

Year 7, 8 and 9 are following the same CM due to classes being mixed. The Assessment Objectives will be differentiated depending on ability/year

Meadow Park School - Curriculum Map 2023-2024



Key Stage	Year Group	Subject	Teacher	Programme of Study		
KS3	Years 7, 8 and 9	Science	Trevor Ngawoofah	National Curriculum KS3 Science		
Autumn a		Autumn b	Spring a	Spring b	Summer a	Summer b
Topic(s)		Topic(s)	Topic(s)	Topic(s)	Topic(s)	Topic(s)
Chemical Reactions: Acid and Alkalis		The Earth and the Atmosphere: The Rock Cycle	The Structure and Function of Living Things: Nutrition and Digestion	Space Physics: Earth and Our Solar System	Electricity and Electromagnetism: Static Electricity and Magnetism	Interaction and Interdependence: Relationships in Ecosystems
Assessment Tasks		Assessment Tasks	Assessment Tasks	Assessment Tasks	Assessment Task	Assessment Tasks
<p>Year 7</p> <ul style="list-style-type: none"> * Research acids, alkalis and neutral substances. * Carry out a practical investigation to test the strength of various acids and alkalis using a range of indicators. * Apply knowledge to compare indicators to decide the most reliable and safest. (HIGHER) * Carry out a practical to demonstrate a neutralisation reaction. * Research and give examples and uses of neutralisation reactions. * Apply knowledge to identify the strengths of acids and alkalis needed for neutralisation to happen. (HIGHER) * Carry out practical investigations to observe and describe reactions between acids and metals/ acids and metal carbonates/ acids and metal oxides * Use word equations to represent chemical reactions (HIGHER) 		<p>Key Skills:</p> <ul style="list-style-type: none"> * Model the structure of the Earth labelling each key part. * Compare the elements that form the Earth and the Earth's atmosphere. * Explain how the Earth's atmosphere has changed over time. * Carry out a practical to investigate the properties of different types of rocks. * Model the formation of different types of rocks. * Apply knowledge on the formation of different rocks to their properties. (HIGHER) * Explain the stages in the rock cycle. <p>*Have the opportunity to visit a cave to observe rock features. (TBC)</p>	<p>Key Skills:</p> <ul style="list-style-type: none"> * Describe what a balanced diet is and research the functions of each food group within the human body as well examples of food they are found in. * Carry out a practical using food tests to identify key nutrients in different types of food. * Apply knowledge on food tests to identify food groups within unknown food samples. (HIGHER) * Prepare a balanced meal labelling the nutrients. * Compare diseases caused by eating an unbalanced diet including obesity, starvation and deficiency diseases. * Model the organs within the digestive system and explain their functions. * Model the different types of digestive enzymes and how they break up carbohydrates, fats and proteins. (HIGHER LEVEL) 	<p>Key Skills:</p> <ul style="list-style-type: none"> * Model the order of planets in our solar system. * Research key features about each planet and relate features such as temperature and length of a year to their distance from the sun. * Define mass and weight and use equations to calculate weight. (HIGHER) * Use equations to calculate weight on different planets. (HIGHER) * Research other celestial bodies such as dwarf planets. * Explain the causes of our seasons and compare seasons in the Northern Hemisphere with the Southern Hemisphere. * Describe the effect of the moon on our tides. * Research methods used to observe our solar system and other galaxies in the Universe. <p>*Have the opportunity to visit Jodrell Bank Observatory/ Catalyst Museum. (TBC)</p>	<p>Key Skills:</p> <ul style="list-style-type: none"> * Carry out a practical to investigate series and parallel circuits. * Carry out a practical to investigate current and voltage in circuits. Use equations to calculate voltage, current and resistance. (HIGHER) * Define static electricity and give examples. * Carry out a practical to investigate examples of static electricity. * Compare which objects will repel or attract each other due to electrostatic forces. * Carry out a practical to investigate magnets and magnetic fields and represent magnetic fields by drawing simple labelled diagrams. * Explain permanent and non-permanent magnets giving examples. * Carry out a practical to investigate the properties of electromagnets and compare factors affecting the strength of electromagnets. (HIGHER) <p>*Have the opportunity to visit Jodrell Bank Observatory/ Catalyst Museum. (TBC)</p>	<p>Key Skills:</p> <ul style="list-style-type: none"> * Define ecosystems, habitats and environment giving examples of each. * Research how organisms are adapted to survive in different environments including extreme environments. (HIGHER) * Carry out a practical to investigate choice chambers. * Model food chains and food webs and describe the characteristics of organisms within each trophic level. * Interpret food chains and food webs to describe the impacts of change in the population of one organism on the populations of other organisms. (HIGHER) * Model predator-prey cycles and compare the adaptations of each. * Carry out a practical to investigate the distribution of organisms within a habitat. <p>* Have the opportunity to visit a zoo. (TBC)</p>

