

Leaders Guide

Year 11
Cycle One

Name:

Tutor Group:



Your timetable

Lesson	Monday	Tuesday	Wednesday	Thursday	Friday
1	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:
2	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:
3	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:
4	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:
5	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:	Subject: Room:
After School					

Remember...Champions Hour runs Monday – Thursday everyday afterschool between 3:10-4:10pm, along with a range of different extracurricular clubs. Leader points awarded for attendance at these



Leaders Calendar

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	4 th September	5 th September	6 th September	7 th September	8 th September
	Y7/ Y12 Induction		Speak like a leader launch!		
2	11 th September	12 th September	13 th September	14 th September	15 th September
		Why not try a new extra-curricular club?		Open evening	
3	18 th September	19 th September	20 th September	21 st September	22 nd September
4	25 th September	26 th September	27 th September	28 th September	29 th September
				Pastoral evening conference: - Meet your child's tutor - Guest speakers - Parent workshops	
5	2 nd October	3 rd October	4 th October	5 th October	6 th October
6	9 th October	10 th October	11 th October	12 th October	13 th October
				Performing Arts Trip - Message in a Bottle	



Leaders Calendar

Week	Monday	Tuesday	Wednesday	Thursday	Friday
7	16 th October	17 th October	18 th October	19 th October	20 th October
			Societies launch!	Performing Arts Trip - Edward Scissorhands	
8	30 th October	31 st October	1 st November	2 nd November	3 rd November
				Prepare to Perform Y11, Y12 & Y13	
9	6 th November	7 th November	8 th November	9 th November	10 th November
	INSET				
Year 11 and 13 Mocks					
10	13 th November	14 th November	15 th November	16 th November	17 th November
Assessment Week					
11	20 th November	21 st November	22 nd November	23 rd November	24 th November
Assessment Week					
12	27 th November	28 th November	29 th November	30 th November	1 st December
Super Learning Week					
13	4 th December	5 th December	6 th December	7 th December	8 th December
			School Production	School Production	

