# Revision Sheets

# AQA GSCE Triple Biology Paper 2 Higher

Name: Class:

# 10 Minutes on....

Homeostasis

| Key Term | Definition | Example |
|---|---|---|
| Homeostasis | | |
| Receptor | | |
| Stimuli | | |
| Coordination Centres | | |
| Effectors | | |

**Identify examples of homeostasis.**

**Explain why homeostasis is important.**

# 10 Minutes on....

Nervous System

| Key Term | Definition |
|---|---|
| Nervous System | |
| Central Nervous System | |
| Sensory Neurone | |
| Synapse | |
| Relay Neurone | |
| Motor Neurone | |

**Draw a diagram in the space below to model the different parts of a reflex arc.**

# 10 Minutes on....

Reaction Time RP

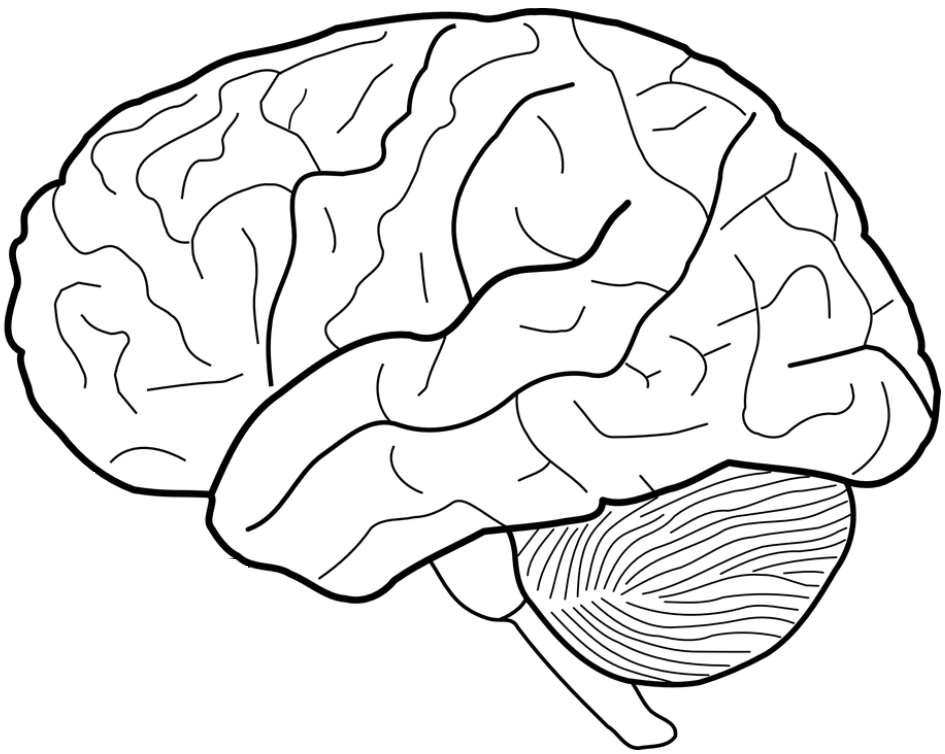
Construct a method to investigate the effect of a factor on reaction time. Use the space below to draw a diagram of how equipment would be set up.

# 10 Minutes on....

The Brain (1)

| Key Term | Definition |
|---|---|
| Brain | |
| Cerebral Cortex | |
| Cerebellum | |
| Medulla | |

**Label the brain.**



# 10 Minutes on....

The Brain (2)

**Explain the difficulties of treating brain damage.**

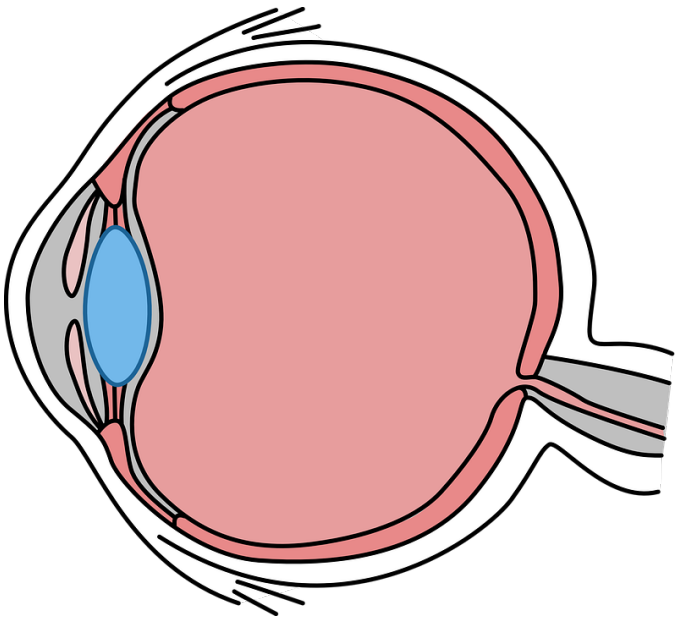
| Method of Mapping The Regions of the Brain | Description | Difficulties of Studying the Brain in this Way. |
|---|---|---|
| Studying patients with brain damage | | |
| Electrically stimulating different parts of the brain. | | |
| MRI scanning techniques | | |