<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Research and compare a range of acids, alkalis and neutral substances and identify substances as acidic, alkaline and neutral. * Carry out a practical to test the strength of various acids and alkalis using a range of indicators and analyse the effectiveness of different indicators. * Carry out a practical to demonstrate a neutralisation reaction. * Write a word equation/ symbol equation to demonstrate the reactions. (HIGHER) * To research and give examples and uses of neutralisation reactions explaining the importance of the neutralisation reactions in each example. * Apply knowledge on neutralisation reactions to complete problem solving tasks/ to answer open ended questions. (HIGHER) * Carry out practical investigations to investigate reactions between acids and metals/ acids and metal carbonates/ acids and metal oxides/ combustion reactions and displacement reactions. * Use word equations and symbol equations to represent chemical reactions. (HIGHER) 	<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Model the structure of the Earth labelling and explaining each key part. * Compare the elements that form the Earth and the Earth's atmosphere making links between them. * Explain how the Earth's atmosphere has changed over time by analysing data. * Outline the stages in the carbon cycle explaining the link to Global Warming. (HIGHER) * Carry out a practical to investigate the properties of different types of rocks. * Model the formation of different types of rocks making links between the properties of different types of rocks and how they were formed. * Research the uses of rocks and link the use to their properties. * Explain the stages in the rock cycle by linking together the formation of each type of rock. * Apply knowledge to complete open ended questions on the rock cycle. (HIGHER) <p>*Have the opportunity to visit a cave to observe rock features. (TBC)</p>	<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Describe what a balanced diet is and research the functions of each food group within the human body as well examples of food they are found in. * Carry out a practical using food tests to identify key nutrients in different types of food. * Use detailed knowledge of food tests to carry out a problem-solving practical investigation. * Prepare a balanced meal labelling the nutrients and evaluate the extent to which the meal is balanced, identifying ways to add further nutrition. * Calculate the energy requirements of various people depending on age and gender. (HIGHER) * Compare diseases caused by eating an unbalanced diet including obesity, starvation and deficiency diseases and make links with where globally certain diseases are more prevalent. (HIGHER) * Identify diseases linked to an unbalanced diet when given a range of symptoms. * Model the organs within the digestive system and explain their functions. * Model the different types of digestive enzymes and how they break up carbohydrates, fats and proteins. Identify where in the digestive system each enzyme is produced 	<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Model the order of planets in our solar system including the position of asteroids, comets and dwarf planets. * Research key features about each planet and other celestial bodies and use subject knowledge to relate features such as temperature and length of a year to their distance from the sun. * Define gravity and mass and use equations to calculate how gravity changes on different planets in space. * Explain the causes of our seasons and compare seasons in the Northern Hemisphere with the Southern Hemisphere. * Describe the effect of the moon on our tides. * Investigate how sound and light would travel in space. (HIGHER) * Define a light year and apply knowledge to complete a problem solving task. * Research methods used to observe our solar system and other galaxies in the Universe. <p>*Opportunity to visit Jodrell Bank Observatory/ Catalyst Museum (TBC)</p>	<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Carry out a practical to investigate series and parallel circuits and compare how current and voltage changes in series and parallel circuits. * Use equations to calculate voltage, current and resistance and rearrange equations to answer exam type questions. (HIGHER) * Define static electricity and give examples explaining how the movement of electrons can cause an object to become charged with static electricity. * Carry out a practical to investigate examples of static electricity explaining their application. * Compare which objects will repel or attract each other due to electrostatic forces. * Carry out a practical to investigate magnetic fields and represent magnetic fields by drawing accurate labelled diagrams identifying where the field strength is the strongest. * Carry out a practical to investigate the properties of electromagnets and compare factors affecting the strength of electromagnets. Apply knowledge to explain how transformers work. (HIGHER) * Research a range of uses of magnets including compasses. (HIGHER) <p>*Have the opportunity to visit Jodrell Bank Observatory/ Catalyst Museum. (TBC)</p>	<p style="text-align: center;">Year 8</p> <ul style="list-style-type: none"> * Define ecosystems, habitats and environment giving examples of each. * Research how organisms are adapted to survive in different environments including extreme environments. * Carry out a practical to investigate choice chambers evaluating on the reliability and validity of the data recorded. * Model food chains and food webs and describe the characteristics of organisms within each trophic level. * Use pyramids of numbers and biomass to represent changes between trophic levels. (HIGHER) * Interpret food chains and food webs to describe the impacts of change in the population of one organism on the populations of other organisms. * Model predator –prey cycles and compare the adaptations of each. Explain the reasons for changes in the population size of predators and prey. * Carry out a practical to investigate the distribution of organisms within a habitat. Calculate the percentage cover. (HIGHER) <p>* Have the opportunity to visit a zoo. (TBC)</p>
