Edexcel Biology GCSE

Topics 3.1B to 3.3 - Reproduction

Flashcards

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?

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- 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?

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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)

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- 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