

GCSE Biology

Worksheet: Pros and cons of sexual and asexual reproduction

TIME 25 min	TOTAL 26 marks	CALCULATOR Allowed	DIFFICULTY Easy, Medium
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Topics: Pros and cons of sexual and asexual reproduction

NAME _____ **CLASS** _____ **DATE** _____

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Answer all questions in the spaces provided.
- In all calculations, show clearly how you work out your answer.
- The marks for questions are shown in brackets.

0 1

Sexual and asexual reproduction each have advantages and disadvantages.

0 1 . 1

Which is an advantage of sexual reproduction in a habitat where conditions often change?

Tick (✓) **one** box.

It is faster than asexual reproduction

☐

It needs only one parent

☐

It produces genetic variation

☐

It produces genetically identical offspring

☐

[1 mark]

0 1 . 2

Which is a disadvantage of asexual reproduction if a new disease appears?

Tick (✓) **one** box.

It needs two parents to be present

☐

It is slower than sexual reproduction

☐

Offspring show a lot of variation

☐

Offspring have little or no variation, so many could be affected in the same way

☐

[1 mark]

0 1 . 3

Give **one** advantage of asexual reproduction when conditions are favourable and stable.

.....

.....

[1 mark]

0 2

Some organisms reproduce sexually, some reproduce asexually and some can reproduce in both ways.

0 2 . 1

Which **two** are advantages of asexual reproduction?

Tick (✓) **two** boxes.

It involves meiosis

☐

It is faster than sexual reproduction

☐

It needs a mate

☐

Offspring show variation

☐

Only one parent is needed

☐

[2 marks]

0 2 . 2

Give **one** advantage of sexual reproduction.

.....

.....

[1 mark]

0 2 . 3

Daffodils can reproduce asexually by bulb division.

Name a plant that reproduces asexually using runners.

.....

.....

.....

.....

[1 mark]

0 2 . 4

Which organism reproduces asexually in the human host but sexually in the mosquito?

Tick (✓) **one** box.

HIV

☐

Malarial parasite

☐

Rose black spot fungus

☐

Salmonella bacterium

☐

[1 mark]

0 3

A fruit grower has a strawberry plant that produces very large, sweet fruit. Strawberry plants reproduce sexually by seeds and asexually by runners.

0 3 . 1

Explain why the grower produces new plants from runners rather than from seeds.

[3 marks]

0 3 . 2

Give **one** disadvantage of growing a whole field of strawberries that were all produced from runners of one plant.

[2 marks]

0 3 . 3

Plant breeders use sexual reproduction when they want to produce new varieties of strawberry.
Explain why.

.....

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.....

[2 marks]

0 4

Many fungi reproduce asexually by producing spores. They can also reproduce sexually.

0 4 . 1

A fungus is growing on a large supply of food.
Suggest **two** advantages to the fungus of reproducing asexually by spores in these conditions.

.....

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[2 marks]

0 4 . 2

Suggest why it is an advantage for a fungus to reproduce sexually when conditions change.

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.....

[2 marks]

0 4 . 3

Malarial parasites reproduce asexually inside the human host.
Suggest why asexual reproduction is an advantage to the parasite in the human host.

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[2 marks]

0 5

A dairy farmer has one cow that produces an excellent milk yield. The farmer wants to increase the number of cows in the herd with this high yield.

0 5 . 1

Explain **one** advantage and **one** disadvantage of breeding more cows from this cow using only asexual methods (cloning), compared with normal sexual reproduction with a bull.

.....

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.....

[2 marks]

0 6

Many sponges live fixed in one place on the sea bed as adults. They can reproduce asexually by budding, when a new sponge grows from the side of the parent. They can also reproduce sexually: the larvae produced can swim or drift in the water before settling down.

0 6 . 1

Suggest **one** advantage to a sponge of reproducing sexually rather than asexually by budding.

.....

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.....

.....

[2 marks]

0 6 . 2

Give **one** further advantage of sexual reproduction for this species, other than dispersal.