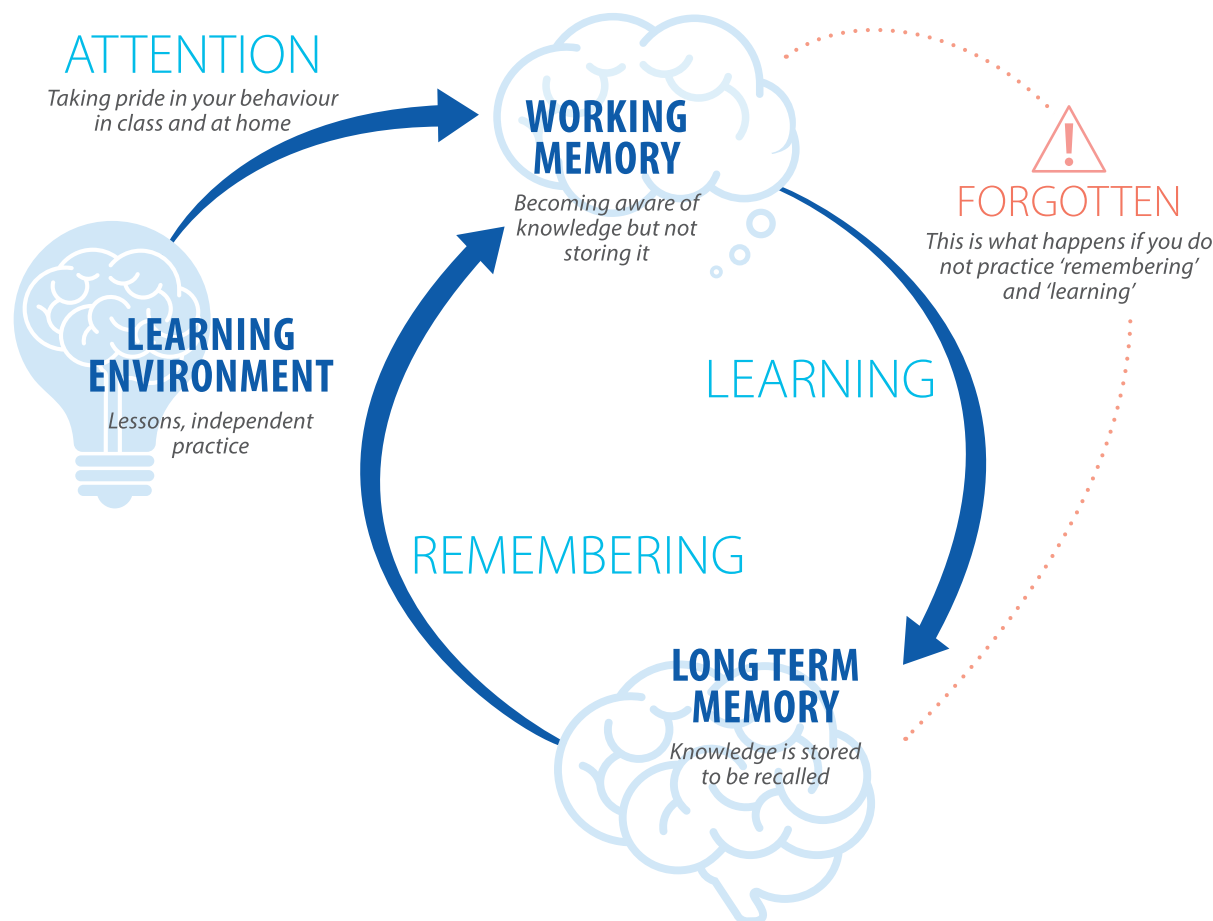


The Bourne End Academy Curriculum Intent

Teachers at Bourne End Academy prepare students to become successful leaders of the future global economy. In order to achieve this we have developed challenging, **knowledge intensive** curriculums which are delivered through structured, disciplined working environments in which every student receives high-quality teaching and achieves his or her full potential.

Our bespoke subject curriculums provide students the **currency for future success**. We position each individual lesson within overarching curriculum concepts, providing direction and purpose to the knowledge being taught at the start of every lesson.

We assess student regularly in every lesson, this is why mini whiteboards are such an essential part of the learning kit! We take a **mastery approach** to learning which means we move forward with our curriculum once we have seen that students have demonstrated the prior knowledge that needs to be built upon. Every lesson starts with knowledge activation in the form of retrieval.



Remembering: mastering your memory

Learning is what happens when knowledge moves from your **working memory** to your **long-term memory**.

Your **working memory** is like a desktop on your computer. If the information is not saved, then it will be **forgotten**.

Your **long-term memory** is like a computer hard drive. **Remembering** is what happens when you access the information in your **long-term memory**.

You can take practical steps to improve your ability to **learn** and **remember** key information and become the master of your memory.

Our ability to learn and remember is enhanced when we engage in activities that test what we remember.

'The testing effect' is a proven way of enhancing our long-term memory which gives us clear feedback on gaps in our learning. Therefore, regular quizzing is a vital part of our curriculum.



How to self-quiz

Science

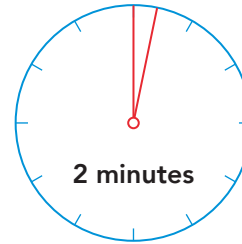
- Evolution
1. **Natural selection** is where organisms change slowly over time (many generations), to become better **adapted** to their environment. Those organisms that are poorly adapted will die.
 2. **Darwin's** theory is that organisms evolve as a result of **natural selection**. Evidence for this theory include the fossil record, changes observed in microorganisms, and extinction.
 3. **Extinction** is where no more individuals of that species are left anywhere in the world. Factors causing extinction include changes to the environment, destruction of **habitats**, disease, new **predators** and **competition** for resources. Endangered species are species at risk of extinction. Methods of preventing extinction include **conservation**.

Questions

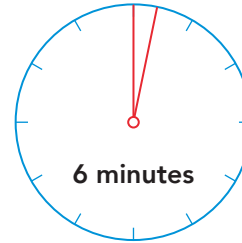
1. What does Darwin's theory state that organisms evolved as a result of?

Answers

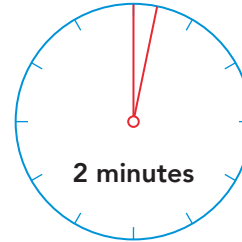
1. Natural selection.



Read your Leaders Guide twice. Cover, recite aloud and then check for improvements then do this again.

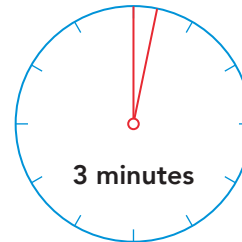


Use the examples to write **5 questions**. Ensure at least 1 is a **challenge** question.

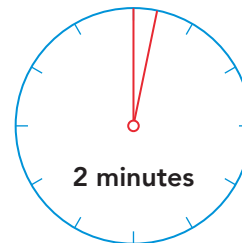


Cover your Leaders Guide.
Read each question and answer them aloud twice.

If you are unsure of an answer, check your Leaders Guide and then cover again repeating your answer aloud three times.