# 10 Minutes on....

The Eye

| Key Term | Definition |
|---|---|
| Eye | |
| Retina | |
| Optic Nerve | |
| Sclera | |
| Cornea | |
| Iris | |

**Label the diagram of the eye.**



# 10 Minutes on....

Focusing The Eye

| Key Term | Definition |
|---|---|
| Accommodation | |
| Myopia | |
| Hyperopia | |

**Describe how the eye focuses on a near object.**

**Describe how the eye focuses on a far object.**

**Describe how defects of the eye can be treated.**

# 10 Minutes on....

Control of Body Temperature

| Key Term | Definition |
|---|---|
| Thermoregulatory Centre | |
| Vasoconstriction | |
| Vasodilation | |

**Describe how the body responds when body temperature increases.**

**Describe how the body responds when body temperature decreases.**

# 10 Minutes on....

Endocrine System

| Key Term | Definition |
|---|---|
| Endocrine System | |
| Master Gland | |
| Pituitary Gland | |
| Pancreas | |
| Thyroid | |
| Adrenal Gland | |
| Ovary | |
| Testes | |

**Describe how the endocrine system works.**

# 10 Minutes on....

Control of Blood Glucose

| Key Term | Definition |
|---|---|
| Pancreas | |
| Insulin | |
| Glycogen | |

**Describe what happens when blood glucose levels rise.**

**Describe what happens when blood glucose levels fall.**

# 10 Minutes on....

Diabetes

| Diabetes | Description | Treatment | Prevention |
|---|---|---|---|
| Type 1 | | | |
| Type 2 | | | |

**Identify risk factors of Type 2 diabetes.**

**Compare Type 1 and Type 2 diabetes.**

# 10 Minutes on....

Water Balance

**Identify ways that water is lost from the body.**

**Describe how the kidneys work.**

**Describe what happens during kidney dialysis.**

# 10 Minutes on....

Controlling Water Balance

| Key Term | Definition |
|---|---|
| Kidney | |
| ADH | |
| Permeability | |

**Describe what happens when blood water levels become too concentrated.**

**Describe what happens when blood water levels become too dilute.**

# 10 Minutes on....

Human Reproduction

| Key Term | Definition |
|---|---|
| Menstrual Cycle | |
| Puberty | |

| Hormone | Where it is Produced | What it Does |
|---|---|---|
| Testosterone | | |
| Oestrogen | | |
| Progesterone | | |
| FSH | | |
| LH | | |

# 10 Minutes on....

Contraceptives

| Contraceptive | Hormonal/ Non-Hormonal | What it Does | + | - |
|---|---|---|---|---|
| Oral | | | | |
| Injection | | | | |
| Barrier Method | | | | |
| Intrauterine Device | | | | |
| Spermicidal Agents | | | | |
| Abstaining | | | | |
| Surgical Methods | | | | |

# 10 Minutes on....

Infertility

**Describe the process of IVF.**

| Advantages | Disadvantages |
| --- | --- |
| | |

# 10 Minutes on....

Negative Feedback

**Describe the effect adrenaline has on the body.**

**Describe the effect thyroxine has on the body.**

**Explain how thyroxine levels are controlled by negative feedback.**

# 10 Minutes on....

Plant Hormones

| Key Term | Definition |
|---|---|
| Phototropism | |
| Gravitropism | |
| Geotropism | |
| Auxin | |
| Gibberellins | |
| Ethene | |

**Construct a diagram to model how phototropism occurs.**

# 10 Minutes on....

Plant Hormones 1 RP

**Construct a method to investigate the effect of light on the growth of new seedlings. Use the space below to draw a diagram of how equipment would be set up.**

# 10 Minutes on....

Plant Hormones 2 RP

**Construct a method to investigate the effect of gravity on the growth of new seedlings. Use the space below to draw a diagram of how equipment would be set up.**

# 10 Minutes on....

## Uses of Plant Hormones

| Hormone | Effect On Plants | Use |
|---|---|---|
| Auxins | | |
| Ethene | | |
| Gibberellins | | |