.....

.....

[1 mark]

END OF QUESTIONS

Original practice questions written to match the specification. Not produced by, affiliated with or endorsed by AQA.

Mark scheme

GCSE Biology · Worksheet: Pros and cons of sexual and asexual reproduction · 26 marks

Question 1 (3 marks)

01.1 [1 mark]

Correct: It produces genetic variation

01.2 [1 mark]

Correct: Offspring have little or no variation, so many could be affected in the same way

01.3 [1 mark]

Answer: It allows an organism to reproduce rapidly, without needing to find a mate

- reproduces rapidly / needs no mate to be found / many identical offspring can be produced (1)
-
-

Question 2 (5 marks)

02.1 [2 marks]

Correct: It is faster than sexual reproduction; Only one parent is needed

02.2 [1 mark]

Answer: It produces variation in the offspring

- produces variation (in the offspring) (1)

Notes: Allow 'gives a survival advantage if the environment changes'.

02.3 [1 mark]

Answer: Strawberry

- strawberry (1)

Notes: Allow any correct example, e.g. spider plant.

02.4 [1 mark]

Correct: Malarial parasite

Question 3 (7 marks)

03.1 [3 marks]

Answer: Runners are produced asexually, so the new plants are clones with the same large, sweet fruit; plants from seeds show variation and may not have these characteristics; runners are also quicker

- runners are produced by asexual reproduction / mitosis, so the new plants are genetically identical (clones) (1)
- so all the new plants will produce large, sweet fruit (1)
- plants from seeds show variation (so may not have the desired characteristics) (1)
- producing plants from runners is faster (1)

Any 3 of the points above.

03.2 [2 marks]

Answer: There is no variation, so if a disease or change in the environment affects one plant it will affect them all

- no (genetic) variation (1)
- (so) all could be killed by the same disease / all affected if the environment changes (1)

03.3 [2 marks]

Answer: Sexual reproduction produces variation, so offspring with new combinations of characteristics can be selected and bred

- sexual reproduction produces variation / new combinations of alleles (1)
 - (so) offspring with the desired characteristics can be selected (and bred) (1)
-

Question 4 (6 marks)

04.1 [2 marks]

Answer: Many identical offspring are produced quickly while conditions are favourable, and no mate is needed

- many offspring produced quickly / faster than sexual reproduction (1)
- only one parent needed / no need to find a mate (1)
- offspring are identical, so all are suited to the favourable conditions (1)
- more time and energy efficient (1)

Any 2 of the points above.

04.2 [2 marks]

Answer: Sexual reproduction produces variation, so some offspring may be better suited to the new conditions and survive (natural selection)

- produces variation (1)
- some offspring may be better suited to the new conditions and survive (by natural selection) (1)

04.3 [2 marks]

Answer: It produces large numbers of parasites very quickly without needing a mate, so they can infect many cells

- large numbers produced quickly (1)
- no need to find a mate / only one parent needed (1)

Question 5 (2 marks)

05.1 [2 marks]

Answer: Advantage: clones would be genetically identical to the excellent cow, so all her high-yield alleles are passed on (rather than only half, as with sexual reproduction). Disadvantage: there would be no genetic variation, so the whole herd could be equally vulnerable to a new disease

- advantage: clones are genetically identical to the excellent cow, so all her (high-yield) alleles are passed on, rather than only about half as with sexual reproduction (1)
- disadvantage: there would be no genetic variation among the clones, so the whole herd could be equally vulnerable to a new disease (1)

Question 6 (3 marks)

06.1 [2 marks]

Answer: Sexually produced larvae can disperse to new places, so the species can colonise new areas, unlike buds, which grow right next to the parent

- the (sexually produced) larvae can disperse / drift / swim to new locations (1)
- allowing the species to colonise new areas, which offspring produced by budding next to the parent could not do (1)

06.2 [1 mark]

Answer: It produces genetic variation among the offspring

- it produces genetic variation (among the offspring) (1)
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