Without using your Leaders Guide, complete your self-quiz.



Check and correct your self-quiz using **green pen**.

English

- Z
1. Antonio and Shylock represent two extreme versions of Economic Man: Antonio is benevolent and enjoys the benefits of economic enterprise, without being competitive, whereas Shylock, the **antithesis**, is a capitalist predator, conferring good upon no one except himself.
 2. Shakespeare's use of the poetic form when Antonio describes Shylock can be seen to further discriminate against Shylock as it aligns **Christianity with art and literature as opposed to Judaism's capitalist and materialistic alignment**.
 3. Shakespeare's use of violent imagery in Shylock's penalty of 'a pound of flesh' evidences Shylock's unadulterated hate for Antonio, a prosperous, Christian merchant, above all other Christians, who has subjugated and oppressed him and his people.

Questions

1. Where does Shakespeare use violent imagery?

Answers

1. Shylock's penalty of 'a pound of flesh'.

Food Technology

- 3
- Employers-** must use control measures, implement control measures to protect workers, carry out a COSHH risk assessment, make sure all equipment is in good, safe working order and all PPE that can cause harm is removed.
- Personal Protective Equipment at Work Regulations 1992 (PPER)** The requirements are set out in the PPE regulations 1992. In addition, the food safety (General Food Hygiene) Regulations require every person working in a food handling area to wear suitable, clean and (where appropriate) protective clothing.
-

Questions

1. How does PPER link to what we have learned before?

Answers

1. An employer's responsibility to use control measures to protect workers.



Examples of questions

1. **What** is the definition of a poem?
2. **Where** does deposition mainly occur?
3. **Who** is Traci Bautista?
4. **When** did Elizabeth I become queen?
5. **How** are elements grouped together?
6. **Why** do we use third angle projection?
7. **List** sources of protein.
8. **Define** the literary term antithesis.

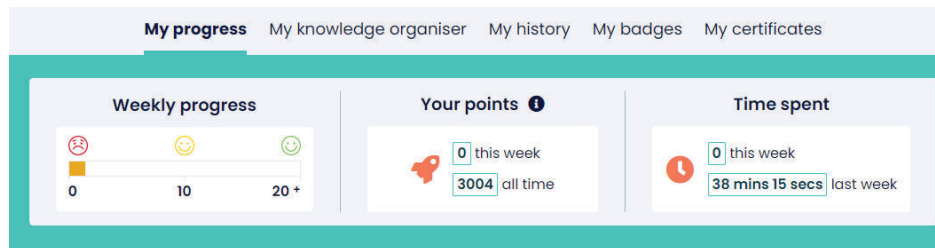
More challenging questions

1. How are and similar?
2. What is the main concept of ?
3. What are the strengths and weaknesses of ?
4. Compare and
5. How does link with what we have learned before?
6. What are some possible solutions to ?
7. Do you agree or disagree with this statement: ?
8. What do you still not understand about ?

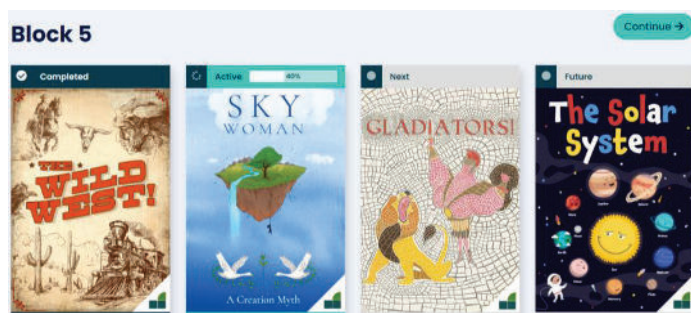




<https://app.bedrocklearning.org/>



- Bedrock Vocabulary is an online programme that helps you learn new vocabulary relevant to all your subjects.
- It will help you learn the tricky sort of language you might come across in textbooks, lessons or exams.
- Each topic consists of six 15-20 minute lessons, plus a pre- and post-test to track your progress.
- You are expected to complete 3 lessons a week
- 1 hour total.



<https://www.unifrog.org/sign-in>

- Explore how your interests lead to different education and training pathways.
- See what steps need to be ticked off to stand the best chance of application success.
- Study expert guides explaining how to navigate each step in the application process.