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<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Compare a range of acids, alkalis and neutral substances and identify substances as acidic, alkaline and neutral. * Carry out a practical to test the strength of various acids and alkalis using a range of indicators and analyse the effectiveness of different indicators. * Use detailed subject knowledge on indicators to complete a problem-solving investigation. * Carry out a practical to demonstrate a neutralisation reaction and write a word equation/ symbol equation to demonstrate the reactions and balance them. (HIGHER) * Research and give examples and uses of neutralisation reactions explaining the importance of the neutralisation reaction in each example. * For given examples, identify the pH of substances needed for neutralisation to happen. * Apply knowledge to complete open ended questions showing an in-depth understanding. (HIGHER) * Carry out practical investigations to investigate reactions between acids and metals/ acids and metal carbonates/ acids and metal oxides/ combustion reactions, displacement reactions and thermal decomposition reactions. * Use word equations and symbol equations to represent chemical reactions and balance a range of symbol equations. (HIGHER) 	<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Model the structure of the Earth and label each key part adding detailed descriptions. * Compare the elements that form the Earth and the Earth's atmosphere. * Explain how the Earth's atmosphere has changed over time by analysing data. * Predict how the composition of gases in the atmosphere will change in the future and link to key events and human activities. (HIGHER) * Explain the stages in the carbon cycle and discuss the causes and impacts of increasing Carbon Dioxide levels * Carry out a practical to investigate the properties of different types of rocks. * Model the formation of different types of rocks adding detailed descriptions of each stage. * Make a link between the properties of different types of rocks and how they were formed. Identify locations around the UK where different rock types are found as part of a problem solving activity. * Research the uses of rocks and link the use to their properties. * Explain the stages in the rock cycle by linking together the formation of each type of rock. * Apply knowledge to complete higher level exam questions. (HIGHER) <p>*Have the opportunity to visit a cave to observe rock features. (TBC)</p>	<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Describe what a balanced diet is and research the functions of each food group within the human body as well examples of food they are found in. * Carry out a practical using food tests to identify key nutrients in different types of food. * Use detailed knowledge of food tests to carry out a problem-solving practical investigation and write a report to explain findings. * Apply knowledge on food tests to explain how to carry out reliable and valid investigations to identify food groups in specified food. * Prepare a balanced meal labelling the nutrients and evaluate the extent to which the meal is balanced, identifying ways to add further nutrition. * Calculate the energy requirements of various people depending on age and gender based on the analysis of data. * Compare diseases caused by eating an unbalanced diet including obesity, starvations and deficiency diseases and link these diseases to lifestyle choices/ prevalence in less economically developed countries compared to more economically developed countries. * Apply knowledge to identify diseases linked to an unbalanced diet when given a range of symptoms. (HIGHER) * Model the organs within the digestive system and explain their functions comparing adaptations of the small intestine and explain how this links to the better absorption of nutrients. (HIGHER) * Model the different types of digestive enzymes and how they break up carbohydrates, fats and proteins. Identify where in the digestive system each enzyme is produced. * Carry out an investigation to investigate the effect of different factors on enzyme activity. (HIGHER) 	<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Model the order of planets in our solar system including the position of asteroids, comets and dwarf planets. * Model the structure of the Universe, researching different types of galaxies. * Research key features about each planet and relate features such as temperature and length of a year to their distance from the sun. * Research other celestial bodies such as dwarf planets and apply knowledge to explain why Pluto is no longer classed as a dwarf planet. * Explain