



FEARNHILL
SCHOOL

Year 10

Super Curriculum

The Fearnhill School Super Curriculum

The super curriculum at Fearnhill is designed to give you something extra outside of the learning you do in the classroom to:

- build your independence as a curious thinker,
- fire your passion for your favourite subjects,
- and broaden your knowledge of the wider world.

In this booklet, you will find a range of challenges for each subject for you to complete in your own time. They can be done in any order you like.

There are three challenges per subject divided into three levels of difficulty and effort: 'Figuring It Out' (easiest), 'Freewheeling' (more challenging), and 'Flying' (most challenging).

As you complete the challenges, you'll be given reward points, and if you complete all the 'Flying' challenges in any subject, you will be put forward to join our Fearnhill Flyers programme. Just show your teacher (or Miss Corbishley) evidence of what you've done!

So whether you are developing an art sketchbook, learning to play a musical instrument, vying to be captain of a sports team, or developing code breaking skills, I hope these challenges will inspire you to think about your own development as a learner.

Please do discuss these challenges with your friends and family – there are no rules saying you have to complete them on your own.

I hope you find these enjoyable, and wish you luck!

Yours, Miss Corbishley.

Contents

Art.....	4
Business	5
Computing.....	6
Design Technology.....	7
Drama	8
English.....	9
Food Technology	10
Geography.....	11
History.....	12
Maths.....	13
French	14
Spanish.....	15
PE	16
PRE	17
Science	18

Art

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	<p>Use and take notes from GCSE Bitesize Art and Design:</p> <p>https://www.bbc.com/bitesize/subjects/z6hs34j</p>	<p>Visit any of the Tate Galleries including: Tate Britain, Tate Modern, Tate Liverpool or Tate St Ives:</p> <p>http://www.tate.org.uk/visit/tatmodern http://www.tate.org.uk/visit/tateliverpool http://www.tate.org.uk/visit/tate-stives</p>	<p>Fill a concertina sketchbook with records of all your Art based visits documenting the journey across many pages through drawing, photography and mixed media.</p>
Challenge 2	<p>Explore 10 Textile Artists and their techniques:</p> <p>https://www.textileartists.org/10-contemporary-embroidery-artists</p>	<p>Visit one of the annual Knit, stitch shows, and complete one of the free workshops on offer:</p> <p>https://www.theknittingandstitchingshow.com/</p>	<p>Record your experiments with the new techniques and make textile samples inspired by your artist research.</p> <p>Share with your Art teacher and class.</p>
Challenge 3	<p>Research the development of Graphic Design over the last 50 Years:</p> <p>http://graphics50.rca.ac.uk/#about</p>	<p>Try out some advanced techniques using Photoshop:</p> <p>https://blog.advancedphotoshop.co.uk/category/tutorials/</p>	<p>Visit the New Designers Exhibition- an annual showcase of new Art and Design Graduate talent:</p> <p>https://www.newdesigners.com</p>

Business

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Watch an episode of The Apprentice and identify the entrepreneurial skills, qualities and motives that the candidates display, and that Lord Sugar states that he wants to see.	Give a presentation about the life of an entrepreneur that you admire, focusing on how the entrepreneur became successful.	Conduct an interview with a small business owner about their entrepreneurial motives and how they came up with their business idea.
Challenge 2	Create a storyboard that shows the stages that a market researcher has to go through when creating and conducting a questionnaire.	Conduct a piece of primary market research for a topic of your choice, ensuring that you ask questions that will provide you with both qualitative and quantitative data.	Conduct a piece of market research for a topic of your choice, then use Microsoft Excel to help you to analyse your results. Put your findings into a PowerPoint presentation or report and hand it to your teacher.
Challenge 3	Find an article about a business that has struggled financially. Think about ways that the business could have improved their cash flow to minimise their financial difficulties.	‘Businesses should make every effort to make sure that they are meeting each of the four customer needs in order to be successful’. Evaluate this statement, creating an argument for and against.	Write your own case study about a business of your choice. Your case study should focus on what the business’ stakeholders are, and how the business takes action to make sure that they are meeting all of their stakeholders’ interests.