WHAT IS UNIFROG?
One-stop-shop for destinations

Pathways	Opportunities	Applications	Management
PERSONALITY QUIZ	USA UNIVERSITIES	ACTIVITIES	PLANNING
INTERESTS QUIZ	CANADA UNIVERSITIES	COMPETENCIES	MESSAGING
CAREERS	UK UNIVERSITIES	COMMON APP ESSAY	TEACHING RESOURCES
SUBJECTS	IRELAND UNIVERSITIES	PERSONAL STATEMENTS	INTERACTIONS
GOALS	EU UNIVERSITIES	STUDENT LETTERS & ESSAYS	DESTINATIONS
KNOW-HOW	AUSTRALASIA UNIVERSITIES	TEACHER LETTERS	USAGE CHARTS
MOOCs	ASIA UNIVERSITIES	RECOMMENDATIONS	DOWNLOADS
	MIDDLE EAST UNIVERSITIES	REFERENCES	
	APPRENTICESHIPS	CV / RESUME	
	COLLEGE & 6TH FORM	LOCKER	
	OXBRIDGE	DOCUMENT SUBMISSION	

Acti
Go to



My logins

Platform		Username	Password	Platform		Username	Password
	Email account https://outlook.live.com My email address is: _____				Sparx https://www.sparxmaths.uk/		
	TEAMS https://www.microsoft.com/en-gb/microsoft-teams/log-in				Seneca https://app.senecalearning.com/login		
	ClassChart https://www.classcharts.com	Pupil code: Download the ClassCharts app on your phone!			Unifrog https://www.unifrog.org/sign-in		
	Bedrock https://app.bedrocklearning.org/						

Links to all our online platforms can be found at <https://bourneendacademy.e-act.org.uk/>



Student safeguarding curriculum

To become a successful **future leader** students, you need to be able to make informed safe choices.

All students will take part in a weekly safeguarding session which will follow the schedule below, although it is subject to change depending on the needs of each year group.

Cycle 1		Cycle 2		Cycle 3	
What is a safeguarding culture?	Malicious communication and cyber bullying	Knife crime (serious youth violence)	Self-efficacy and self-reflection	Scenario based application (based on all topics covered last cycle)	Honor based abuse (inc FGM)
Staying safe online	United against bullying	Knife crime (impact of social media)	Domestic Violence and abuse 1	Bank holiday	Serious Youth Violence
Anti-Bullying	Sexual violence and harassment	Online Safety and Expectations	Domestic Violence and abuse 2	Mental Health awareness week and Child Criminal Exploitation (CCE)	Mental health and wellbeing
British Values	Substance misuse (caffeine and energy drinks)	Healthy v unhealthy relationships	Radicalisation (online safety)	Child Criminal Exploitation (CSE)	Scenario based application (based on all topics covered this cycle)
Mental wellbeing	Substance misuse (alcohol and smoking/e cigarettes)	Childrens mental Health week/safer internet day	Personal Wellbeing	Extremism	Scenario based application (based on all topics covered this cycle)
Mental Health	Inset day	Fears and Anxieties (Signs, Symptoms and support)	Inset day	Peer on Peer/Child on Child abuse	Inset day

READY RESPECT SAFE SAFEGUARDING INFORMATION

If you need to talk to someone about your wellbeing or safety or you are worried about another student, please speak to your pastoral team or any of the teachers below.

We are here to support you.

Ms. K Leavy Designated Safeguarding Lead

Office: T floor, main building (English corridor)

Ms. A Rogerson Deputy Designated Safeguarding Lead

Ms. J Walker Designated Safeguarding Staff

Office: W Block outside office

Ms. T Latter Designated Safeguarding Staff

Office: Sixth Form

Ms. I Slade Designated Safeguarding Staff

Office: T Floor (Pastoral office)

Ms. E Lee Designated Safeguarding Staff

Office: N Block (Pastoral office)

Mr. O Walters EACT Regional Safeguarding Lead



Tuesday: Positivity Day

Being positive and celebrating success is a tool we can use to improve our mood and our mental health. It is also proven that being positive increases your productivity, supports you in feeling more optimistic and can help motivate you to achieve more.

Week	Leader Points total from previous week	Something I am proud of from last week is...
<i>Example</i>	10	<i>I attended netball club after school. I completed all my homework on time.</i>
1		
2		
3		
4		
5		
6		

Week	Leader Points total from previous week	Something I am proud of from last week is...
7		
8		
9		
10		
11		
12		
13		



Wednesday: News and Current Affairs

The news plays a vital part within our society. It informs us about events that are happening which can have a direct impact on an individual. There are different types of news:

- **Local** – This can allow a community to engage in decisions for their local area.
- **National** – This can allow people to gain a sense of a national perspective and understand what is happening in other cities or towns the same country.
- **International** – Knowing what is happening in other countries gives people a perspective of each other's ways of life and cultural differences.