**Describe how weedkillers can affect biodiversity.**

# 10 Minutes on....

Reproduction

| Key Term | Definition |
|---|---|
| Meiosis | |
| Mitosis | |
| Sperm Cell | |
| Egg Cell | |
| Pollen | |
| Sexual Reproduction | |
| Asexual Reproduction | |
| Clone | |

**Compare sexual and asexual reproduction**

# 10 Minutes on....

Meiosis

| Key Term | Definition |
|---|---|
| Meiosis | |
| Gamete | |
| Fertilisation | |

**Describe what happens when cells divide to form gametes.**

**Explain how fertilisation restores the number of chromosomes.**

# 10 Minutes on....

Advantages and Disadvantages of Reproduction

| Advantages of Sexual Reproduction | Disadvantages of Sexual Reproduction |
|---|---|
| | |

| Advantages of Asexual Reproduction | Disadvantages of Asexual Reproduction |
|---|---|
| | |

| Organism | When it Reproduces Asexually | When it Reproduces Sexually |
|---|---|---|
| Malarial Parasites | | |
| Fungi | | |
| Strawberries | | |

# 10 Minutes on....

DNA and the Genome

| Key Term | Definition |
|---|---|
| DNA | |
| Genome | |
| Gene | |

**Describe the structure of DNA.**

**Describe the advantages of studying the genome.**

# 10 Minutes on....

DNA Structure

| Key Term | Definition |
|---|---|
| DNA | |
| Nucleotides | |
| Amino Acid | |

**Describe the structure of DNA.**

**Describe the structure of a nucleotide.**

# 10 Minutes on....

Protein Synthesis

| Key Term | Definition |
|---|---|
| Protein Synthesis | |
| Ribosome | |
| Mutation | |

**Describe the process of protein synthesis.**

**Explain why a mutation may cause a change in phenotype or may not cause a change at all.**

# 10 Minutes on....

Genetic Inheritance

| Key Term | Definition |
|---|---|
| Gamete | |
| Chromosome | |
| Gene | |
| Allele | |
| Dominant Allele | |
| Recessive Allele | |
| Homozygous | |
| Heterozygous | |
| Genotype | |
| Phenotype | |

**Identify examples of characteristics controlled by a single gene.**

# 10 Minutes on....

Inherited Disorders

**Explain what polydactyly is and how it is inherited.**

**Explain what cystic fibrosis is and how it is inherited.**

| Arguments For Embryo Screening | Arguments Against Embryo Screening |
|---|---|
| | |

# 10 Minutes on....

Sex Determination

**Explain how sex is determined.**

**Construct a genetic cross to model sex inheritance.**

| Father / Mother | X | Y |
|---|---|---|
| X | | |
| X | | |

# 10 Minutes on....

Variation

| Key Term | Definition |
|---|---|
| Genome | |
| Phenotype | |
| Variation | |
| Mutation | |

**Identify causes of variation within a population.**

**Explain how a change in phenotype may occur.**

# 10 Minutes on....

Evolution

| Key Term | Definition |
|---|---|
| Evolution | |
| Natural Selection | |
| Species | |

**Describe the process of evolution.**

**Explain how to determine if a new species has formed.**

# 10 Minutes on....

Selective Breeding

**Describe the process of selective breeding.**

**Identify examples of selective breeding.**

| Benefits of Selective Breeding. | Risks of Selective Breeding |
| --- | --- |
| | |

# 10 Minutes on....

Genetic Engineering

**Describe the process of genetic engineering.**

**Identify examples of genetic engineering.**

| Benefits of Genetic Engineering | Risks of Genetic Engineering |
| --- | --- |
| | |

# 10 Minutes on....

Cloning

| Cloning Method | Description |
|---|---|
| Tissue Culture | |
| Cuttings | |
| Embryo Transplants | |
| Adult Cell Cloning | |

| Benefits of Therapeutic Cloning | Risks of Therapeutic Cloning |
|---|---|
| | |

# 10 Minutes on....

Theory of Evolution

**Describe the process of natural selection.**

**Explain why the theory of evolution was only gradually accepted**

**Describe the theory suggested by Jean-Baptiste Lamarck**

# 10 Minutes on....

Speciation

**Describe the process of speciation.**

**Describe the work of Alfred Russel Wallace**

**Explain why the theory of speciation has developed over time.**

# 10 Minutes on....

Understanding of Genetics

| Development of our Understanding of Genetics | Description of What Was Discovered (And How) |
|---|---|
| Mid 19th Century (Gregor Mendel) | |
| Late 19th Century | |
| Early 20th Century | |
| Mid 20th Century | |

