**ABOUT**

The Coweta Innovation Expo is a competition designed to highlight student innovation with a focus on 21st century skills and entrepreneurship.  Selected projects will have the opportunity to pitch their idea to a group of Coweta's innovation experts on a locally produced Coweta version of "Shark Tank".

**COMPETITION CATEGORIES**

This virtual competition will allow students in groups to compete in one of 5 areas of interest:

1. **Science & Math** *(May be adapted to enter Science Fair)*
   1. Earth and Energy Essentials – Integrate natural resources within the project.
   2. Biology – Integrate nature-inspired design within the project.
   3. Chemistry – Integrate green chemistry within the project.
   4. Physics – Integrate balance of natural forces within the project.
2. **Technology & Business**
3. Community Activism – Create a community campaign.
4. \*\*Mobile App Design – Create a mobile application.
5. E-Commerce Entrepreneurship – Create a business.
6. **Digital Media**
   1. Digital Media and Movie Making – Create a documentary.
   2. Game Design and Development – Create a video game.
   3. 3D Modeling and Animation – Create a 3D model and animation/simulation.
7. **Health**
   1. \*\*Foundations in Health Science and Technology – Design or improve upon a product or service that will benefit the 21st Century healthcare consumer.
   2. Public Health – Design or improve upon a product or service that will benefit the 21st Century global healthcare consumer.
   3. \*\*Medical Science and Technology – Design or improve upon a product or service that will benefit 21st Century medical science in research, diagnosis, or prevention.
8. **\*\*Engineering.**
   1. Invention - Create a new device to solve a real problem
   2. Digital Engineering - Create a digital model of a machine for use in industry or manufacturing
   3. Robotics - Create a new robotic solution or drone design or application

**THE CHALLENGE**

Create and implement a new product, service, or community action. Teams of 2-3\* will:

* Identify a problem that will be addressed by the project idea.
* Investigate the topic via research, development, experiment or testing, and data analysis.
* Develop an innovative solution (product, service, or community action) that addresses the problem.
* Demonstrate application of the solution with experimentation and/or prototype.
* Thoroughly document the project, and promote it using Google Slides.
* Showcase the project via online presentation for the Coweta Innovation Expo.

*\* If student wishes to pursue Science Fair, 1-2 team-member(s) allowed in the Science category only, as per Science Fair requirements.*

*\*\*Only projects in these categories will be eligible to advance to the Georgia Tech K-12 Inventure Challenge Competition*

**FOR MORE INFORMATION: Go to:** <http://cowetainnovationexpo.weebly.com> OR Scan the QR Code.

**1. SCIENCE & MATH RUBRIC - Project Requirements and order**

**Project Idea**

|  |  |
| --- | --- |
| Identifies an innovative approach to a real problem or purpose. Demonstrates creative thinking and shows promise for future development. Includes catchy & creative title along with group member names. | **ND 1 2 3 4 5** |
| **Total** | **/ 5** |

**Research & Development**

|  |  |
| --- | --- |
| **Research –** Experiment is based on extensive background research of *at least three* scientifically credible resources. | **ND 1 2 3 4 5** |
| **Hypothesis –** This is clear, testable and logical. | **ND 1 2 3 4 5** |
| **Expert Input –** Summarizes how one scientifically credible advisor provided input that was clearly incorporated into project | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Experiment**

|  |  |
| --- | --- |
| **Procedure –** Methodology is scientifically valid with materials listed. | **ND 1 2 3 4 5** |
| **Variables –** Identifies variables (independent, dependent and controlled) | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Results & Data Analysis**

|  |  |
| --- | --- |
| **Data Organization –** Quantitative and qualitative data is organized into tables and graphs. | **ND 1 2 3 4 5** |
| **Data Analysis** – Based on logical mathematical methods that directly support the idea, product, service or solution. | **ND 1 2 3 4 5** |
| **Results –** Accurately interprets data and graph as well as summarizing trends within the data. Discuss errors and any data variance between trials. | **ND 1 2 3 4 5** |
| **Conclusion –** Restate the purpose, summarize trends and indicate if the hypothesis is supported or if it leads to a logical redesign of the experiment. Explain results. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Documentation**

|  |  |
| --- | --- |
| **Format –** Bold-faced headings are at the top of each google slide. MLA formatting used. | **ND 1 2 3 4 5** |
| **Bibliography** – All content including images are properly cited. | **ND 1 2 3 4 5** |
| **Quality** – Project gives detailed descriptions of the idea. Writing quality and language are well executed. Grammar and spelling are correct. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Presentation Format**

|  |  |
| --- | --- |
| **Google Slides Presentation** – Includes all project components | **ND 1 2 3 4 5** |
| **Google Slides Organization & Design** – Well organized, user friendly, creative and aesthetically pleasing | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Video “Pitch” Presentation**

|  |  |
| --- | --- |
| **Communication -** includes thorough explanation & clear justification for project idea. | **ND 1 2 3 4 5** |
| **Mass Appeal –** Content is presented so all audience members can understand. | **ND 1 2 3 4 5** |
| **Engagement –** Presentation is engaging, rehearsed & makes creative use of digital media | **ND 1 2 3 4 5** |
| **Length** – Video is three minutes or less in length. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Marketing & Image**

|  |  |
| --- | --- |
| Creative & relevant artwork enhances communication of project concept. Promotion & marketing is creative and encourages interest in future research. | **ND 1 2 3 4 5** |