Computing

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Visit the National Museum of Computing in Milton Keynes to see the impact that computers have made for us over the years.	Have a go yourself at beating a computer opponent at chess: https://www.chess.com/play/computer	See how we have used computers to solve mathematical problems: The Four Colour Map Theorem https://youtu.be/NgbK43jB4rQ
Challenge 2	Create a wire frame for a website on a topic or company that interests you. You can be as creative as you like. You might even do it for a family member or friend of the family and get their feedback.	Computer Science Fundamentals - A collection of interactive quizzes that will help you master computer science fundamentals. https://brilliant.org/courses/computer-science-fundamentals/	Research The Internet of Things: Probably the most pervasive trend is the Web of Things, where just about everything we interact with becomes a computable entity. Research how future developments in this area may change or revolutionise our lives even further.
Challenge 3	Python - Develop your Python programming skills by challenging yourself to complete as many tasks on Snakify as you can. https://snakify.org/	Try to set up Python to perform some basic maths calculations to match some topics you have been using in mathematics, does Python use BIBMAS?	Intelligent Machines – Write a short essay debating the following question – Are computers more intelligent than the people who make them?

Design Technology

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Identify a STEM employer in your local area.	Visit the Natural History museum. http://www.nhm.ac.uk/	Visit the Design museum, write an essay on an exhibit that you find interesting. https://designmuseum.org
Challenge 2	Take a trip to London during the Design Festival.	Visit the Science museum; find an interactive exhibition that uses new technology. https://www.sciencemuseum.org.uk/	Listen to two TED talks on emerging technologies: https://www.ted.com/talks
Challenge 3	Listen to a STEM talk podcast: www.ihmc.us.stemtalks	Choose a fusion 360 tutorial by Lars Christiansen and work through the project.	Look into upcycling, pick a project and have a go at it.

Drama

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Read a Brecht play and a Greek play and make note of the similarities and differences between them.	Give a presentation about Greek theatre and the playwrights of the time to your class.	Learn a Greek monologue or a monologue from a Brechtian play and present it to your peers.
Challenge 2	Watch one Alan Bennett's Talking head monologues and make a note of all the theatrical devices used by the actor and director.	Find a comic monologue; prepare it for performance.	Audition and take part in a school production.
Challenge 3	Keep a scrapbook of ideas, stimuli and interesting articles pictures etc that could be used for the start of a piece of drama.	Research and create a display on a theatre practitioner of your choice- make sure your display is bright, eye-catching and full of educational material.	Prepare and deliver a workshop on a theatre practitioner not yet studied in class. Set PLT at the end of your session.

English

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	<p>Three years after 'An Inspector Calls' was first performed, 'Death of a Salesman' was performed in New York, USA.</p> <p>Read an online copy of the play or watch a performance on youtube.</p> <p>Make a Venn diagrams of similarities and differences.</p>	<p>Read 'Tragedy and the Common Man' by Arthur Miller.</p> <p>He gives his views about what should make a modern tragedy.</p> <p>Read this and make relevant bullet point notes.</p>	<p>Write an essay or presentation to answer the following:</p> <p>Compare the way that Miller and Priestley present the everyday man or woman.</p>
Challenge 2	<p>Read 'The Farmer's Bride from the 'Love and Relationships' collection (found online) and analyse it as an unseen poem.</p>	<p>Watch and make notes on this video about the poem:</p> <p>https://www.youtube.com/watch?v=WaCmQObFrg</p>	<p>Find one more poem from the 'Love and Relationships' collection and make a poster to summarise the differences.</p>
Challenge 3	<p>Find two examples of successful pitches on 'Dragons Den'.</p>	<p>Make a list of the verbal and non-verbal techniques that you can use in a persuasive speech.</p>	<p>Write a persuasive speech to make this argument:</p> <p>The best poem in the 'Power and Conflict' anthology is [...]</p>

Food Technology

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Research current food trends by using Good Food magazines or the internet.	Visit Borough Market and Harrods to see the latest trends.	Create a product using the latest trends.
Challenge 2	Practise KS3 and KS4 practical skills e.g., enriched pastry or dough, separating egg whites for meringue making.	Make a dish incorporating KS3 and KS4 skills.	Create a product incorporating KS 3 skills, KS4 skills and a latest food trend.
Challenge 3	Buy a broadsheet newspaper and read current articles on food, e.g. sourcing, dietary needs, nutrition.	Make notes on the articles.	See your Food Tech teacher and explain what you have learnt.