# 10 Minutes on....

Evidence for Evolution

| Key Term | Definition |
|---|---|
| Evolution | |
| Fossils | |
| Antibiotic Resistance | |

**Explain why the theory of evolution is now widely accepted.**

# 10 Minutes on....

Fossils

**Explain how fossils may form.**

**Describe what we can learn from fossil evidence.**

**Explain why we can't be sure about how life began on Earth.**

# 10 Minutes on....

Extinction

| Key Term | Definition |
|---|---|
| Extinction | |

| Factor Which May Contribute Towards Extinction | Explanation |
|---|---|
| New Diseases | |
| New Predators | |
| New More Successful Competitors | |
| Climate Change | |
| Volcanic Eruptions | |
| Collision With an Asteroid | |

# 10 Minutes on....

Resistant Bacteria

| Key Term | Definition |
|---|---|
| Mutation | |
| Antibiotic Resistant | |
| MRSA | |

**Describe how antibiotic resistant bacteria strains may emerge.**

# 10 Minutes on....

Classification

| Key Term | Definition |
|---|---|
| Carl Linnaeus | |
| Linnaean System | |
| Archaea | |
| Bacteria | |
| Eukaryota | |

**Describe the Linnaean System.**

**Describe the Three Domain System**

# 10 Minutes on....

Communities

| Key Term | Definition |
|---|---|
| Ecosystem | |
| Interdependence | |
| Competition | |
| Biotic | |
| Abiotic | |
| Stable Community | |

| What Animals Compete For | What Plants Compete For |
|---|---|
| | |

# 10 Minutes on....

Abiotic Factors

| Abiotic Factor | How a Change Could Affect a Community |
|---|---|
| Light Intensity | |
| Temperature | |
| Moisture Levels | |
| Soil pH | |
| Soil Mineral Content | |
| Wind Direction & Intensity | |
| Carbon Dioxide Levels for Plants | |
| Oxygen Levels for Aquatic Animals | |

# 10 Minutes on....

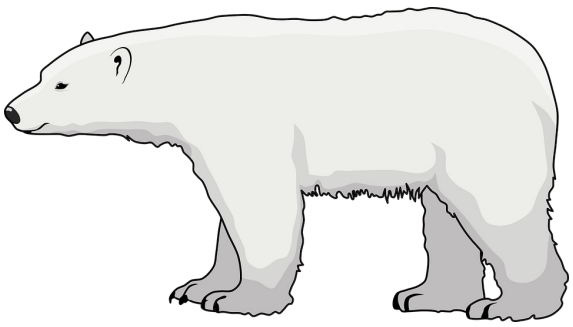
Biotic Factors

| Biotic Factor | How a Change Could Affect a Community |
|---|---|
| Availability of Food | |
| New Predators Arriving | |
| New Pathogens | |
| One Species Out Competing Another | |

# 10 Minutes on....

Animal Adaptations
Cold Climates

**Add annotations to the image to identify the adaptations animals living in cold habitats may have.**



| Adaptation for the Cold | How It Helps The Animal Survive |
|---|---|
| | |

# 10 Minutes on....

Animal Adaptations
Hot Dry Climates

**Add annotations to the image to identify the adaptations animals living in hot and dry habitats may have.**

| Adaptation for Survival in the Desert | How It Helps The Animal Survive |
|---|---|
| | |

# 10 Minutes on....

Plant Adaptations
Hot Dry Climates

**Add annotations to the image to identify the adaptations plants have for living in hot and dry habitats.**

| Adaptation for Survival in the Desert | How It Helps The Plant Survive |
|---|---|
| | |

# 10 Minutes on....

## Extremophiles

| Key Term | Definition |
|---|---|
| Extremophile | |
| Deep Sea Vents | |

**Identify examples of extreme environments.**

**Describe what conditions around a deep-sea vent would be like.**

**Describe and explain what would happen to a normal cell if it were in very salty conditions.**

# 10 Minutes on....

Levels of Organisation

| Key Term | Definition |
|---|---|
| Biomass | |
| Photosynthetic Organisms | |
| Food Chain | |
| Producer | |
| Consumer | |
| Predator | |
| Prey | |
| Stable Community | |

**Construct a labelled food chain to model a feeding relationship you may find in a garden.**

# 10 Minutes on....

Quadrat RP

**Construct a method to approximate the number of dandelion that are in a field. Use the space below to draw a diagram of how equipment would be set up.**

# 10 Minutes on....

Transect RP

**Construct a method to investigate the effect of light on the distribution of dandelion in a field. Use the space below to draw a diagram of how equipment would be set up.**

# 10 Minutes on....

Carbon Cycle

| Key Term | Definition |
|---|---|
| Combustion | |
| Respiration | |
| Decay | |
| Photosynthesis | |

