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| **Scales of Production (Charity Keyrings)** | | **AGE 14-16 (vocational ability)** |
| **Objectives** | **Background** | |
| * To understand the scale of engineering production: continuous.   Demonstrated by the following outcomes:   * Identify what continuous production is. * Identify some advantages and disadvantages of continuous production. * Describe continuous production to enable future comparisons. | This 1 hour session is the 10th of a unit of 10 lessons exploring scales of production, specifically one-off, batch, mass and continuous; this session explores continuous production in more detail. | |
| **The Big Questions** | **Curriculum Links** | |
| * What are scales of production? * What types of products are produced at each scale? * Why is one production scale sometimes preferable? | Pearson BTEC Level 1/Level 2 First Award in Engineering  Unit 1: The Engineered World  Learning aim A: Know about engineering processes used to produce modern engineered products  Topic A3: Scales of production  Characteristics and advantages/disadvantages of the following scales of production used in engineering manufacture:  ● one-off/jobbing production  ● batch production  ● mass production  ● continuous production. | |
| **Unit Summary** |  | |
| * This unit of work is a series of 10 lessons to allow students to develop knowledge of scales of production mainly through focused practical tasks. Students produce various key ring products as a live brief to raise money for charity (Children in Need). | | |

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

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| **1 Resources** | **5 Plenary** | |
| * Scales of Production 9-10 - Continuous production PowerPoint * Scales of Production Student Workbook   Continuous Production Equipment:   * Laser cutter (or other CAD/CAM as available)   Mass production equipment (optional) | *5 minutes*  As practical work has taken place students need to ensure:   * All work is stored safely and is identifiable. * All tools are returned to the correct places. * The workshop is left appropriately clean and tidy. | |
| **2 Starter** |
| 5 minutes  Students log into PC and load relevant CAD software and files. |
| **3 Introduction** | **6 Follow up session** | |
| 10 minutes  Students review drawings produced for continuous production keyrings so far. Checking they have:   * Set up drawing to correct material size. * Used appropriate tools to produce design. * Added detailing such as a hole for the keyring to the correct diameter. | | Students review their efforts and production outcomes for each scale of production and propose how in future they would make similar products to raise further charity funds. |
| **4 Activity** |  | |
| 40 minutes  Students may begin to continuously produce their key ring designs by operating the laser cutter (or other CAM). Some students may continue their production line mass production with the view that they will transition their production to continuous (CAM) production if there is enough market demand for the higher volume that can be produced using continuous production. | | |