Week	True or False
1	1. 2. 3.
2	1. 2. 3.
3	1. 2. 3.
4	1. 2. 3.

Week	True or False
5	1. 2. 3.
6	1. 2. 3.
7	1. 2. 3.
8	1. 2. 3.

Week	True or False
9	1. 2. 3.
10	1. 2. 3.
11	1. 2. 3.
12	1. 2. 3.
13	1. 2. 3.



Thursday: Spellings

Spelling is important to improve our communication, literacy and has a direct impact on employment opportunities.

Week	Spelling
1	1. 4. 2. 5. 3.
2	1. 4. 2. 5. 3.
3	1. 4. 2. 5. 3.
4	1. 4. 2. 5. 3.
5	1. 4. 2. 5. 3.
6	1. 4. 2. 5. 3.

Week	Spelling
7	1. 4. 2. 5. 3.
8	1. 4. 2. 5. 3.
9	1. 4. 2. 5. 3.
10	1. 4. 2. 5. 3.
11	1. 4. 2. 5. 3.
12	1. 4. 2. 5. 3.
13	1. 4. 2. 5. 3.



Friday: Attendance Matters

Good attendance is an essential component to become a successful leader. *"Leadership is an action, not a position"*, Donald McGannon.

- There is a strong and significant relationship between a student's grades and their attendance at school.
- By keeping attendance above 98%, you will be demonstrating the professional standards that you will be held to in the world of work.
- We want all students to access the whole curriculum. Students who are absent from lessons are losing the opportunity to gain essential knowledge needed to progress to the next stage of study.

Week	My weekly attendance Percentage %	Comparison to previous week Include ↑ or ↓
1		
2		
3		
4		
5		
6		

Week	My weekly attendance Percentage %	Comparison to previous week Include ↑ or ↓
7		
8		
9		
10		
11		
12		
13		



Year 11 English Leadership Guide

Careers linked to these topics can include things like being a journalist, politician, police officer because when you read literature you examine and evaluate sources, you review the historical context identifying relevant issues for the time the text was written and then make comparisons to society today.

