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**Knowledge Rich Curriculum Plan**

GCSE Design Core

Specialist Technical Principles - 2.2 Forces and stresses



| **GCSE Design Core** | **Specialist Technical Principles  2.2 Forces and stresses** |  |  |  |
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| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this students, need to already know that…* | **Assessment** |
| **Lesson:**  **Tension and shear** | * Students will know how forces can be applied to products * Students will know which types of forces are applied to products * Students will know the difference between static and dynamic forces * Students will know that static force is a motionless force and dynamic is a force that moves * Students will know the types of forces Tension and shear * Students will know that tension force is described as a pulling force from either end of the object * Students will know that shear force is described as a ripping force from either end of the object | Force: strength or energy as an attribute of physical action or movement.  Tension: the state of being stretched tight.  Shear: break off or cause to break off, owing to a structural strain. | * ***Students need to already know basics of forces*** * ***Students need to already know how products can be impacted*** * ***Students need to already know that forces can move or be still*** | Are there any forces being applied around this room?  How are these forces similar to each other? |
| **Lesson:**  **Torsion and bending** | * Students will know how forces can be applied to products * Students will know which types of forces are applied to products * Students will know the types of forces Torsion and bending * Students will know that torsion force is described as a twisting force from either end of the object * Students will know that bending force is described as a upward or downward force from either end of the object | Force: strength or energy as an attribute of physical action or movement.  Torsion: the action of twisting or the state of being twisted, especially of one end of an object relative to the other.  Bending: shape or force (something straight) into a curve or angle. | * ***Students need to already know the movement of bending*** * ***Students need to already know the twisting motion*** | Are there any forces being applied around this room?  How are these forces similar to each other? |