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| **Design Challenges (20 Minute Makes)** | | **AGE 11-14** |
| **Objectives** | **Background** | |
| * Use new skills to evaluate a systems and control product. * Apply accurate cutting skills to the production of a systems and control product. * Use new skills to understand various types of mechanisms. | This 1 hour session is the 8th of a series of 10 lessons, it is the second half of a 2 hour design challenge where students explore the development of a simple mechanism toy. | |
| **The Big Questions** | **Curriculum Links** | |
| * How can we develop a simple mechanism to use in a toy? * Can a toy inspire self confidence in young children? | Design & Technology KS3 PoS  Design:   * use research and exploration, such as the study of different cultures, to identify and understand user needs * Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses   Technical knowledge:   * understand how more advanced mechanical systems used in their products enable changes in movement and force | |
| **Unit Summary** |  | |
| * This unit of work is a series of 5 design challenges that cover a range of materials areas with students challenged to create a small product in only 20 minutes, within a 2-hour session. Different spiritual, moral, social and cultural themes are explored across the sessions, and a large emphasis is placed on the evaluation of the success of the students’ small product prototype. | | |

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| **(Title)** | **AGE 11-14** |

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| **1 Resources** | **5 Plenary** | |
| * Student PowerPoint * Design challenges student workbook * Thick white card * Scissors * Paper fasteners | *5 minutes*  Students carry out a self-assessment considering which aspects of spiritual, moral, social and cultural issues they have explored through their design work | |
| **2 Starter** |
| 5 minutes  The design brief is recapped:  Design and make a waving animal toy prototype, that could be used to inspire a child aged 3-5 spiritually - to inspire them to be self confident. |
| **3 Introduction** | **6 Follow up session** | |
| 10 minutes  Demonstration of how to effectively mark out, cut and assemble a final mechanism toy is given, using the panda example template. The design is copied to thick card, cut and then paper fastener is used to allow the panda’s arm to pivot and wave. | | Students should produce either an alternate design that uses a different mechanism that they have researched, or add more moving components to their first porotype toy. |
| **4 Activity** |  | |
| 20 minutes  Students produce a prototype toy, their chosen design is copied to thick card, cut and then paper fastener is used to allow the toy’s arm to pivot and wave.  20 minutes  Students evaluate the success of their design and suggest further improvements that they may or may not be able to produce. They consider:   * How does the prototype appeal to children aged 5-10? * What could the prototype be use to promote? * How the prototype could be developed so it is suitable for use for promoting a product to children aged 5-10? | | |