

Year 10 Curriculum Content: 3D Design

ASSESSMENT OBJECTIVES

AO1

Develop ideas through investigations, showing critical understanding of artist's work.

AO2

Selecting and experimenting with appropriate media, materials, techniques and processes.

AO3

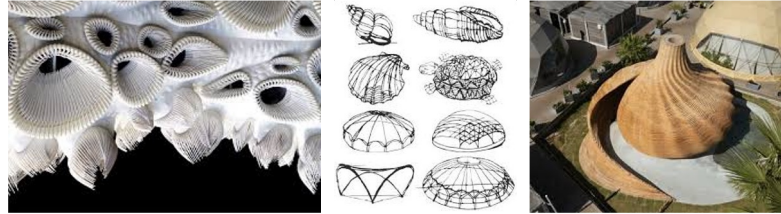
Record ideas, observations and insights relevant to intentions as work progresses.

AO4

Present a personal and meaningful response that demonstrates understanding of visual language.

BIOMIMICRY IN ARCHITECTURE

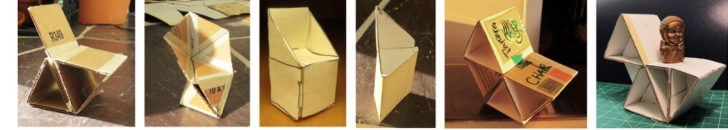
Architecture has always been tied with nature and regarded it as a source of inspiration for years. It has also been a muse for the creation of several philosophies and movements that have characterised design. Biomimicry is one such ideology that has helped mould and contributes structures, principles, and forms to the built environment. Biomimicry is a method of solving human challenges by learning and imitating the strategies found in nature. It applies to several aspects of the architectural and engineering field in terms of materials, structural systems and design.



PROTOTYPING

What is Prototyping?

A prototype is a physical manifestation of your idea or concept. It will be a functional product made of different mediums that serve either for education or informative purposes the function of your idea, and most importantly, the viability of your product.



KEY WORDS

Biomimicry
Bio' means living organism; 'mimicry' means to imitate.

Critical Analysis
To make a judgement about the quality of evidence and include when it can and can't support your argument.

Visual language
A visual language is a system of communication using visual elements

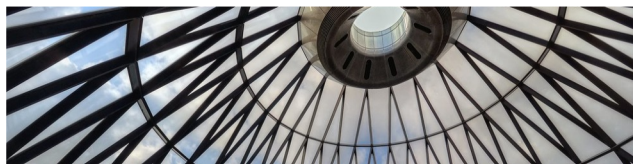
Influence
The capacity to have an effect on the character, development, or behaviour of someone or something, or the effect itself.

Norman Foster - The Architect behind 30 St. Mary Axe

30 St. Mary Axe, London, colloquially known as "the Gherkin," is a commercial skyscraper built in the modernist architectural style located in the financial district in London, England. The building's informal name comes from its ovular, elongated egg shape which resembles a gherkin, or pickled cucumber. It stands 591 feet high and 41 stories tall, with numerous office spaces, a bar for tenants, and a restaurant and observation deck located on the top floors of the structure.

The building was designed by modernist architect Norman Foster, with construction beginning in 2001 and the building opening in 2004 as home to the reinsurance company Swiss Re (which is why it is sometimes known as the Swiss Re Building). The Gherkin is an architectural masterpiece that is currently one of the most recognizable structures in London.

The Gherkin mimics the shape and lattice structure of the sponge to do in air what the sponge does in water. The round shape of the building reduces wind deflections and creates the external pressure differentials that drive the natural ventilation system. Air can flow around the building more smoothly compared to the rectilinear shape of a traditional office tower. A lattice-like, diagonally braced structure around the exterior allows for an open floor plan without interior columns. The openness also provides a large amount of natural light penetration.



EVALUATING YOUR EXPERIMENTS

- What have you done? What tools, machinery, techniques and materials have you used?
- Why did you do it? What were you trying to achieve? How does your work relate to the designer we've looked at? How has the designers work influenced yours?
- Do you think your experiment was successful? If so, why?
- Do you think any parts of your experiment were not as successful? If so, how could you do it differently in the future achieve the desired outcome?
- If you use this tool/machine/technique/material again how could you progress more in your knowledge and understanding? If we had more time what would you have tried?
- What do you think of the design? Should it be altered to achieve the desired outcome?
- Would you consider using similar machinery, tools, techniques and materials in your future GCSE work? Which parts have you enjoyed and why?