Week	I will need to know...	So that I can....
1	<ol style="list-style-type: none"> 1. A Christmas Carol was written by Charles Dickens in the Victorian era. At the time it was written Victorian society was experiencing an Industrial Revolution. Thomas Malthus believed the surplus population deserved to die if they could not support themselves. 2. Dickens despised the New Poor Law of 1834, which sought to reduce the money spent on the poor by expanding the workhouses and the cruel philosophy of Thomas Malthus who foresaw catastrophe for England if its masses were not 'checked' by famine, war, or disease. Dickens himself, experienced poverty and abandonment which he believed the poor laws exacerbated for the lower classes. 3. Appalled by the Malthusian attitudes of the time, Dickens uses Scrooge as a tool to caricature and represent the selfishness and avarice of the Victorian Capitalist classes. 'Solitary as an oyster' - the simile exemplifies Scrooge's misanthropy, his self imposed isolation and disassociation from society. Scrooge's avarice and misanthropy is juxtaposed with the morally warm character of Fred, who represents the Christian ideologies of benevolence and philanthropy. 4. Scrooge and Marley are presented by Dickens, using the language of Christianity, as divinely condemned. 5. Motivated by the desire to create social reform, Dickens uses the avaricious Scrooge as a tool to highlight the morally corrupting influence of capital and mammon. Scrooge is described as a "covetous old sinner" who claims the working class <i>"had better do it and decrease the surplus population."</i> 6. Scrooge is a misanthropic, miserly employer who only sees his employees in terms of profit. 	<ol style="list-style-type: none"> 1. Explore the context of the novella 2. Understand the New Poor Laws 3. Explore Malthus' theory 4. Understand caricature and Dickens' introduction of Scrooge and Fred
2	<ol style="list-style-type: none"> 1. In Stave 2, The ephemeral Ghost of Christmas Past personifies memory and uses the power of nostalgia to bring about a change in Scrooge <i>"And what was light one instant, at another time was dark, so the figure itself fluctuated in its distinctness."</i> 2. The Ghost of Christmas Past is used by Dickens to personify memory itself: <i>fluctuating, changing, relative</i>. Yet, the ghost also represents Scrooge's repressed self-knowledge and its uncanny strangeness makes clear that the Ghost will reveal hard truths for Scrooge, much as the text reveals such truths for readers. 3. Experiencing these memories induces a feeling of nostalgia in Scrooge, <i>"A lonely boy was reading near a feeble fire."</i> Dickens' uses the vision of Scrooge as a child to demonstrate how misanthropy and isolation to emerge from childhood trauma and suffering Dickens invites his contemporary reader to consider the historical source of their own negative traits to order to transform and achieve salvation. 4. Dickens attempts to use Fezziwig to model the antithesis of Scrooge's model of alienating, exploitative capitalism; here, Fezziwig presents a model of socially responsible capitalism that facilitates emotional and social connection with the worker. Through Fezziwig, Dickens is promoting an alternate model of socially responsible capitalism in which capital serves the welfare of the worker and society rather than itself. 5. The image of the <i>'golden idol'</i> is used to exemplify the superficial, baseless, heretical, and immoral character of Scrooge's love of mammon and serves to warn Dickens' Victorian leadership against the <i>'displacement'</i> of true, Christian morals and desire. 	<ol style="list-style-type: none"> 1. Analyse Dickens' presentation of the Ghost of Christmas Past, Fezziwig and Belle in Stave 2. 2. Understand key events in Scrooge's childhood
3	<ol style="list-style-type: none"> 1. The allusion to the mythical 'horn of plenty' associated Christmas with abundance, health and happiness, psychological contentment and euphoria. The image of the light demonstrates that the ghost is a source of truth and revelation for Scrooge. 2. The Ghost of Christmas Past personifies Christmas, spirit of contentment, abundance and nourishment, which was idealised by Dickens. He believed that Christmas embodied the Christian ideals of philanthropy, benevolence and family and should be followed all year round, not just at Christmas. 3. The Cratchits are used to idealise the power and moral value of the traditional, Victorian family unit, rejected by Scrooge. Much like Fred, the Cratchits are presented in opposition to Scrooge, as a Christian and social moral ideal that should be aspired to by those dedicated only to capital and mammon. They represent unity against a morally degraded, industrialised modern world demonstrating Dickens' privileging of a traditionalist, Christian family ideal. 4. Fred demonstrated agape by continuing to invite Scrooge to Christmas dinner even though Scrooge was misanthropic towards him. Dickens uses the idealised Fred as a tool to create pity for the misanthropic 'Oyster' that is Scrooge's character. 5. Tiny Tim demonstrates the Christian concept agape by hoping that others will see him and be reminded of Jesus – by unconditionally loving others. <i>'As good as gold... And better'</i> - wealth comes from within (from love, acceptance and kindness). Appalled by the selfishness and avarice of the Victorian Capitalist classes, Dickens uses the idealised Tiny Tim as a tool to create pity within the misanthropic Scrooge and therefore guide his path to metamorphosis. Tiny Tim's disability is used to represent the abuse and violence enacted on the poor. 	<ol style="list-style-type: none"> 1. Analyse Dickens' presentation of the Ghost of Christmas Present and Tiny Tim. 2. Understand who is pitied in Stave 3 and why.



