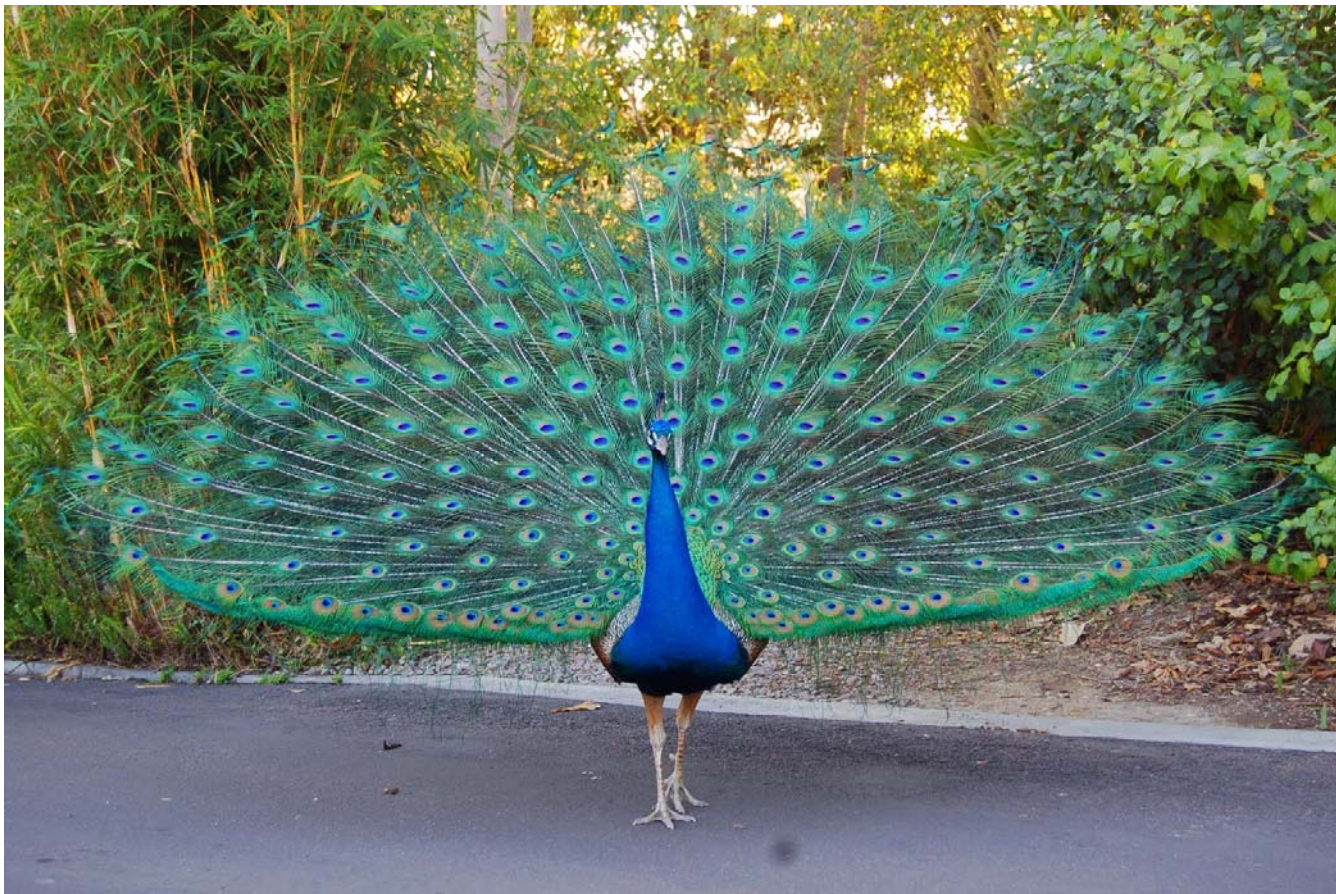
PHEROMONES

You Stink So Good.

Adaptations for Reproductive Success:

Courtship Behaviour:

- ACTING in a certain WAY to ATTRACT a mate.
- Ex. HUMANS, PEACOCKS, BULLFROGS, Fighting, etc.



Adaptations for Reproductive Success:

Number of Offspring Produced:

- Some organisms produce **LARGE NUMBERS** of **OFFSPRING**, so that there is a **HIGHER CHANCE** that some will **SURVIVE**.
- Ex. **INSECTS**, **REPTILES**, some **BIRDS**.



Adaptations for Reproductive Success:

Number of Gametes Produced:

- Many GAMETES are produced to ensure FERTILIZATION.
- Ex. FISH lay many EGGS, HUMANS (SPERM).

