Sex & Behaviour

Parental investment

1. Sperm are produced in greater number than eggs
2. Eggs have a food store and sperm do not
3. Female investment in caring for offspring is always greater than males (in egg structure in non-mammals or in the uterus/during gestation in mammals.
4. Parental investment is costly but increases probability of production and survival of young
5. Species can be classified as K-selected or r-selected
6. **K-selected species:**
    - Larger
    - Live longer
    - Mature more slowly
    - Reproduce many times in their lifetime
    - Produce a smaller number of larger offspring
    - Higher level of parental care
    - Many offspring have a high probability of surviving to adulthood
    - Tends to occur in stable environments
7. **r-selected species:**
    - Smaller
    - Shorter generation time
    - Mature more rapidly
    - Reproduce earlier in lifetime, often only once
    - Produce a large number of smaller offspring, each receiving a smaller energy input
    - Limited parental care
    - Most offspring will not reach adulthood
    - Tends to occur in unstable environments where species hasn't reached its reproductive capacity
8. **External fertilisation**: very large numbers of offspring are produced BUT gametes can be predated/not fertilised and few survive due to lack of parental care
9. **Internal fertilisation**: increased successful fertilisation and increased survival rate. Fewer eggs needed and offspring are protected internally. BUT you need to locate a mate (uses energy) and direct transfer of gametes from one partner to another is required.

Reproductive behaviours and mating systems in animals

1. **Monogamy** = mating of pairs of animals to the exclusion of all others
2. **Polygamy** = individuals of one sex have more than one mate
3. **Polygyny** = one male mating exclusively with a group of females
4. **Polyandry** = one female mating with a number of males in the same breeding season
5. Successful courtship behaviour in birds/fish can be a result of species-species sign stimuli and fixed action responses
6. **Species-species sign stimuli** = signals that indicate when an animal is most fertile. The signs are understood by other members of the species so increase successful reproduction
7. **Fixed action response** = response triggered by the sign stimuli—invariant, un-influenced by the environment and once triggered, must carry out to completion.
8. **Sexual selection** = selects for characteristics that increase chance of mating
9. Sexual selection can lead to **sexual dimorphism** (Males are usually more conspicuous than females in their markings, structures or behaviours)
10. **Reversed sexual dimorphism** = when the female is more conspicuous than the male
11. **Female choice** = females assess honest signals of males—these indicate favourable alleles that will increase chance of survival/fitness in offspring or a low parasite burden
12. **Lekking** = where males gather to display at a lek and female choice occurs
13. Dominant males in the centre of the lek, subordinates/juveniles at the fringes as 'satellite males'
14. **Male-male rivalry** = males fight for dominance to access females—can use large size or weaponry (eg:horns/antlers) through real or ritualised conflict.