Lesson 1	Exploring what is biomimicry and biomimetics is			Lesson Breakdown
Objectives	To learn about biomimicry in design and technology and how it can influence design			● Introduction to biomimicry design and its influence on textiles ● To understand what biomimicry is and how it influences current design thinking. ● Using nature to inspire designs can help us to make more successful and sustainable products. ● Explain what it is and how it can be used to inspire and influence product design/engineering. Use video here to help: https://www.youtube.com/watch?v=fWJHh3LoO70 If time: Students to research 4 different biomimicry examples of fashion/footwear and sketch/write/ create a digital mood board notes about each. ● Students to use product analysis skills to analyse a biomimicry design ● Students to be given biomimicry examples that have been transformed into a product ● Theory: Review of drawings by detailing how to annotate ● Sketch a range of design ideas on ICT software
Outcomes	Design influence on shape and colour			
Time frame	1 hour	Assessment		
Prior learning	Product Analysis , 6 rs,, design , analysis , evaluation, identity, understanding user needs			
Key vocabulary	Biomimicry, prototypes, materials, sustainability, recycling			
Character and cultural development	Observing biomimicry design and how standard design can include its elements of nature			
Skills Coverage	Research analysis, research and exploration, generation of creative ideas , using computer based tools			
Extension / challenge	Sketch final idea			Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Lesson 2	Introduction into the deign brief problem	
Objectives	To be able to understand the use of professional designers and the use of prototypes in design	
Outcomes	To know what a prototype is and how its used in design	
Time frame	1 hour	Assessment	
Prior learning	Design specifications, functional and appealing professional, responding to a brief, design of professional influences	
Key vocabulary	Design, designer, color, shape, form, pattern, overlap, repeat, value, material (canvas, leather, plastic, fabric), style, logo, still life, consumerism	
Character and cultural development	Teenage appeal, consideration of user needs, sneaker design and job roles in design	
Skills Coverage	Analysis of past and present professionals, prototype in design	
Extension / challenge	Protypes and design – make a prototype of a shoe box for a childs shoe. 30cmx 30cm and depth 8cm. consider measurement, shape and function.	Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Lesson breakdown
- **A recent survey found out that 90% of teenagers found footwear boring or too practical. You have been encouraged to enter a competition to design new footwear that will appeal to teenagers and have a biomimicry influence . You task is to design and make a prototype of them and consider the marketing of them.**
- What is a prototype ? how do designers use protypes
- Students to discuss a range of prototypes and understand why they are necessary in design
- Analyse the work of past and present professionals to help broaden their understanding and see how the designs are created
- Advantages and disadvantages of protypes of designers
- Students to discussion/images/examples on fashion art and artists – Jimmy Choo, Andy Warhol, Yayoi Kusama, Alexander McQueen, Betsey Johnson, Coco Chanel, Donatella Versace (images of logos and brands) and their design in footwear
- Explain how each of the five factors listed below have to be considered by the designer in designing a new shoe. a) Shape b) Form c) Texture d) Colour
- Sneaker Design - MRS. DOPICO'S ART CLASS (dopicoart.com)

Possible trip to Group-design techniques: Paper prototypes, visualisations and models • V&A Blog (vam.ac.uk)

V and A trip to design prototypes

Lesson 3	**To be able to consider how footwear is marketed to consumers and to analyse the logos of brands.**		
Objectives	To analyse current footwear marketing campaigns and create a logo for your prototype		
Outcomes	Logo design after researching exiting logo design		
Time frame	1 hours	Assessment	prototypes
Prior learning	Design specifications, functional and appealing professional, responding to a brief, design of professional influences		
Key vocabulary	Design, designer, colour, shape, form, pattern, overlap, repeat, value, material (canvas, leather, plastic, fabric), style, logo, still life, consumerism		
Character and cultural development	Teenage appeal, consideration of user needs, sneaker design and job roles in design		
Skills Coverage	Analysis of past and present professionals, prototype in design		
Extension / challenge	Explain Fashion Design as a career, use examples and add visual images		

lesson breakdown
- Assessment – Microsoft forms assessment on prototypes
- What makes a brand familiar? Why do we recognize certain logos and not others? Why do we think certain brands or companies are better than others? Why are some brands more expensive?
- What is a logo? Why are they important? (To familiarize ourselves with a product. Seeing logos over and over again help make that company more familiar and consumers are more likely to purchase things they are familiar with)
- Look around and see what logos or brands are on our shoes. Are some the same? Different? How do we recognize certain shoes? (i.e. the Nike swoosh)
- Show examples of different artists and fashion designers. Andy Warhol drew shoes for ads in a magazine before becoming the pop artist as we know him today.
- **Students to design their own logo for their footwear after completing research**
- Students can either design their own shoe with their own logo, pattern, colours – or they can draw the shoe that's in front of them, which is considered a "still life." Students should still use their shoe for reference (i.e. what direction the laces go, how thick the sole of the shoe is, etc)
- Students can use photoshop to design their footwear logo taking into consideration of biomimicry design
- Start to design footwear ready for prototype making

  Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Lesson 4	Analysis of new and emerging technologies		
Objectives	To understand the need for new and emerging technologies		
Outcomes	Complete a prototype of your shoe following your design		
Time frame	1 hour	Assessment	
Prior learning	Design specifications, functional and appealing professional, responding to a brief, design of professional influences		
Key vocabulary	Emerging and develop		
Character and cultural development	Teenage appeal, consideration of user needs, footwear design and job roles in design		
Skills Coverage	Analysis of past and present professionals, prototype in design Nike trainer development – analysis and exploration		
Extension / challenge	Complete a pair of shoe prototypes		

Lesson Breakdown :

- Nike just announced a self-lacing shoe - Nike's Adapt BB self-lacing sneakers let you tie your shoes from an app - The Verge

- Students need to analyse the new technology developed by nike and the self lacing shoe and understand the developments and the impact on individuals and businesses.

