Science Paper 2 Revision Pack

Here are some Paper 2 Biology, Chemistry and Physics revision questions to help you prepare for your mock exams.

It is better to do some Science revision every week than leave it all to the last moment.

Check your answers on the year group Science Team so you know how you did and ask your teachers about anything you are unsure about.

St Thomas More Catholic Academy

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Intervention – AQA Trilogy Biology paper 2 – Foundation **B5 The Nervous system**

What is the function of the nervous system?	Give three things all control systems include.	Why are reflex actions important?	What is a stimulus?
Name four factors that affect reaction times.	Why are reflex actions described as rapid and automatic?	What is the function of neurones?	Give three internal conditions controlled in homeostasis.
What is a synapse?	Give the pathway of a nervous response.	What is homeostasis?	What are the two parts of the central nervous system?

Intervention – AQA Trilogy Biology paper 2 – Foundation

B5 Hormonal coordination

What is the endocrine system?	What are the methods of hormonal contraception?	How do the effects of the endocrine system compare to those of the nervous system?	What is the function of luteinising hormone (LH)?
What is the function of oestrogen?	Where is the pituitary gland located?	What is the function of adrenaline in the body?	What is the cause of Type 1 diabetes?
Which organ monitors and controls blood glucose concentration?	What is the function of thyroxine in the body?	What is the cause of Type 2 diabetes?	What is the function of follicle stimulating hormone (FSH)?

Intervention – AQA Trilogy Biology paper 2 – Foundation **B6 Reproduction**

What is sexual reproduction?	What is a recessive allele?	What is meiosis?	What is a gene?
What is the genetic material in cells called?	Define the term heterozygous.	What type of cell division is involved in sexual reproduction?	What is a genome?
What type of allele causes polydactyly?	What type of cell division is involved in asexual reproduction?	What are alleles?	What type of allele causes cystic fibrosis?
What is a dominant allele?	How many chromosomes do normal human body cells have?	Define the term homozygous.	What are the male and female sex chromosomes in humans?

Intervention – AQA Trilogy Biology paper 2 – Foundation **B6 Variation**

What can cause variation?	What concerns are there about genetically engineered crops?	What is selective breeding?
What are the effects of mutations?	What are the consequences of inbreeding?	How have plant crops been genetically engineered?
What is genetic engineering?	Describe the process of selective breeding.	What is variation?
How do new phenotype variants occur?	How have bacteria been genetically engineered?	

Intervention – AQA Trilogy Biology paper 2 – Foundation **B7 Adaptation**

What is a population?	What is a stable community?	What is competition?	What do plants often compete for?
What is an abiotic factor?	What do animals often compete for?	What is an ecosystem?	What is a biotic factor?
List the abiotic factors that can affect a community.	What is a community?	List the biotic factors that can affect a community.	What is interdependence?
How do adaptations help an organism?	What are the three types of adaptations?	What is an extremophile?	What makes an environment extreme?

Intervention – AQA Trilogy Biology paper 2 – Foundation **B6 Evolution**

What is evolution?	What evidence supports the theory of evolution?	What is the binomial system?	What are fossils?
Why can bacteria evolve rapidly?	What are the benefits of the fossil record?	Who first proposed the theory of evolution by natural selection?	How do antibiotic-resistant strains of bacteria develop?
What is the theory of evolution by natural selection?	What classification system did Carl Woese introduce?	What are the problems with the fossil record?	How might fossils be formed?

Intervention – AQA Trilogy Biology paper 2 – Foundation

Biodiversity and ecosystems

What is a producer?	How are humans reducing the land available for other organisms?	What is biodiversity?	Why have humans carried out large-scale deforestation in tropical areas?	What is a predator?
Why are more resources being used, and more waste produced, by humans?		What is a food chain?	What gases are increasing in atmospheric levels and contributing to global warming?	What is the advantage of high biodiversity?
What is a herbivore?	How are humans trying to maintain biodiversity?		What is the carbon cycle?	Where does pollution occur?
What is an apex predator?	What is a prey organism?	What are the negative impacts of the destruction of peat bogs?	What is a consumer?	What is the water cycle?

