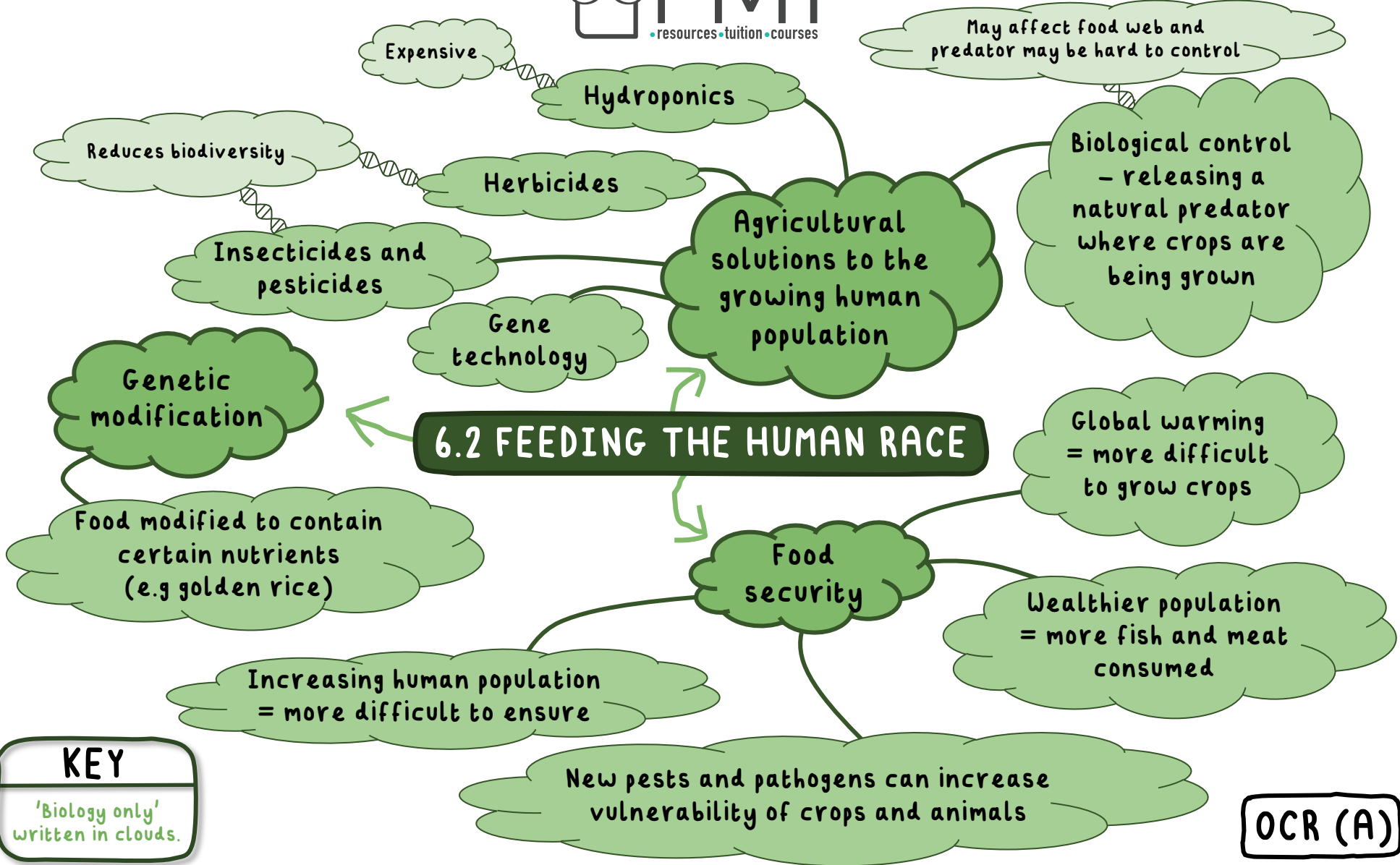


**6.2 FEEDING THE HUMAN RACE**

**Agricultural solutions to the growing human population**



**KEY**  
'Biology only'  
written in clouds.

**OCR (A)**



# 6.2 FEEDING THE HUMAN RACE

## Selective breeding

Breeding certain plants or animals which have desirable characteristics

### Advantages

Can produce more better quality food

Can create more gentle animals

### Disadvantages

Gene pool reduced

Unforeseen physical problems in animal

## Genetic engineering

Organism's genome modified by introducing desirable characteristics

Genes 'cut out' using restriction enzymes leaving 'sticky ends'

Plasmid with antibiotic marker gene cut using the same restriction enzyme

Plasmid and gene sticky ends joined together by DNA ligase enzymes

Plasmid with gene placed into vector

### Risks

Could lead to genetic engineering in humans

We do not understand the effects of GM crops on human health

Could create super weeds and pests

### Benefits

Can mass produce certain hormones

Improve crop yields

Produce crops with extra vitamins

GM crops may affect wild flowers and therefore insects

**KEY**  
'Higher tier only' written in orange.

**OCR (A)**