Geography

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Complete a National Geography GeoBee.	Design and draw a residential house that would be earthquake proof in an LIC.	Investigate sustainable fishing - explain what changes need to be made to our lives to reduce our negative impact on our oceans.
Challenge 2	List and discuss 4 ways that Letchworth is connected to a nearby town.	Investigate the circular economy - can it really replace the linear economy? Produce a presentation explaining how it can.	How sustainable can Fearnhill be? Produce and represent results from school survey on energy, food, water and waste activities.
Challenge 3	Investigate where 12 items from home are created/made.	Can palm oil be sustainable? Produce a for and against poster for palm oil.	Investigate whaling on the Faroe Islands - is this practice sustainable and should it continue?

History

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Read a piece of historical fiction relating to a topic we have studied e.g. 'The Book Thief'.	Practise writing exam style answer using the practise questions and guidance on the VLE revision page.	Read a biography or autobiography of a historical figure we have studied as part of your GCSE.
Challenge 2	Listen to Dan Snow's "History Hit" podcast https://www.historyhit.com/podcasts/ There are hundreds to choose from!	Create a detailed timeline for each historical period we have studied including a minimum of 25 events.	Write a "how to guide" for one type of exam question showing how to write the perfect answer.
Challenge 3	Watch the film "Hitler: The Rise of Evil" – available on YouTube at: https://www.bing.com/videos/search?q=hitler+rise+of+evil+youtube&view=detail&mid=258D5190A9A3B893E543258D5190A9A3B893E543&FORM=VIRE	Design a revision resource for a key topic we have studied and share it with the rest of your class.	Create a poster advertising the benefits of GCSE History to future students. Highlight the skills they will learn and how this may help them in later life.

Maths

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Visit the National Museum of Computing in Milton Keynes to see the impact that computers have made for us over the years.	Have a go yourself at beating a computer opponent at chess: https://www.chess.com/play/computer	See how we have used computers to solve mathematical problems: The Four Colour Map Theorem https://youtu.be/NgbK43jB4rQ
Challenge 2	Use onmaths.com to look at some of the GCSE topics and attempt some of the online topic tests to see how you get on.	Create a revision video suitable for Key Stage 3 students on a topic of your choice. This can be passed on to your teacher if you're feeling brave.	London Maths Trail created by Chris Olley at Kings College London www.themathszone.com/
Challenge 3	Start to look at algebraic proofs, video 365 and 366 at Corbett Maths: https://corbettmaths.com/contents/	Try some simple proofs of your own: https://www.quora.com/What-are-some-simple-maths-proofs-for-kids	Attend the Maths Club

French

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	<p>Watch the film: Intouchables – an excellent comedy film about a disabled man and his carer or</p> <p>Etre et avoir – a documentary set in a rural school.</p>	<p>Make a video to learn a grammar point that you have learnt in class.</p>	<p>Research how, when and why France became a republic. Create a timeline to help you remember.</p>
Challenge 2	<p>Listen to the free access Podcasts at Coffeefrench:</p> <p>https://radiolingua.com/coffeefrench/</p>	<p>Plan a week’s holiday in France and work out an itinerary.</p>	<p>Go onto Médecins sans Frontières website and listen to the presentations about their work all round the world</p> <p>http://www.msf.fr/msf</p>
Challenge 3	<p>Go online and read Le Point or Le Monde; note down 20 new items of vocab</p> <p>www.lemonde.fr www.lepoint.fr</p>	<p>Read some authentic French Haikus, then try and write one yourself</p> <p>http://www.modernhaiku.org/essays/frenchhaiku.html</p>	<p>Research the possibility of working in France</p> <p>https://www.woof.fr/ https://www.gooverseas.com/gap-year/au-pair/france</p> <p>https://www.workaway.info/</p>

