

KS3 Biology

Biological Systems and Processes

Lesson 15 - Review Two

Miss Hindle



Smoking and Alcohol - key facts!

- Smoking is addictive because of the chemical - nicotine (stimulant)
- There are over 5000 chemicals released when cigarettes burn, including carbon monoxide.
- Smoking massively affects health.
- Smoking damages the alveoli and ciliated cells and also clogs arteries
- Smoking when pregnant causes the unborn baby to struggle for oxygen and affects growth and development.
- Alcohol is addictive and is a depressant.
- There are many short and long term effects of alcohol consumption.
- Drinking alcohol whilst pregnant increases the chance of miscarriage, premature birth, baby having a low birth weight, learning difficulties and behavioural problems.



Smoking and Alcohol Questions

1. Why can smokers seem extremely breathless carrying out everyday tasks?
2. Why are smokers more at risk of a heart attack?
3. What process do substances use to cross the placenta from the mother to baby?
4. Why is liver damage a common effect of drinking alcohol?
5. Why do people smoke?
6. List some short term negative effects of drinking alcohol.



DNA - key facts!

- Your genetic information is made of DNA - DNA is a chemical like anything else in your body.
- DNA is made up of two backbones and 4 different bases
- The bases are A, T, G and C
- A always bonds with T
- G always bonds with C
- The shape of DNA is a double helix
- DNA contains genes - genes are a small section of DNA that codes for a specific protein
- DNA makes up chromosomes
- Humans have 46 chromosomes
- DNA was discovered by Franklin, Wilkins, Watson and Crick



DNA - keywords match up

Gene

Chromosome

Double Helix

DNA

The chemical that your genetic material is made from

They carry all the genetic information in an organism, there is 46 of them in humans

A small section of DNA that codes for a specific protein

The shape of DNA



DNA

Fill in the gaps...

Use the following keywords:
DNA, bases, A, T, G, C, protein,
double helix, section

DNA has a shape. DNA is made of 4

..... called,,,

A gene is a small of, each gene provides

the information for one



Inheritance - key facts!

- We look like our parents because we inherit chromosomes from both parents – half set from each.
- For each genetically controlled characteristic we have two genes – one from each parent, one from sperm and one from egg.
- Different versions of the same gene are known as alleles.
- Some alleles are more controlling than others and are always shown in the individual – these are known as dominant alleles and we represent them using capital letters.
- The less controlling alleles only show up if both of the alleles are the same - they are known as recessive.
- We can work out the probability of offspring having a certain characteristic using Punnett squares



Definitions match up!

Match up the keywords to their definitions

1. Allele

2. Homozygous

3. Heterozygous

4. Genotype

5. Phenotype

a) The physical characteristic that is displayed.

b) Alleles for a characteristic are DIFFERENT

c) Alleles for a characteristic are the SAME

d) Different versions of the same gene

e) The pair of alleles



Inheritance - Recap!

Copy and complete the Punnett square and work out the probabilities of each genotype and phenotype...

B – brown eyes b – blue eyes

| | | |
|---|---|---|
| | B | b |
| B | | |
| b | | |

Genotypes:

Phenotypes:



Inheritance

Copy and complete the Punnett square and work out the probabilities of each genotype and phenotype...

W – white fur w – black fur

| | | |
|---|---|---|
| | W | W |
| w | | |
| w | | |

Genotypes:

Phenotypes:



Inheritance

Copy and complete the Punnett square and work out the probabilities of each genotype and phenotype...

W – green flower w – red flower

| | | |
|---|---|---|
| | G | g |
| g | | |
| g | | |

Genotypes:

Phenotypes:



Correct the Science - Mixed

| Incorrect statement | Correct statement |
|--|--------------------------|
| Blocked coronary arteries can cause a heart attack because the heart has to work too hard and gives up | |
| Girls get more of their characteristics from their mum and boys from their dads | |
| We need to get more blood to the muscles during exercise because they start to respire | |