the causes of our seasons and compare seasons in the Northern Hemisphere with the Southern Hemisphere. * Describe the effect of the moon on our tides and apply knowledge to answer open ended questions. * Investigate how sound and light would travel in space using equations to calculate speed. (HIGHER) * Define a light year. * Define gravity and calculate how gravity changes on different planets in space. Rearrange equations to calculate mass or gravity on different planets. (HIGHER) * Research methods used to observe our solar system and other galaxies in the Universe. Compare the advantages and disadvantages of each. * Consider the theory of the Big Bang and evidence that can support or refute the theory. (HIGHER) <p>*Opportunity to visit Jodrell Bank Observatory/ Catalyst museum (TBC)</p>	<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Carry out a practical to investigate series and parallel circuits. * Carry out a practical to investigate current and voltage and resistance in circuits. Apply knowledge on circuits and equations to complete exam type questions and problem solve. (HIGHER) * Define static electricity and give examples explaining in detail how the movement of electrons can cause an object to become charged with static electricity. * Carry out a practical to investigate examples of static electricity explaining their applications and predict which objects will repel or attract each other due to electrostatic forces. * Carry out a practical to investigate magnets and magnetic fields and represent magnetic fields by drawing accurate labelled diagrams identifying where the field strength is the strongest and use compasses to label the direction of the magnetic field. * Carry out a practical to investigate the properties of electromagnets and compare factors affecting the strength of electromagnets. * Write a conclusion explaining why different factors increase the strength of an electromagnet. * Research a range of uses of magnets including compasses and explain how compasses work. (HIGHER) <p>*Have the opportunity to visit Jodrell Bank Observatory/ Catalyst Museum. (TBC)</p>	<p style="text-align: center;">Year 9</p> <ul style="list-style-type: none"> * Define ecosystems, habitats and environment giving examples of each and identify the biotic and abiotic factors in each. * Research how organisms are adapted to survive in different environments including extreme environments. * Carry out a practical to investigate choice chambers evaluating on the reliability and validity of the data recorded. Link results to explaining why organisms live in specific habitats. * Model food chains and food webs and describe the characteristics of organisms within each trophic level. * Interpret food chains and food webs to describe the impacts of change in the population of one organism on the populations of other organisms. * Construct and interpret pyramids of numbers, pyramids of biomass and pyramids of energy to represent the number of organisms at each trophic level. * Define bioaccumulation and research the impacts that using chemical fertilisers can have on organisms at the top of food chains. (HIGHER) * Model predator –prey cycles and compare the adaptations of each. Explain the reasons for changes in the population size of predators and prey. * Apply knowledge to plan how to investigate the distribution of organisms within an area. (HIGHER) <p>* Have the opportunity to visit a zoo</p>
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<ul style="list-style-type: none"> - Using ICT to complete online quizzes to assess knowledge and understanding of acids and alkalis. - Using ICT to research examples of acids and alkalis. - Using Power Point to record research carried out on acids and alkalis. 	<ul style="list-style-type: none"> - Using ICT to watch stimulations of the rock cycle. - Using ICT to research the locations of different types of rock/ rock formations locally and globally. 	<ul style="list-style-type: none"> - Using ICT to visualise how food moves through the digestive system. - Using ICT to visualise how enzymes break down large food molecules. - Using SENECA to complete optional online homework/ extension tasks in class. 	<ul style="list-style-type: none"> - Using ICT to visualise our solar system/ position of our Galaxy within the Universe. - Use ICT to research key facts about each planet and use Power point to present research. 	<ul style="list-style-type: none"> - Using ICT to visualise magnetic fields around magnets. - Using ICT to research key facts about the uses of magnets and electromagnets. - Using Power point to present research. 	<ul style="list-style-type: none"> - Using ICT to visualise how predators and prey interact. - Using SENECA to complete optional online homework/ extension tasks in class.
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KEY SKILLS:

Stating/describing processes and concepts

Modelling processes and concepts

Explaining processes and concepts/ making comparisons

Following a method to carry out practicals and record accurate observations

Applying knowledge to answer questions/ make connections

Carrying out practical investigations

Analysing data/ forming conclusions

Using equations in calculations

Evaluating the reliability and validity of results

Rearranging equations to answer questions

Applying knowledge from investigations to prove/ disprove a statement (critical thinking)

Critically analysing theories