Spanish

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	<p>Try some of the Instituto de Cervantes resources:</p> <p>http://londres.cervantes.es/website/mapa_site_web_en.shtm</p>	<p>Watch the film <i>Mujeres al borde de un ataque de nervios</i> – Pedro Almodovar’s comedy including an early appearance by Antonio Banderas or <i>Todo sobre mi madre</i> A drama/ comedy from the famous Spanish director Pedro Almodovar.</p>	<p>Research the civil war and subsequent dictatorship in Spain that lasted until 1975.</p>
Challenge 2	<p>Listen to the free content at this really good podcast site:</p> <p>https://www.newsinslowspanish.com/</p>	<p>Access the content designed to help you prepare for the GCSE Spanish exam:</p> <p>https://www.bbc.com/education/subjects/z4dqxn</p>	<p>Beginner, intermediate and advanced grammar, with self-marking comprehension activities:</p> <p>https://studyspanish.com/grammar</p>
Challenge 3	<p>Use an online dictionary to find some hilarious translations of simple phrases.</p> <p>https://www.spanishdict.com/guide/spanish-sayings-with-no-english-equivalents</p>	<p>Plan and go on a visit if possible to one of the famous sites in London and do the tour with a Spanish commentary.</p>	<p>Try to beat the high score on a quizlet set for A-Level vocabulary/ expressions – especially if you are aiming for a level 9 at GCSE.</p>

PE

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Read books on sport including: <ul style="list-style-type: none"> • The Sports Gene by David Epstein 2013 • Bounce by Matthew Syed 2011 • The Talent Code by Daniel Coyle 2009 	Write an article for Fearnfile on a book that you have read.	Watch BBC One Panorama – Catch me if you can
Challenge 2	Visit Wimbledon Lawn Tennis Club museum or championships, Hatfield House/Hampton Court Real Tennis Courts.	Create a timeline of the development of tennis over the years.	Represent the school in any sport including House Sports. Challenge yourself to represent the County.
Challenge 3	Create a scrapbook of any sports person or sporting event from broadsheet newspapers.	Write a coaching plan for any sport.	Lead an activity during Sport Relief week/Children in Need or Comic relief.

PRE

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	Women and the Church: Read Chapter 13 of Bible Matters by Peter and Charlotte Vardy	Christianity: Read Chapter 2: From the Beginning of the Universe of The Puzzle of Christianity by Peter and Charlotte Vardy.	Islam: Watch the TedTalk on Islamophobia, What do you think when you look at me? Dalia Mogahed https://www.youtube.com/watch?v=wzkFoetp_M
Challenge 2	War and conflict: Listen to the following Ted Talk What I saw in the war by Janine di Giovanni: https://www.youtube.com/watch?v=k2hQL9Zr_0kk	Christianity: Plan a visit to the St Josephs Roman Catholic Church: Bedwell Cres, Stevenage SG1 1NJ	Islam: Online research – Look at the information on the Angels. Make your own notes on this. http://www.bbc.co.uk/guides/zqtnwxs
Challenge 3	GCSE: Book yourself onto one of Peter Vardy's Candle Conferences https://candleconferences.com/gcse-rs/	Christianity: Listen to the podcast on 'The God Particle' – consider Is the "God particle" truly "a blow to the Christian faith,"? https://player.fm/series/science-scripture-salvation/does-the-god-particle-prove-the-big-bang	Islam: Plan a visit to the Stevenage Muslim Community Centre: Vardon Rd, Stevenage SG1 5PJ (tel: 01438 350865)

Science

	Figuring It Out (2 reward points each)	Freewheeling (5 reward points each)	Flying (10 reward points each)
Challenge 1	<p>Play the game – what is your fastest time?</p> <p>https://www.purposegames.com/game/the-heart-quiz</p>	<p>Watch the video: https://www.bbc.co.uk/programmes/p04t0k4k</p> <p>Explain why the heart should be inside the heart.</p>	<p>Create your own Kahoot quiz based on the heart structure and circulatory system.</p>
Challenge 2	<p>A mole is just a name given to a very big number. Make a list of numbers from everyday life that have a different name. For example, 100 is sometimes called a century. Now research Avogadro and his constant. See if you can write the number out in full. Why do you think we call this number a mole?</p>	<p>Find a few recipes that use eggs. Express the recipes in how many fractions of a dozen eggs they use. Can you work out how much of one of the other ingredients you would need if you used 2 dozen eggs?</p>	<p>How does the “Freewheeling” you did relate to how we use moles?</p>
Challenge 3	<p>Watch https://www.duracell.co.uk/technology/technology-in-the-service-of-battery-power/</p> <p>Note down the different components of a, "battery", and list what they do.</p>	<p>Note down the electron donor and receiver from the video? Can you write a chemical equation for the reaction? How about a half equation?</p>	<p>Why do you think we don't just generate all our electricity with batteries like this?</p>