**Construct a diagram to model the carbon cycle.**

**Describe the role of microorganisms in the carbon cycle.**

# 10 Minutes on....

Water Cycle

| Key Term | Definition |
|---|---|
| Evaporation | |
| Condensation | |
| Precipitation | |
| Transpiration | |

**Construct a diagram to model the water cycle.**

# 10 Minutes on....

Decay

| Factor | Effect on Rate of Decay |
|---|---|
| Temperature | |
| Water | |
| Availability of Oxygen | |

**Describe how gardeners and farmers try to provide optimum conditions for decay..**

**Identify what anerobic decay can be used for.**

# 10 Minutes on....

Decay RP

Construct a method to investigate the effect of temperature on the rate of decay of milk. Use the space below to draw a diagram of how equipment would be set up.

# 10 Minutes on....

Biodiversity

| Key Term | Definition |
|---|---|
| Biodiversity | |

| Change on Earth | Effect on Biodiversity Explained |
|---|---|
| Deforestation | |
| Waste | |
| Global Warming | |

**Explain why biodiversity is important.**

# 10 Minutes on....

Waste Management

| Key Term | Definition |
|---|---|
| Waste | |

| Pollution | Examples |
|---|---|
| Water | |
| Air | |
| Land | |

**Explain why the amount of waste on Earth is increasing.**

# 10 Minutes on....

Land Use

**Identify ways humans reduce land available for animals and plants.**

**Explain why the destruction of peat bogs is reducing biodiversity.**

| Arguments for the Destruction of Peat Bogs | Arguments Against The Destruction of Peat Bogs |
|---|---|
| | |

# 10 Minutes on....

Deforestation

**Explain why deforestation is occurring.**

| Advantages of Deforestation | Disadvantages of Deforestation |
| --- | --- |
| | |

# 10 Minutes on....

Global Warming

| Key Term | Definition |
|---|---|
| Global Warming | |
| Climate Change | |

| Biological Consequence of Global Warming | Effect on Biodiversity Explained |
|---|---|
| Glaciers and Polar Ice Melting | |
| Expansion of Seawater | |
| Extreme Weather | |
| Changes in Animal Migration Patterns | |
| Changes in Rainfall | |
| Loss and Extinction of Animals and Plants | |
| Habitats Changing | |

# 10 Minutes on....

Maintaining Biodiversity

| Way to Maintain Biodiversity | Description | + | - |
|---|---|---|---|
| Breeding Programmes | | | |
| Protection and Regeneration of Rate Habitats | | | |
| Reintroduction of Field Margins | | | |
| Reduction of Deforestation | | | |
| Reduction in Carbon Dioxide Emissions | | | |
| Recycling Resources | | | |

# 10 Minutes on....

Trophic Levels

| Key Term | Definition |
|---|---|
| Apex Predator | |
| Decomposers | |

| Trophic Level | Description |
|---|---|
| Level 1 | |
| Level 2 | |
| Level 3 | |
| Level 4 | |

**Construct a labelled diagram to model a pyramid of biomass.**

# 10 Minutes on....

Transfer of Biomass

**Explain why only 10% of biomass is transferred between each trophic level.**

**Explain why a shorter food chain would produce a greater proportion of biomass for food for humans.**

# 10 Minutes on....

Food Security

| Key Term | Definition |
|---|---|
| Food Security | |

| Biological Factor Affecting Food Security | Description |
|---|---|
| Increasing Birth Rate | |
| Changing Diets in Developed Countries | |
| New Pests and Pathogens | |
| Environmental Changes | |
| Cost of Agricultural Inputs | |
| Conflict | |

# 10 Minutes on....

Farming Techniques

| Characteristic of Intensive Farming | How it Increases Efficiency |
|---|---|
| Movement of livestock is restricted | |
| Livestock are kept inside in a temperature-controlled environment. | |

| Advantages of Intensive Farming | Disadvantages of Intensive Farming |
|---|---|
| | |

# 10 Minutes on....

Sustainable Fisheries

**Explain why is it important that fish stock levels are protected.**

| Method of Conserving Fish Stocks | Explanation of How This Protects Fish Stock Levels |
|---|---|
| Control of Net Size | |
| Fishing Quotes | |

**Explain why fish stock levels are decreasing.**

# 10 Minutes on....

Biotechnology

| Key Term | Definition |
|---|---|
| Genetic Modification | |
| Mycoprotein | |
| GM Crops | |

**Describe how mycoprotein is made.**

| Advantages of GM Crops | Disadvantages of GM Crops |
|---|---|
| | |