-Updated by JAG National November 2021

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| **P R O J E C T O V E R V I E W** |
| **Name of Project:** Designing Your Future Career in Advanced Manufacturing  | **Duration (days):** 3-4 weeks | **Written For:** ☒Period Schedule ☐Trimester ☐Block Schedule ☐Semester |
| **Subject/Course:** JAG- Advanced Manufacturing  | **Teacher(s):** Rebecca Leinaar | **State:** IA | **Grade Level(s):** ☐7/8 ☐Alternative Ed. ☒9/10 ☐Out of School ☒11/12 ☒Any |
| **Other Subject Areas to be Included:** Click here to enter text. |
| **Project Summary**What will the students be doing? What challenges will they face? What is the purpose? | Students will learn about advanced manufacturing careers through playing a game, a personality test, and investigative research. After their research they will create a job posting for that particular job. Based on their personality test results they will be put into groups to create an innovative design concept to improve a product or process.  |
| **Driving Question**What problems/questions will students be learning about? | Who am I in the world of Advanced Manufacturing?  |
| **Entry Event**How will you introduce the topic in an engaging way? | Start by asking the students what Advanced Manufacturing is, using Padlet to project questions and student responses on the board. Students will then complete the Anticipation Guide (see attachment 1).Then students will play Careers in Advanced Manufacturing BINGO (see attachment 2).  |
| **Public Product**How will students be able to demonstrate what they have learned? | **Team:** Students will be put into groups based on their advanced manufacturing careers determined through their personality test. They will come up with an innovative design concept/model to improve a product or process.  | **Presentation Audience**☒Class☐School☐Community☐Experts☐Web☐Other: Click here to enter text. |
| **Individual:** Students will research a career in advanced manufacturing based on their personality test. They will then create a job posting for that career.  |

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| **P R O J E C T O V E R V I E W** |
| **Competency Attainment**What competencies should students understand, know, and be able to do as a result of this PBL? | **What competencies will you introduce in this project?** (Level 1):A.1, A.2**What competencies will be in progress during this project?** (Level 2):A.6,G.38, G.40, G43, G45, G46, G49, G53 **What competencies will students be able to demonstrate mastery by the end of the project?** (Level 3):A.1, A.2, A.3, A.4, A.6, G.38, G.40, G41, G43, G45, G46, G49, G53  |
| **Formative Assessments** (Check all that apply or add your own)How will you assess student learning throughout the PBL? | ☒Checklists | ☐Notes | ☒Plans/Outlines/Prototypes |
| ☐Concept Maps | ☐Online Test/Exams | ☐Quizzes/Tests |
| ☐Journal/Learning Log | ☐Practice Presentations | ☐Rough Drafts |
| ☐Other (see PBL Library for ideas): Click here to enter text. |
| **Summative Assessments**(Check all that apply or add your own)How will you assess student learning at the completion of the project? | ☐Essay | ☐Oral Presentation w/Rubric | ☒Peer Evaluation |
| ☐Multiple Choice/Short Answer Test | ☐Written Final w/ Rubric | ☐Self-Evaluation |
| ☐Other (see PBL Library for ideas):  |
| **Reflection Methods**(Check all that apply or add your own)How will you provide intentional opportunities for students to reflect on learning throughout the PBL? | ☐Journal/Learning Log | ☐Fishbowl Discussion | ☐Survey |
| ☒Whole-Class Discussion | ☐Focus Group |  |
| ☒Other (see PBL Library for ides): Anticipation Guide reflection (see attachment 1). |

