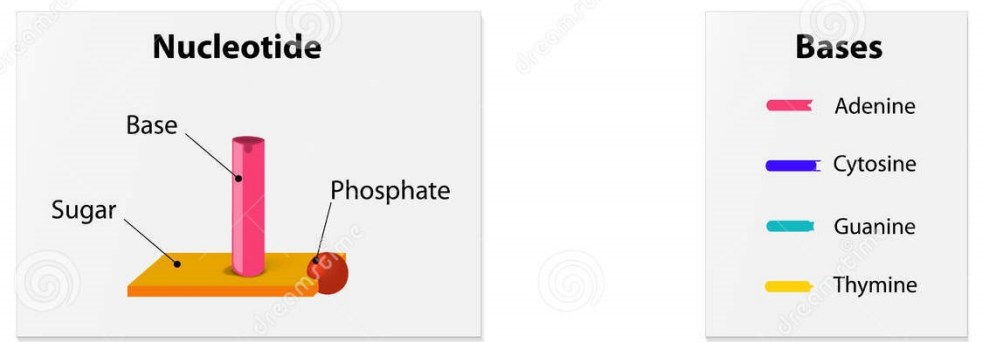
DNA and genes

Pictures similar to the one above and below, where kids would be able to annotate the parts



What is the genetic engineering?

Genetic engineering (GE) refers to the direct manipulation of DNA to alter an organism's characteristics in a particular way.

Examples of GE:

Add a picture of a "puzzled"/ curious/ thinking cube-man, or whatever you feel could be appropriate.

Steps of Genetic Engineering

1. _____ - DNA is extracted from an organism known to have a desired trait
2. _____ - the gene of interest is located and copied
3. _____ - the gene is modified to posses a desired characteristic (by replacing and altering regions)
4. _____ - the gene is delivered into the tissue of the cells, with the hope that it would enter the nucleolus
5. _____ - the modified cells are allowed to grow and cross breed

Genetic engineering : what are the advantages and disadvantages?

Advantages	Disadvantages

Insert some sort of graphics with grass/crops/

Something similar to this, but in the style of our website

Strawberry DNA extraction experiment

Materials:

1. Zip bag
2. Strawberry
3. Water
4. Dish-washing liquid
5. Salt
6. Isopropyl alcohol

Add some cool design outlines and pictures of maybe scientist stick-man, strawberries, DNA or anything you may deem cool looking and appropriate

Instructions:

1. Put a bottle of isopropyl alcohol in a freezer.
2. Extraction mixture preparation: measure 90 ml of water into a small glass container, measure and add 10 ml dish soap to the water, stir in a ¼-tsp salt and mix until the salt dissolves.
3. Put strawberry into the zip-bag and add extraction mixture.
4. Remove as much air from the bag as possible and seal it closed. Smash the strawberry so that no big pieces remain
5. Pour the resulting strawberry pulp and extraction mixture through a strainer and into a medium glass bowl or similar container. Use a spoon to press the mashed bits of strawberry against the strainer forcing even more of the mixture into the container.
6. Pour the extracted mixture into 50-100ml glass container. This will help to isolate the DNA on the surface of the mixture.
7. Add 5 ml of the chilled isopropyl alcohol to the solution and hold the mixture at eye level. You're looking for a separation of material that shows up as a white layer on top.
8. Congrats! You have extracted the strawberry DNA!

Why do you think we add dishwashing soap? Salt? Alcohol?

_____

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