

### Edexcel Biology GCSE Topics 3.1B to 3.3 - Reproduction

Flashcards

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### What is sexual reproduction?







#### What is sexual reproduction?

- Type of reproduction
- Involves the production of gametes by meiosis
- A gamete from each parent fuses to form a zygote
- Genetic information from each gamete is mixed so the resulting zygote is unique







### What are gametes?







#### What are gametes?

- Sex cells (sperm cells, egg cells)
- Haploid (half the number of chromosomes)







#### What is meiosis?







#### What is meiosis?

- Form of cell division involved in the formation of gametes
- Chromosome number is halved
- Involves two divisions







### What must occur prior to meiosis?







#### What must occur prior to meiosis?

#### Interphase







# What happens during the first stage of meiosis?







#### What happens during the first stage of meiosis?

- Chromosome pairs line up along the cell equator
- The pair of chromosomes are separated and move to opposite poles of the cell (the side to which each chromosome is pulled is random, creating variation)
- Chromosome number is halved







## What happens during the second stage of meiosis?







What happens during the second stage of meiosis?

- Chromosomes line up along the cell equator
- The chromatids are separated and move to opposite poles of the cell
- Four unique haploid gametes are produced







## Why is meiosis important for sexual reproduction? (2)







Why is meiosis important for sexual reproduction? (2)

- It increases genetic variation
- It ensures that the resultant zygote is diploid







## What is the advantage of sexual reproduction? (biology only)







### What is the advantage of sexual reproduction? (biology only)

It creates genetic variation, increasing the probability of a species adapting to and surviving environmental changes.







## Describe the disadvantages of sexual reproduction (2) (biology only)







### Describe the disadvantages of sexual reproduction (2) (biology only)

- Two parents are required. This makes reproduction difficult in endangered populations or in species which exhibit solitary lifestyles
- More time and energy is required so fewer offspring are produced







## What is asexual reproduction? (biology only)







#### What is asexual reproduction? (biology only)

- Type of reproduction
- Involves mitosis
- Produces genetically identical offspring known as daughter cells







## Describe the advantages of asexual reproduction (3) (biology only)







### Describe the advantages of asexual reproduction (3) (biology only)

- Only one parent is required
- Lots of offspring can be produced in a short period of time, enabling the rapid colonisation of an area and reducing competition from other species
- Requires less energy





## What is the disadvantage of asexual reproduction? (biology only)







What is the disadvantage of asexual reproduction? (biology only)

No genetic variation (except from spontaneous mutations) reducing the probability of a species being able to adapt to environmental change