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| **Career Association**How will you build student leadership into the PBL? Think of natural ways to build leadership, extend ownership, and empower your students through this project. | **Which CA Goal(s) will be covered in this PBL?** ☐Leadership☐Community Service☒Career Prep☐Civic Awareness☐Social Awareness☐Fundraising☐Other: Click here to enter text. | **What roles will your officers lead in planning?**Leadership: Click here to enter text.Community Service: Click here to enter text. Career Prep: Invite guests from the field of advanced manufacturing Civic Awareness: Click here to enter text. Social Awareness: Send thank-you notes to guests Fundraising: Click here to enter text. Other: Click here to enter text. |
| **How will you incorporate committees, or the rest of your class?** Leadership: Click here to enter text. Community Service: Click here to enter text. Career Prep: Invite guests from the field of advanced manufacturing Civic Awareness: Click here to enter text. Social Awareness: Send thank-you notes to guestsFundraising: Click here to enter text. Other: Click here to enter text. |
| **Which Career Pathways will be incorporated into this PBL?** | **Which employers/businesses will you work with throughout this project?**Multiple employers will be used. Depending on each groups design project an employer for that area will be contacted.  |
| ☐Agriculture, Food & Natural Resources☐Architecture &Construction☐Arts, A/V Technology &Communications☐Business Management &  Administration☐Education & Training☐Finance☐Government & Public Administration☐Health Sciences☐Hospitality & Tourism | ☐Human Services☐Information Technology☐Law, Public Safety, Corrections &  Security☒Manufacturing☐Marketing☐Science, Technology, Engineering &  Math☐Transportation, Distribution &  Logistics |
| **Employer Engagement Strategy** How will you utilize employer connections to increase relevance? | **Circle One:**☐Meet and Greet☐Classroom Presentation☐Project Observation☐Skype/Webinar☐Mock Interview☒Other: Employers will help answer questions the groups may have in order to develop their design.  | **Circle Two:**☐Service Learning☐Company Tour☐Mentoring☐Co-Develop PBL/Scaffolding☐Critique of Public Product ☐Other: Click here to enter text. | **Circle 3:**☐Job Shadow☐Limited Time Work Experience☐Pre-Apprenticeship☐Internship/Apprenticeship☐Summer Job☐Other: Click here to enter text. |

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| **P R O J E C T O V E R V I E W** |
| **Scaffolding***\*this is a high level overview, details can be found in the Student Learning Guide*What lessons, exercises, and activities will be integrated into the project that build a student’s understanding and experience with the content? How is this scaffolding be leading students towards the Driving Question and ultimately to a high-quality Public Project? | **Prior to the Project Beginning:**(What do you need to do to prepare for the project to begin?)Familiarize yourself with advanced manufacturing terms and careersMake copies of attachmentsCreate a Padlet account for entry event question- <https://www.bookwidgets.com/blog/2017/08/30-creative-ways-to-use-padlet-for-teachers-and-students> **Launching the Project:**(How will you SPARK their attention?)Perform the entry eventsShare the driving question Discuss student voice and choice **Project Navigation:** (What are the main ideas and lessons you will need to take from the first day, through completion of the PBL?)Discuss what careers are available in Advanced manufacturing Research careers Provide checklist for job posting Create job posting Group assignments Share examples of innovative design concepts Review rubric Contact employers/career specialists Group work Presentation of public products Reflection whole class discussion  |
| **Accommodations**What modifications will you need to make to fit the needs of all students in your classroom? | **Adjustments may be made based on 504 or IEP accommodations** | **Revision & Critique**How will you provide opportunities for students to review their work and provide feedback for improvement?  | Gallery walk |
| **Resources**How will you incorporate business professionals, employers, community leaders, organizations, technology, funding and other resources to implement this project?  | **WHO will you be incorporating?**☐School Staff☒Business Professionals/Employers☒Community Leaders/Organizations☐Technology ☐Other: Click here to enter text. | **HOW will you be incorporating? (please describe)**Employers will help answer questions the groups may have to develop their design, either through email, in person, or via webcam.  |

