Manufacturing vs. Custom

**Description of Activity**

* Students will explore the manufacturing process of electric guitar building and custom guitar building.
* The purpose of this activity is to have the students to analyze the differences in the processes.
* This activity is used for Engineering or Mechatronic Classes
* Grade Level: 9-12

**Learning Objectives:**

**(List measureable objectives)**

1. Students will research electric guitar manufacturing videos. Example: Gibson, Fender
2. Students will research electric guitar custom building.
3. Students will compare and contrast the process of building electric guitars.

**Standards:**

## Examining All Aspects of an Industry – CTE Standards

1. [Examine aspects of planning within an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916591)
2. [Examine aspects of management within an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916592)
3. [Examine aspects of financial responsibility within an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916593)
4. [Examine technical and production skills required of workers within an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916594)
5. [Examine principles of technology that underlie an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916595)
6. [Examine labor issues related to an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916596)
7. [Examine community issues related to an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916597)
8. [Examine health, safety, and environmental issues related to an industry/organization.](http://www.cteresource.org/verso/courses/8436/engineering-drawing-and-design-tasklist/965916598)

**Materials Required:**

* Computer
* Internet
* Word/Website Editor/Blog

**Safety:**

**safetys:**

* No safety concerns

**References:**

* YouTube Videos on Guitar Manufacturing

**Activity:**

* Students will research YouTube videos on electric guitar manufacturing and custom electric guitar building. After their research they will then compare and contrast the differences of the two processes.

Example: Student Blog of the two videos with descriptions

**Quiz:**

**Directions: List the differences of the two types of manufacturing processes.**

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|  | **Custom Manufacturing** | [**Mass Production**](http://www.vista-industrial.com/mass-production.php) |
| [**Quantities**](http://www.vista-industrial.com/quantities.php) | Small | Large |
| **Manufacturing method** | Small / one person shop | Assembly Lines |
| **Manufacturing source** | Human | Humans and/or machines |
| **Labor costs** | More | Less |
| **Human error** | More | Less |
| **Design changes** | Easy | Difficult |
| **Business Model** | Made to order | Large inventory / JIT |
| **Production time** | High | Low |
| **Quality Assurance** | High | Low |
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