- Why is there a need to develop new and emerging technologies

    =**definition of emerging and develop**

Class discussion on new technology in shoes/trainer design

Shoe Design for the Makerspace - YouTube

- Students to search - Google images for "shoe soles" shows a huge variety of shapes/designs

- Complete a prototype of your shoe using materials provided

Create a prototype of the shoe. Start with a base by tracing your foot on a piece of cardboard or paper and cutting along the outline. Use a variety of materials to add to this base.
– What materials can you use to make sure the shoe stays attached to your foot?
– How can you make the shoe more durable?
– Can you add colour or decorations to personalize your shoes?

Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Lesson 5	**Test and refine ideas prototype**	**Lesson Breakdown**
Objectives	To test and refine my footwear prototype	Continu**e** footwear design and start prototype – see pictures of previous lesson on protypes used and the materials used
Outcomes	Results from testing and adaption list.	**Testing your prototype against your design brief.**
Prior learning	Design specifications, functional and appealing professional, responding to a brief, design of professional influences	Try on your prototype! Check your prototype for anything that might poke your foot. Walk, run, and jump around. Record your observations- adapt and make changes after your have analysed your results.
Key vocabulary	Emerging and develop	– What worked well in your design? – What needs improvement? Does it meet the design brief ? Does the intended user think this is suitable ? how do you know ?
Character and cultural development	Teenage appeal, consideration of user needs, footwear design and job roles in design	Create a list of possible changes and justify the reasons why the changes need to be made Based on your observations, adjust your design to brainstorm, plan, build, and test a new prototype! – What parts of your shoe can you improve and how? - As a designer what's been the impact of your design on the environment - Responsibilities as designers
Extension/ challenge	Complete market research and ask the target audience their opinion on your prototype design. Justify your decision to them and make changes/adapt your design from the information you get.	Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Lesson 6	**Week 6 assessment - student voice and end of unit reflection**		
Objectives	● To review last 6 weeks and to complete a student voice		
Outcomes	Student voice and end of unit review		
Time frame	1 hour	Assessment	Assessment of final outcome.
Prior learning	Design specifications, functional and appealing professional, responding to a brief, design of professional influences		
Key vocabulary	Reflect , evaluate, creativity		
Character and cultural development	Teenage appeal, consideration of user needs, sneaker design and job roles in design		
Skills Coverage	Analysis of past and present professionals, prototype in design		
Extension / challenge	Produce a survey for teenagers to see fi your shoe meets the design brief problem		

Lesson Breakdown

- Assessment – prototype of shoe design either on ict or made by materials
- Justified decisions made
- Does it match the design brief problem ?

Reflect and student voice

Reflect. After you complete the prototype, reflect on your experience:

– What problems did you have in your design and how did you use your creativity to solve them?

– What is else could you redesign to solve a problem ?

Students to complete end of unit reflection and student voice

Homework - A3 card or mounted card create a moodboard - taking inspiration from nature/ biomimicry create a personalised moodboard that explores colours, themes, materials of nature and design new items of clothing/ accessorize that can be worn.

Year 8 Design Technology 2022

Rotation 2 - fashion textiles

THE ACADEMY OF ST NICHOLAS

ALL SAINTS Multi Academy Trust

KS3 Subject Intent: What we want the pupils to know by the end of Year 8 in product design

Students will develop knowledge regarding society and design whilst developing key industry IT skills designing for an audience and linking in with global issues. Students will undertake research and testing to help evaluate ideas to generate fully functional design proposals.   Students will develop oral and written presentation skills and be able to justify their decisions once they have completed research on cultural influences

Design : research to identify user needs: identity and solve design problems and how to reformulate the problems given. Use a variety of approachesto generate creative ideas. Design ideas using modelling and present ideas oral or digitally. Responsibility of designers and the impact of consumer choice on footwear design.

Evaluate: test, evaluate refine ideas, take into account others feedback, understanding of the environment and impact on individuals and society

Technical knowledge : properties of materials and performance of materials, fast fashion, designing, sustainability and the responsibilities of designers.

KS3 Subject Ethos: How we reflect the Academy's core values within the Curriculum: Respect, Ambition, Resilience, Compassion The core ethos of the school is to aim to send each young person able and qualified to play their full part, and in year 7 our aim if to allow each young person to develop skills and knowledge; both in practical marking, from woodwork to food and nutrition. The students will be supported in DT with outcomes and lessons constantly adapting to suit the learners needs, in order for them to be proud with what outcomes they can achieve as they look towards the future. As a knowledge engaged curriculum, we believe that knowledge underpins and enables the application of skills; both are entwined. As a department we define the powerful knowledge our students need and help them recall it by developing their technical skills that focus on visualisation and realisation of ideas and information, with a focus on nutrition, drawing, , physical materials food - hard materials as well as knowledge and understanding of the current and emergent means of production, design and food nutrition.