13.2 DNA Technology









1 What is the function of restriction enzymes?

- A they separate DNA fragments based on size
- they act like DNA scissors
- $\ensuremath{\,^{\circ}}$ they produce organism with altered DNA
- **D** they add nucleotides to DNA fragments





RECOMBINANT DNA

basis for genetic engineering
DNA that contains genes from more than 1 organism bacteria that produce human proteins (ex. insulin)
transgenic organisms have recombinant DNA plants resistant to frost, disease, or insects plants that produce medication or vitamins animals that have extra growth hormone or glow
transgenic animals are MUCH harder to create b/c changes to DNA must be done to the egg





3 MATA: Transgenic organisms have

- A "sticky ends"
- **B** traits they wouldn't have naturally
- c mutated DNA
- recombinant DNA
- **E** DNA from more than 1 organism

CLONing

- <u>clone</u> genetically identical copy of a gene or of an organism
- bacteria and plants are easy to clone
 mammals are much more difficult nucleus from unfertilized egg removed nucleus from animal being cloned implanted in egg if successful, egg begins to divide after a few days, egg implanted into uterus
 1997 Dolly cloned





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