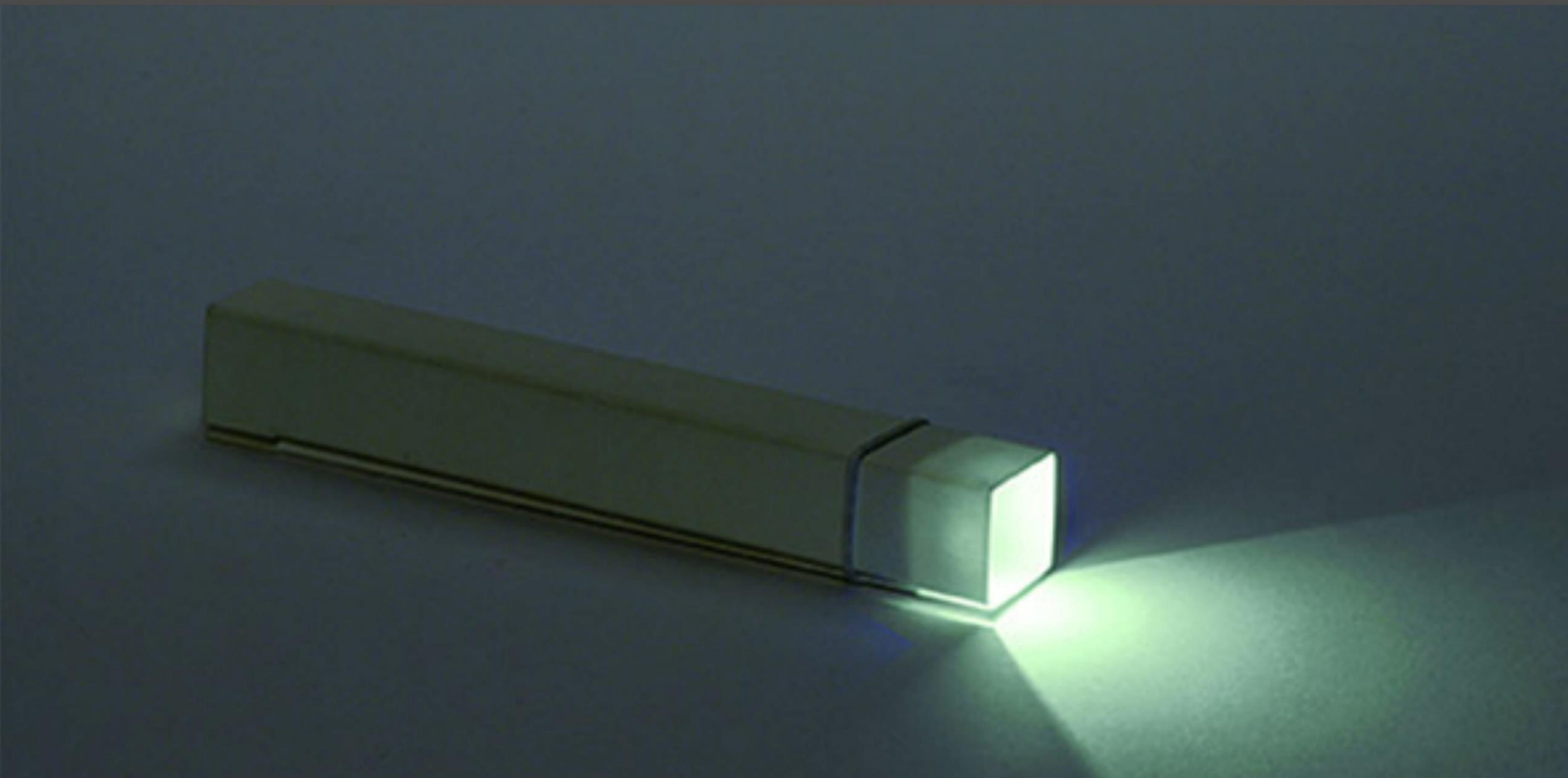
FENISCOWLES PRIMARY SCHOOL

Striving for Excellence

DESIGN TECHNOLOGY
YEAR 4 MODULE OVERVIEWS



Y4	Context	Design	Make	Evaluate	Technical Knowledge
Autumn	***Structures*** ***Pavilions*** Pupils explore pavilion structures, learning about what they are used for and investigating how to create strong and stable structures before also creating their own pavilions complete with cladding.	Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect Building frame structures designed to support weight	Creating a range of different shaped frame structures Making a variety of free standing frame structures of different shapes and sizes Selecting appropriate materials to build a strong structure and for the cladding Reinforcing corners to strengthen a structure Creating a design in accordance with a plan Learning to create different textural effects with materials	Evaluating structures made by the class Describing what characteristics of a design and construction made it the most effective Considering effective and ineffective designs	Learning what pavilions are and their purpose Building on prior knowledge of net structures and broadening knowledge of frame structures Learning that architects consider light, shadow and patterns when designing Implementing frame and shell structure knowledge Considering effective and ineffective designs

Spring	***Mechanisms*** ***Making a slingshot car*** Children transform lollipop sticks, wheels, dowel and straws onto a moving car. They will be using a glue gun to construct the materials, making the launch mechanism, designing and also making the vehicle using nets and assembling these to the chassis.	Designing a shape that reduces air resistance Drawing a net to create a structure from Choosing shapes that increase or decrease speed as a result of air resistance Personalising a design	Measuring, marking, cutting and assembling with increasing accuracy Making a model based on a chosen design	Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance	Learning that products change and evolve over time Learning that all moving things have kinetic energy Understanding that kinetic energy is the energy that something (object person) has by being in motion
Summer	***Electrical systems*** ***Torches*** In this topic, children apply their scientific understanding of electrical systems to create a torch made from easily available materials and objects. They will also design and evaluate their product against set design criteria.	Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas	Making a torch with a working electrical circuit and switch Using appropriate equipment to cut and attach materials Assembling a torch according to the design and success criteria	Evaluating electrical products Testing and evaluating the success of a final product and taking inspiration from the work of peers	Learning how electrical items work Identifying electrical products Learning what electrical conductors and insulators are Understanding that a battery contains stored electricity and can be used to power products Identifying the features of a torch Understanding how a torch works

					Articulating the positives and negatives about different torches
Summer	***Digital World*** ***Mindful moments timer*** Children design, program, prototype and brand a Micro:bit mindful moments timer, to a specified amount of minutes. They carry out research existing product analysis to determine how a programmable product may be used to aid a mindfulness moment.	Writing design criteria for a programmed timer (Micro:bit) Exploring different mindfulness strategies Applying the results of my research to further inform my design criteria Developing a prototype case for my mindful moment timer Using and manipulating shapes and clipart, using computer-aided design (CAD), to produce a logo Following a list of design requirements	Developing a prototype case for my mindful moment timer Creating a 3D structure using a net	Investigating and analysing a range of timers by identifying and comparing their advantages and disadvantages Evaluating my micro:bit program against points on my design criteria and amending them to include any changes I made Documenting and evaluating my project Understanding what a logo is and why they are important in the world of design and business	Writing design criteria for a programmed timer (Micro:bit) Programming a micro:bit in the Microsoft micro:bit editor, to time a set number of seconds/minutes upon button press Testing my program for bugs (errors in the code) Finding and fixing the bug