

Computer Integrated Manufacturing Topical Research Project

Introduction

Computer Integrated Manufacturing encompasses many different topics that deal with how things are made worldwide in today's global economy. It is not just robotics and cnc machines, but encompasses much, much more.

In this activity you are going to become an "expert" in one small field of CIM. You will then spend a little bit of time doing some internet research on a topic, and then you will present your findings to your class using Prezi®. After a short presentation on how to write a selective response type question, you will also develop two multiple choice questions to test the knowledge of your fellow students. Remember: you are the expert and you need to get the main ideas about your topic across to your classmates.

You must include the following information in your presentation:

- | | |
|---|--|
| • How is your topic defined? | Include the basics about the key elements of your topic. |
| • Who was Important? | Include individuals or companies that you found that were important in some way to this topic. |
| • How was this topic important to the history of manufacturing? | Find out some important dates in the history of this topic. |

Be sure to check the attached rubric to see how you will be graded before you start your work.

Resources

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|---------------------------------|-----------------------------|
| • Computer with internet access | • This activity |
| • Notebook | • Two to four class periods |



Process

1. Choose a topic. As you and your instructor choose the topics below, put a check in the the box next to the topic so you know which ones have been chosen.

Topics:

Conveyor Systems

- | | |
|---|---|
| <input type="checkbox"/> Computer Aided Design (CAD) | <input type="checkbox"/> Automated Storage and Retrieval Systems (ASRS) |
| <input type="checkbox"/> Computer Aided Manufacturing (CAM) | <input type="checkbox"/> Automated Guided Vehicles (AGV) |
| <input type="checkbox"/> Just In Time Manufacturing (JIT) | <input type="checkbox"/> Industrial Robotic Arms |
| <input type="checkbox"/> Kaizen | <input type="checkbox"/> Gantry Crane |
| <input type="checkbox"/> Lean Manufacturing | <input type="checkbox"/> Programmable Logic Controller (PLC) |
| <input type="checkbox"/> Six Sigma | <input type="checkbox"/> Computer Numerical Control - Lathe |
| <input type="checkbox"/> Lights Out Manufacturing | <input type="checkbox"/> Computer Numerical Control - Mill |
| <input type="checkbox"/> | <input type="checkbox"/> Computer Numerical Control – Machining Center |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

2. Check out the rubric so that you know what is needed before you start.
3. Do your research. Bookmark or favorite the information you think is important according to the rubric.
4. Put the information above into your presentation.
 - a. Add graphics that would make it interesting.
 - b. Be sure to include links to pictures and information.
5. Listen to your instructor's explanation on how to write a good multiple choice question
6. Write two multiple choice questions pertaining to the information you have in your presentation.
7. Submit the presentation and the questions to your instructor for review.

NOTES:

Computer Integrated Manufacturing Research Rubric

Topics	5 Points	4 Points	3 Points	2-0 Points	Score
Content: Definition	Thoroughly and clearly states the main points and precise details of the definition.	Adequately states the main points and details of the definition	States most of the main points and details that focus on the definition. May include some unnecessary information, or missing some information.	States few main points and details that focus on the definition, or information does not relate to topic.	
Content: Who?	Thoroughly and clearly states the main points and precise details that deal with the importance of an individual/company to the chosen topic.	Adequately states the main points and details that deal with the importance of an individual/company to the chosen topic..	States most of the main points and details that focus on the importance of an individual/company to the chosen topic.. May include some unnecessary information, or missing some information	States few main points and details that focus on the importance of an individual/company to the chosen topic..	
Content: History	Thoroughly and clearly states the main points and precise details about the history of the chosen topic. Contains 3 or more dates.	Adequately states the main points and details about the history of the chosen topic. Contains two dates only.	States most of the main points and details about the history of the chosen topic. Contains only one correct date of importance.	States most of the main points and details about the history of the chosen topic. Contains only one date of importance or less. Dates may be wrong/irrelevant.	
Links	4 or more different working links from reliable internet sources.	3 different working links from reliable internet sources.	2 different working links from reliable internet sources.	One or no links at all from reliable internet sources.	
Graphics	Includes many appropriate high quality graphics with links	Only one or two appropriate graphics with links	Graphics lacking/missing links	Minimal or no appropriate graphics/missing links	
Followed Directions	Organized information well Includes Title slide Appropriate text on pages No crazy backgrounds/transitions	Somewhat organized information . Includes Title slide Inadequate text on pages No crazy backgrounds/transitions	Unorganized information . Includes Title slide Inadequate text on pages Or crazy backgrounds/transitions	Missing info and/or No Title slide and/or Or crazy backgrounds/transitions	
Quality	Effective use of templates or designs makes the presentation theme visually appealing. Presentation lasted twelve to fifteen minutes.	Effective use of templates. Presentation theme somewhat appealing. Presentation lasted twelve to fifteen minutes.	Ineffective use of templates. Slides were somewhat appealing, but were not consistent. Presentation did not adhere to timeframe.	Slides were not effective or appealing. Presentation did not adhere to timeframe. Presentation showed little preparation.	
Creativity	The presentation has many exciting elements that make it interesting and informative to the audience.	The presentation has some exciting elements which make it somewhat interesting and informative to the audience.	There is little evidence of creativity that would make it interesting and informative to the audience.	The presentation lacks creativity and detail. Not very interesting or informative	
Questions	Two excellent questions with excellent distractors. Well written, fair questions. Questions could be used as is.	Two good questions with good distractors. Questions may not have been completely clear. Questions were fair. Questions needed a little tweaking by the teacher to make them excellent		One or both questions were lacking clarity, and may not have good choices for distractors. Could not be used without a lot of work on the part of the teacher.	

Teacher Notes (45-60 minute periods)

Prior to Activity	<ul style="list-style-type: none"> • If you choose to use Prezi, be sure you and the students know how to set up accounts, use the website, and submit the links to you. • You may also have the students submit their questions electronically so that you can easily cut and paste them into a quiz or other form of assessment. • Feel free to add or delete topics to the list as you see fit.
Day 1	<ul style="list-style-type: none"> • Introduce students to the History of Manufacturing (PPT) • Introduce this activity • Choose topics • Set up Prezi/Presentation Template • HOMEWORK: Begin Research
Days 2-3	<ul style="list-style-type: none"> • Continue research • Last 10 minutes of day 2: Present your version of “How to write a good multiple choice question” • Submit Presentation (Score them according to the rubric. FIX MAJOR MISTAKES) • Submit Questions (Score them according to the rubric. Fix them and make a written quiz from all the good questions.
Day 4 (OPTIONAL)	<ul style="list-style-type: none"> • Give students links to all of the presentations electronically • Give students the quiz you made previously from their questions. • Allow them to take the quiz after looking through the presentations on their own. -OR- • Have kids present.