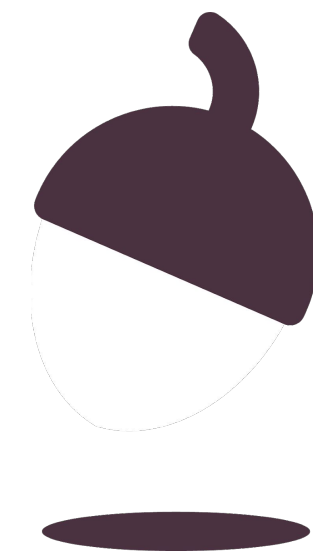


Combined Science - Biology - Key Stage 4

Genetic Engineering - Part 2

Mrs Gibbs



OAK
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Exam question

i) Biologists have used **genetic engineering** to improve corn.

What is genetic engineering? **(1)**

ii) During the genetic engineering process, biologists need to identify **genes**.

Why? **(2)**

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Put the stages of genetic engineering into the correct order

- The vector is used to transfer the gene into the other organism's cell at an early development stage
- The organism develops with the required characteristics
- The gene is inserted into a vector (a plasmid or a virus)
- Enzymes isolate the desired gene

1)

2)

3)

4)



Exam question

The picture shows a crop of corn growing in a field.

Farmers try to produce the largest yield of corn.

The corn plants grow tall and need space between rows.



Weeds grow in the spaces and insects quickly spread and damage the crop.

Farmers usually spray their crops with chemicals to kill the weeds and insects.

Scientists can genetically engineer corn plants to increase the yield.

Describe and explain the different ways in which the corn could be improved and describe the steps needed to genetically engineer the corn. **(6)**

The quality of written communication will be assessed in your answer to this question.

HINT: use the steps for genetic engineering you just wrote!



Exam question

This question is about genetic engineering.

The picture shows a crop of corn growing in a field.

Farmers try to produce the largest crop of corn.

The corn plants grow tall and need space between rows.

Weeds grow in the spaces and insects quickly spread and damage the crop.

Farmers usually spray their crops with chemicals to kill the weeds and insects.

Scientists can genetically engineer corn plants to improve them.

Write about the **features** that would be useful to add to the corn plant.

Suggest advantages **and** risks from genetically engineered corn. **(6)**

The quality of written communication will be assessed in your answer to this question.