Intervention – AQA Trilogy Chemistry paper 2 – Foundation

C6 Rate and extent of chemical change

What is the rate of a reaction?	What effect does increasing surface area have on the rate of reaction?	What is the unit for rate of reaction in a reaction involving a change in volume?	What effect does increasing concentration have on the rate of reaction?
What is a catalyst?	Why does increasing surface area have this effect?	What is the equation for calculating the mean rate of reaction?	Why does increasing concentration have this effect?
What is the unit for rate of reaction in a reaction involving a change in mass?	What effect does increasing pressure have on the rate of reaction?	How can you measure the rate of a reaction that produces a gas?	What effect does increasing temperature have on the rate of reaction?
How do catalysts increase the rate of a reaction?	Why does increasing pressure have this effect?	What is the activation energy?	Why does increasing temperature have this effect?
What is a reversible reaction?	Which symbol shows a reversible reaction?	What is dynamic equilibrium?	

Intervention – AQA Trilogy Chemistry paper 2 – Foundation **C7 Organic Chemistry**

What is a hydrocarbon?	What is a fraction?	What are the products of cracking?	What is the general formula for the alkanes?	Name five useful fuels produced from fractional distillation.
What are alkenes?	How does flammability depend on chain length?	How is crude oil formed?	Describe the reactivity of alkenes compared to alkanes.	How does viscosity depend on chain length?
How does boiling point depend on the chain length?	Name two methods to carry out cracking.	What are alkenes used for?	What are the first four alkanes?	What is cracking?
What are the alkanes?	How can you test for alkenes?	How can the different alkanes in crude oil be separated?	Name four useful materials produced from crude oil fractions.	What is the general formula for the alkenes?

Intervention – AQA Trilogy Chemistry paper 2 – Foundation **C8 Chemical analysis**

In chemistry, what is a pure substance?	What is the test for hydrogen?	What are some examples of formulations?	How many spots will a pure compound produce on a chromatogram?
What is the test for chlorine?	How is Rf calculated?	What is the difference between the melting and boiling points of a pure and impure substance?	What is the test for oxygen?
What is a formulation?	What are the names of the two phases involved in chromatography?	What is the test for carbon dioxide?	What is chromatography?

Intervention – AQA Trilogy Chemistry paper 2 – Foundation

C9 Chemistry of the atmosphere

What is the atmosphere?	Name three greenhouse gases.	What is a carbon footprint?	How did the amount of carbon dioxide in the atmosphere decrease to today's levels?	What is global climate change?
Give two ways recent human activities have increased the amount of atmospheric methane.	How is sulfur dioxide formed, and what are the dangers associated with it?	How did the oceans form?	What is global warming?	What is the current composition of the atmosphere?
What is a greenhouse gas?				What type of radiation do greenhouse gases absorb?
How is carbon monoxide formed, and what is the danger associated with it?	When did life start to appear, and what was the impact of this on oxygen in the atmosphere?	How are oxides of nitrogen formed, and what are the dangers associated with them?	Why can scientists not be sure about the composition of the Earth's early atmosphere?	sulfur impurities in fossil fuels react with oxygen during combustion, acid rain, respiratory problems
	How are particulates formed, and what are the dangers associated with them?	Give two ways recent human activities have increased the amount of atmospheric carbon dioxide.	What was the early atmosphere composed of?	What are some possible effects of climate change?

Intervention – AQA Trilogy Chemistry paper 2 – Foundation

C10 Using Resources

What do we use the Earth's resources for?	What is potable water?	What are the three main types of waste water?	What is sedimentation?	What is sterilisation?
How is sludge treated?	What are some examples of natural resources?	What is a life cycle assessment?	What is sustainable development?	What are the four stages of a life cycle assessment?
How can desalination be carried out?				How can potable water be produced from salt water?
What is a finite resource?	How is effluent treated?	What are three examples of sterilising agents?	What are the four main types of water?	How can we reduce the amount of new materials manufactured?
What is the first step in processing waste water?	What are some examples of synthetic resources?	What can waste water contain?	In what ways can materials that are not recycled be disposed?	In the UK, how is potable water extracted from fresh water?

Intervention – AQA Trilogy Physics paper 2 – Foundation P5 Forces 1

What is a scalar quantity?	What is different about the interaction pair of forces when two objects interact with each other?	What instrument can be used to measure the weight of an object?	What is a contact force?
Is force a vector or scalar quantity?	What is a force?	What is a vector quantity?	What is the centre of mass?
What is a non-contact force?	What is the size of the resultant force on an object if the forces on it are balanced?	What is the same about the interaction pair of forces when two objects interact with each other?	What is the name for the force acting on an object due to gravity?

