

1-3 C4 Forms of Sexual Reproduction

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Science 9 –Topic 1.3 – Concept 4: Sexual reproduction takes many forms.

Sexual reproduction can vary based on:

1. Reproductive behaviors - the mating process by which gametes are brought together at same place and same time
2. Methods of fertilization - process by which egg and sperm join to form a new organism
3. Ways that offspring develop - the process by which an organism develops as an embryo

Methods of Fertilization



1. External Fertilization

- In external fertilization, sperm and egg join outside parents
- Ex. Many aquatic animals, such as Salmon

Advantages	Disadvantages
<ul style="list-style-type: none"> • Very <u>little energy</u> required to mate • <u>Large numbers</u> of <u>offspring</u> produced • Offspring can be <u>spread</u> widely in the environment - less <u>competition</u> between each other and parents 	<ul style="list-style-type: none"> • <u>Many gametes</u> will not survive • Many <u>egg</u> will not be <u>fertilized</u> • Offspring are often <u>not protected</u> by parents, so many of them <u>die</u>

2. Internal Fertilization

- In internal fertilization, sperm and egg join inside parents, embryo is nourished ^(Land) inside mother
- Ex. Human, Some aquatic animals such as Sharks, and most terrestrial animals

Advantages	Disadvantages
<ul style="list-style-type: none"> • Embryo <u>protected</u> from <u>predators</u> • Offspring more likely to <u>survive</u>, as many species will protect them while they <u>mature</u> 	<ul style="list-style-type: none"> • Much more <u>energy</u> required to find <u>mate</u> • <u>Fewer</u> zygotes produced, resulting in <u>less</u> offspring • More energy required to <u>raise</u> and <u>care</u> for offspring

Pollination for plant

- Most plants transfer male gametes as pollen. Pollen can be carried by wind or other organisms.

Once the egg is fertilized, cell division will only occur if the following conditions are met:

- Embryo must have enough nutrients.
- Temperature must not be too cold or too hot.
- There must be enough moisture so that embryo does not dry out.
- Embryo must be protected from predators and items in environment that can potentially harm it.

Sexual Reproduction Features: Mammals

- Development from fertilized egg to offspring occurs inside the female
- Female is also source of nourishment



Sexual Reproduction Features: Insects

- Reproduction in insects is usually sexual
- Some insects (bees) develop without fertilization:
 - Untertalized eggs become male
 - Fertilized eggs become female



Sexual Reproduction Features: Fungi

- Fungi (yeasts, moulds) reproduce Sexually and asexually

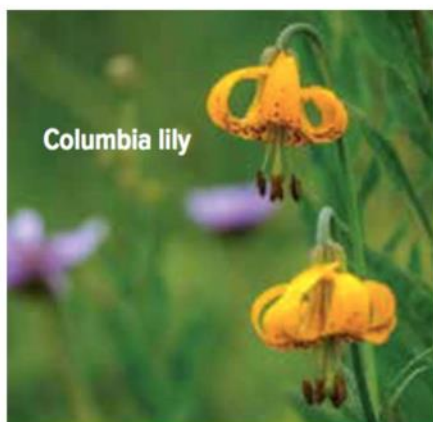


Sexual Reproduction Features: Fish, Frogs, and Birds

- Fertilized eggs develop offspring outside the female's body
- Offspring are released when eggs hatch

Sexual Reproduction Features: Plants

- Plants that grow from seeds require pollination for fertilization
- Pollen can be transferred by the wind or by animals (bees, birds)



Review

WB P. 26 - 27

WB P. 31-33.