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| **S T U D E N T L E A R N I N G G U I D E** |
| **Project Title:** Designing Your Future Career in Advanced Manufacturing  |
| **Driving Question:** Who am I in the world of advanced manufacturing?  |
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| **Description of Activity/Product**What will students, specialists, guests, etc. be doing during this portion? | **Learning Outcomes/Targets**What knowledge, understanding & success skills will students need to successfully complete this portion? |
| ☒Formative☐Final Product | Entry Event- Student will answer a series of questions on what they know about advanced manufacturing (see attachment 1).Using Padlet students will answer the question: What is advanced manufacturing? What careers are there in advanced manufacturing? Students will play Careers in Advanced Manufacturing BINGO (attachment 2).  | Students will be able to identify different careers in advanced manufacturing.  |
| ☐Team☒Individual |
| ☐Formative☐Final Product | Students will rank their personality type (see attachment 3). They will complete the first page without the careers filled in. Once they have completed it, discuss what advanced manufacturing careers would fit under each personality type. Have students write them down on their sheet for later use.  |  Students will be able to identify which career in advanced manufacturing fits their personality best.  |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Students will pick a career from the personality type they ranked the highest. They will research that career and create a job posting/poster for it (see Attachment 4 for checklist).Job posting can be displayed in the classroom or in the hallway. | Students will be able to create a job posting with detailed information for a career in advanced manufacturing.  |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Students will brainstorm ideas for a product or process they would like to improve or create. They will also come up with an employer or career specialist they would like to interview and interview question to help them develop a cutting-edge futuristic concept or process (See attachment 6).Groups will interview an employer/career specialist either in person, through emails, or webcam. Teacher-will reach out to employers, iJAG Director of Strategic Advancement, or iJAG Strategic Partnership Manager. | Based on discussion and interviews students will be able to design an innovative product.  |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Students will work on their innovative design concept or process  | Students will understand what advanced manufacturing is and how advanced manufacturing processes and systems must be able to identify problems, create solutions, think critically, effectively communicate as part of a team, and apply new technologies and skills to improve a product or concept. |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Peer review & critique- Gallery Walk  | Students will revise their product or concept based on their peer feedback |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Students will present their final product (see attachment 7 for peer evaluation rubric) | Students will assess peer presentations. |
| ☐Team☐Individual |
| ☐Formative☐Final Product | Reflection- Revisit attachment 1 and conduct a whole class discussion. | Students will reflect on their work and discuss how they feel about a career in advanced manufacturing.  |
| ☐Team☐Individual |
| ☐Formative☐Final Product |  | Click here to enter text. |
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| **P R O J E C T C A L E N D A R** |
| M O N D A Y | T U E S D A Y | W E D N E S D A Y | T H U R S D A Y | F R I D A Y |
| **P R O J E C T W E E K O N E** |
| Student will answer a series of questions on what they know about advanced manufacturing (see attachment 1).Using Padlet students will answer the question: What is advanced manufacturing? What careers are there in advanced manufacturing? Students will play Careers in Advanced Manufacturing BINGO (attachment 2).  | Students will rank their personality type (see attachment 3). They will complete the first page without the careers filled in. Once they have completed it, discuss what advanced manufacturing careers would fit under each personality type. Have students write them down on their sheet for later use.  | Students will pick a career from the personality type they ranked the highest. They will research that career and create a job posting for it.  | Read the following article on the career outlook for manufacturing jobs: https://www.bls.gov/careeroutlook/2014/article/manufacturing.htm Continue research | After they are done researching the students will create their job posting/poster.  |
| **P R O J E C T W E E K T W O** |
| Students finishing working on their job posting/ poster (see attachment 4). Job posting can be displayed in the classroom or in the hallway.  | Depending on which personality type they ranked the highest they will form groups to create an innovative design concept to improve a product or process (see attachment 5 for examples). | Students will brainstorm ideas for a product or process they would like to improve or create. They will also come up with an employer or career specialist they would like to interview and interview question to help them develop a cutting-edge futuristic concept or process (See attachment 6). | Groups will interview an employer/career specialist either in person, through emails, or webcam.  | Students will begin working on their design concept. |

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| **P R O J E C T W E E K T H R E E** |
| Work day  | Work Day Gallery Walk  | Work Day- revisions  | Presentations (see attachment 7 for peer evaluation rubric)  | Presentations (see attachment 7 for peer evaluation rubric)  |
| **P R O J E C T W E E K F O U R** |
| Presentations (see attachment 7 for peer evaluation rubric) | Reflection- Revisit attachment 1 and conduct a whole class discussion.  | Click here to enter text. | Click here to enter text. | Click here to enter text. |

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| **P R O J E C T C A L E N D A R** |
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