Intervention – AQA Trilogy Physics paper 2 – Foundation P5 Forces 2

What is the difference between distance and displacement?	What is the unit of acceleration?	What is the difference between speed and velocity?	
What is a typical speed for sound travelling in air?	What information does the gradient of the line in a distance–time graph provide?	What is the acceleration of a free-falling object due to gravity?	What are typical speeds for a person walking, running, and cycling?
What information does the gradient of the line in a velocity–time graph provide?	What factors can affect the speed at which someone walks, runs, or cycles?	How can an object be accelerating even if it is travelling at a steady speed?	
What are typical speeds of a car and a train?		What is acceleration?	What is happening to an object if it has a negative acceleration?

Intervention – AQA Trilogy Physics paper 2 – Foundation P5 Forces 3

What is thinking distance?	What is the resultant force on an object moving at a steady speed in a straight line?	Why does the temperature of a vehicle's brakes increase when the brakes are applied?	What does Newton's First Law say?	What is the relationship between stopping distance, thinking distance, and braking distance?	What is the name for the steady speed a falling object reaches when the resistive force is equal to its weight?
According to Newton's Second Law, what is the acceleration of an object inversely proportional to?	What are three factors that can affect the braking distance of a vehicle?	What is the inertial mass of an object?	What is braking distance?	According to Newton's Second Law, what is the acceleration of an object proportional to?	What happens to the drag on an object as its speed increases?
What can happen if the braking force used to stop a vehicle is very large?	What does Newton's Third Law say?	What is the resultant force on a stationary object?	What will an object experience if the resultant force on it is not zero?	What is the name given to the distance a vehicle travels to safely come to a stop after the driver has spotted a hazard?	What is the general name for the frictional forces an object experiences when moving through a fluid (liquid or gas)?
What forces are balanced when an object travels at a steady speed?	What is elastic deformation?	How do you find the spring constant from a force–extension graph of a spring?	How do you find the elastic potential energy from a force–extension graph of a spring?	What is inelastic deformation?	In which direction does the drag on an object always act?

Intervention – AQA Trilogy Physics paper 2 – Foundation **P6 Waves**

What is a transverse wave?	What is the wavelength of a wave?	What unit is frequency measured in?	What is a rarefaction?
What is the frequency of a wave?	What is a compression?	What is a longitudinal wave?	
Give an example of a transverse wave	What property of a wave always stays the same when it travels from one medium to another?	What is the amplitude of a wave?	Give an example of a longitudinal wave.

Intervention – AQA Trilogy Physics paper 2 – Foundation P6 Waves - Electromagnetic (EM) waves

Are electromagnetic (EM) waves longitudinal or transverse waves?	What is infrared radiation used for?	How are gamma rays produced?	List the different types of waves in the EM spectrum in order of decreasing wavelength (increasing frequency).	Which types of EM waves are harmful to the human body?
How can electromagnetic waves be produced?	What are the hazards of being exposed to ultraviolet radiation?	What do EM waves transfer from their source to an absorber?	Why are gamma rays used for treating cancer and sterilising medical equipment?	What are radio waves used for?
What are microwaves used for?	Explain why EM waves are not mechanical waves.	Why are X-rays used for medical imaging?	How can radio waves be produced?	Which part of the EM spectrum can humans see?

Intervention – AQA Trilogy Physics paper 2 – Foundation P7 Magnets and Electromagnets

What is a magnetic field?	What does the distance between magnetic field lines indicate?	What does a magnetic compass contain?	In which direction do magnetic field lines always point?	What is an induced magnet?
Are electromagnetic (EM) waves longitudinal or transverse waves?	What factors does the strength of the magnetic field around a straight wire depend upon?	What happens when like and unlike poles are brought together?	How can the strength of the magnetic field inside a solenoid be increased?	What is a permanent magnet?
What happens to the strength of the magnetic field as you get further away from the magnet?		What is produced around a wire when an electric current flows through it?	Where is the magnetic field of a magnet strongest?	What effect does shaping the wire into a solenoid have on the magnetic field strength?