Year 11 English Leadership Guide

Week	I will need to know...	So that I can....
4	<ol style="list-style-type: none"> Motivated by a desire to inspire his Victorian readership into social reform through education and philanthropy, Dickens uses the allegorical and 'hideous' characters of Ignorance and Want as a tool to personify the sins and corruption of Victorian, industrialised society. "This boy is Ignorance. This girl is Want. Beware them both." Dickens intends to borrow the allegorical form of morality plays and later religious texts such as John Bunyan's A Pilgrim's Progress in order to demonstrate the sins of Victorian society. The Ghost of Christmas Past uses nostalgia to change Scrooge. The Ghost of Christmas Present uses pity to change Scrooge. The Ghost of Christmas Yet to Come uses fear to change Scrooge. The dark and 'shrouded' Ghost of Christmas Yet to Come represents the unknown element of Scrooge's future, the fearful reality that he must look inside himself for truth and as a tool to create fear within Scrooge and scare the reader about the appalling effects of the Industrial Revolution on the poor. He uses fear as the final catalyst to bring about a change in Scrooge. These are all painful emotions-forms of suffering. It could be said that it is the suffering that is the catalyst by which Scrooge repents. Dickens uses his description of a future London, in Stave 4, to demonstrate to his Victorian readership that if society continues to enact such abuse on the poor as Scrooge and the capitalist classes do it will lead to the ruination of society. Such terrible conditions will lead to the corruption of those living in poverty. Dickens believed poverty led to criminality. In stave 1, London sounds warmer and somewhat welcoming. Even those living in poverty are described with a semantic field of warmth and light. In stave 4, the future London is described with the semantic field of sin/destitution. 	<ol style="list-style-type: none"> Understand how Dickens uses the allegorical figures of Ignorance and Want. Analyse Dickens' presentation of the Ghost of Christmas Yet to Come. Practice writing an academic paragraph in response to a question
5	<ol style="list-style-type: none"> Dickens appeals to his contemporary, middle-class readership by presenting Scrooge's character arc as a journey from damnation, through repentance, to redemption. Scrooge's three nights of suffering before his repentance are representative of Christ rising on the third day By the end of the novella Scrooge has undergone a metamorphosis. Scrooge must repent his past sins or will be divinely condemned like Marley. In Stave 5, Scrooge demonstrates his sentimentality by sending the Turkey to the Cratchits, going to Fred's for Christmas dinner, raising Bob Cratchit's wages, and offering his generosity to the boy who fetched the Turkey and the cab driver. Dickens wants the Victorian Capitalist class to redeem themselves by going through their own metamorphosis and creating social reform by changing the way they treat the poor at the hands of the Industrial Revolution. Motivated by a desire to inspire social reform, Dickens uses the 'angelic' and newly reformed Scrooge as a tool to demonstrate his belief that the Victorian Capitalist Class can undergo a process of metamorphosis and change their ways with an improved vigour. Dickens dramatizes the process of psychological introspection, "I don't know anything. I'm quite a baby." Like Scrooge they must confront their repressed sins to achieve redemption. "I am light as a feather" – Scrooge represents a restored goodness that is associated with youthfulness, contentment and Christian redemption. He represents an ideal to Dickens' readership. 	<ol style="list-style-type: none"> Understand Scrooge's Character Arc. Understand how Scrooge's redemption is presented Prepare for the assessments.
6	Revision for the assessments.	Prepare for the mock assessments.
7	Assessment week: GCSE Language Paper 1 and GCSE Literature Paper 1 (Macbeth and A Christmas Carol)	Assessments
8	Assessment week: GCSE Language Paper 2 and GCSE Literature Paper 2 (An Inspector Calls, Power and Conflict Poetry, Unseen Poetry)	Assessments
9	<u>Revision:</u> GCSE English Language Paper 1 Explorations in Creative Reading and Writing using extracts from A Christmas Carol. Section A.	1. Practice Q1-4.
10	<u>Revision:</u> GCSE English Language Paper 2 Writers' Viewpoints and Perspectives using extracts inspired by A Christmas Carol. Section A.	1. Practice Q1-4.
11	<u>Revision:</u> GCSE English Language Paper 1 and 2. Section B.	1. Practice Q5.



Year 11 Physics Leadership Guide: Waves

Careers linked to Waves can include things like Medical Physicist as I will be developing my knowledge of medical imaging techniques like X-rays and treatment techniques like Radiotherapy

Week/ Topic	I will need to know:	So that I can:
1 – Ionising Radiation	<ol style="list-style-type: none"> 1. Thermal energy is transferred differently through each state of matter: conduction through solids, convection through liquids and gases, radiation through a vacuum. 2. There are three types of ionising radiation: alpha, beta and gamma 3. In general, waves are a way of transferring energy 	<ol style="list-style-type: none"> 1. Describe the thermal energy transfer through a solid, liquid/gas and vacuum 2. Describe the similarities between alpha beta and gamma radiation
2 – The Properties of Waves	<ol style="list-style-type: none"> 1. Waves are either longitudinal or transverse 2. Longitudinal waves oscillate parallel to the direction of energy transfer, while transverse waves oscillate perpendicular to the direction of energy transfer 3. We can calculate the speed of waves using the wavelength and the frequency 	<ol style="list-style-type: none"> 1. Describe the difference between longitudinal and transverse waves. 2. Describe evidence that, for both ripples on a water surface and sound waves in air, it is the wave and not the water or air itself that travels
3 – Electromagnetic Spectrum	<ol style="list-style-type: none"> 1. The electromagnetic spectrum is a continuous scale of wave with different wavelengths 2. There are seven categories of wave on the electromagnetic spectrum; radio waves, microwaves, infrared radiation, visible light, ultraviolet, x-rays and gamma rays 3. Ultraviolet, x-rays and gamma rays are all ionising radiation and therefore can be used for imaging and medical treatment 	<ol style="list-style-type: none"> 1. Give examples that illustrate the transfer of energy by electromagnetic waves. 2. Draw conclusions from given data about the risks and consequences of exposure to radiation 3. Give brief explanations why each type of electromagnetic wave is suitable for the practical application.
4 – Light Waves	<ol style="list-style-type: none"> 1. Humans can only detect visible light from the electromagnetic spectrum 2. Humans detect colour because different objects reflect and absorb different wavelengths of visible light 3. Light is refracted through materials of different densities at different angles, this causes an object to appear distorted 	<ol style="list-style-type: none"> 1. Describe how the colour of an object is related to the differential absorption, transmission and reflection of different wavelengths of light by the object 2. Describe the effect of viewing objects through filters or the effect on light of passing through filters 3. Describe why an opaque object has a particular colour.
5 – Infrared Radiation	<ol style="list-style-type: none"> 1. All objects emit infrared radiation. Humans cannot see this wave, but cameras can be used to detect heat by detecting the amount of infrared radiation 2. Black matt and black shiny materials emit the most infrared radiation 3. Silver and shiny materials emit the least infrared radiation 	<ol style="list-style-type: none"> 1. Explain how the temperature of a body is related to the balance between incoming radiation absorbed and radiation emitted
6 – Waves Required Practical	<ol style="list-style-type: none"> 1. Waves can be studied using a ripple tank; the wavelength, frequency and wave speed can be determined 2. Waves can be studied using a string with two fixed ends; the wavelength, frequency and wave speed can be determined 	<ol style="list-style-type: none"> 1. Describe a method to measure the speed of ripples on a water surface 2. Describe a method to measure the speed of waves in air



Year 11 Physics Leadership Guide: Waves

Week/ Topic	I will need to know:	So that I can:
7 – Refraction and Reflection	<ol style="list-style-type: none"> 1. Refraction and reflection can be demonstrated using a ray box and different materials 2. Lenses can be used to focus light or change the appearance of an image 3. The two types of lens are convex and concave 	<ol style="list-style-type: none"> 1. Construct ray diagrams to illustrate the reflection of a wave at a surface. 2. Describe the effects of reflection, transmission and absorption of waves at material interfaces.
8 – Sound Waves	<ol style="list-style-type: none"> 1. Sound is transferred as a longitudinal wave 2. Within the ear, sound waves cause the ear drum and other parts to vibrate which causes the sensation of sound. The conversion of sound waves to vibrations of solids works over a limited frequency range. This restricts the limits of human hearing. 	<ol style="list-style-type: none"> 1. Describe processes which convert wave disturbances between sound waves and vibrations in solids. 2. Explain why such processes only work over a limited frequency range and the relevance of this to human hearing.
9 – Ultrasound Waves	<ol style="list-style-type: none"> 1. Ultrasound waves have a frequency higher than the upper limit of hearing for humans. The time taken for the reflections to reach a detector can be used to determine how far away such a boundary is. This allows ultrasound waves to be used for both medical and industrial imaging. 2. Seismic waves are produced by earthquakes 3. Echo sounding, using high frequency sound waves is used to detect objects in deep water and measure water depth. 	<ol style="list-style-type: none"> 1. Explain in qualitative terms, how the differences in velocity, absorption and reflection between different types of wave in solids and liquids can be used both for detection and exploration of structures which are hidden from direct observation.
10	<p>Leader's Prep:</p> <p>To prepare for your upcoming assessment, you should self quiz on knowledge from weeks 1-10; revising for assessments keeps you on the path to leadership. Work hard and show your best!</p> <p>Ways to revise.</p>	<p>AQA Physics Paper 2 Mock</p> <p>P5 Forces</p> <p>P6 Waves</p> <p>P7 Electromagnetism</p> <p>P8 Space</p> <p><i>It is important that you understand that you have not been taught all of the topics above. Please attempt all questions! This is a baseline assessment to see what we need to teach you. It is also important that you have as much exposure as possible, so that when the real exam comes around you know what to expect.</i></p>
11	<p>- <u>1hr of Seneca per week</u>. This could be in the form of your homework or independent study. Strive for 80% in all tasks to ensure that you are secure on the material you are revising.</p> <p>- <u>BBC Bitesize</u> can use for making notes and self quizzing the knowledge that you need to know for the assessment. The also have questions on each page that are exam style questions.</p> <p>- <u>CGP Retrieval Booklets</u> can be used to test yourself on the knowledge that you have revised on both Seneca and BBC Bite</p>	

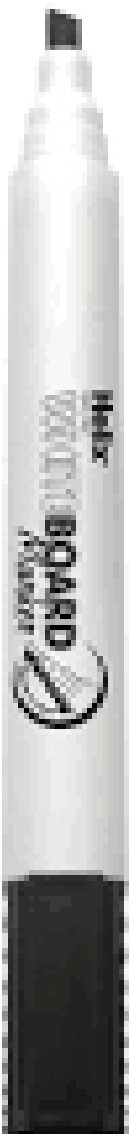








WHITEBOARD



Developin
Lead





g Future
ers