**TOTAL SCORE \_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**2. TECHNOLOGY & BUSINESS RUBRIC - Project Requirements and order**

**Project Idea**

|  |  |
| --- | --- |
| **A.** Involves a problem affecting the community. OR **B.** Develops a unique & mobile app; OR **C.** Concept is a feasible business with the ability to become an online store. Demonstrates creative thinking and promise for future development. Includes creative title & group names. | **ND 1 2 3 4 5** |
| **Total** | **/ 5** |

**Research & Development**

|  |  |
| --- | --- |
| **Research –** Idea is based on background research of *at least 3* credible resources. | **ND 1 2 3 4 5** |
| **Theory of Solution –** Targets market research and documents evidence including but not limited to: Surveys (**A & B**); Infographic of problem & solution; & Focus groups (**C**). Theory is testable & directly supports the project. | **ND 1 2 3 4 5** |
| **Expert Input –** Summarizes how advisor gave input that was incorporated into the project | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Experiment**

|  |  |
| --- | --- |
| **Validity –** Testing method is scientifically valid. | **ND 1 2 3 4 5** |
| **Relevance –** Effectively evaluates key components of the idea. | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Results & Data Analysis**

|  |  |
| --- | --- |
| **Data Organization – A.** Quantitative and qualitative evidence of community support for campaign & effective progress; **B.** Qualitative evidence of computer design; **C**.Analysis including start-up costs, break-even and future projections based on data analysis. All data is easy to understand & organized into tables and/or diagrams. | **ND 1 2 3 4 5** |
| **Data Analysis** – Based on logical mathematical methods that directly support the idea. | **ND 1 2 3 4 5** |
| **Results/Conclusion –** Accurately interprets data and either supports the idea or leads to a logical redesign of the concept. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Documentation**

|  |  |
| --- | --- |
| **Format –** Bold-faced headings on each Google slide. MLA formatting used. A unified design scheme is used. Includes: **A.** Press release, op-ed &/or advocacy letter;  **B.** White paper & technical specs; **C.** Business plan & prototype. | **ND 1 2 3 4 5** |
| **Manufacturing B** – description of the manufacturing steps needed to produce the project and how product components could be obtained. **A & C** - Detailed description ofthe steps recommended in solving the community issue or starting the online store/business. | **ND 1 2 3 4 5** |
| **Bibliography** – All content including images are properly cited. | **ND 1 2 3 4 5** |
| **Quality** – Detailed descriptions, writing quality, grammar & spelling are well executed. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Presentation Format**

|  |  |
| --- | --- |
| **Google Slides** – Includes all project components. **A.** Campaign; **B.** Link to download & install app; **C.** Online store placeholder. | **ND 1 2 3 4 5** |
| **Google Slides Organization & Design**–Well-organized, creative and aesthetically pleasing | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Video “Pitch” Presentation**

|  |  |
| --- | --- |
| **Communication -** includes thorough explanation & clear justification for project idea. | **ND 1 2 3 4 5** |
| **Mass Appeal –** Content is presented to encourage further investment. | **ND 1 2 3 4 5** |
| **Engagement –** Presentation is engaging, rehearsed & makes creative use of digital media | **ND 1 2 3 4 5** |
| **Length** – Video is three minutes or less in length. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Marketing & Image**

|  |  |
| --- | --- |
| Creative & relevant artwork enhances communication of project concept. Promotion & marketing is creative, effective and sustainable. Includes logo & visual presence  **A**. Includes podcast featuring campaign updates & information. | **ND 1 2 3 4 5** |

**TOTAL SCORE \_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**3. DIGITAL MEDIA - Project Requirements and order**

**Project Idea**

|  |  |
| --- | --- |
| **A.** Involves movie-making with storyboard, script, shoot & editing of a 5 minute documentary short. OR **B.** Designs & develops a working video game; OR **C.** Designs & renders a 3D model or simulation. Demonstrates creative thinking and shows promise for future development. Includes catchy & creative title along with group names. | **ND 1 2 3 4 5** |
| **Total** | **/ 5** |

**Research & Development**

|  |  |
| --- | --- |
| **Research –** Idea is based on background research of *at least 3* credible resources. | **ND 1 2 3 4 5** |
| **Theory of Solution –** Storyboarding, scripts, artwork, photography, etc are developed for the digital media. All aspects support the underlying project concept. | **ND 1 2 3 4 5** |
| **Expert Input –** Footage includes one professional in the field. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Experiment**

|  |  |
| --- | --- |
| **Validity –** Proof of valid development backed by research throughout project. | **ND 1 2 3 4 5** |
| **Relevance –** Storyboarding, script, etc effectively evaluates key components of the idea. | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Results & Data Analysis**

|  |  |
| --- | --- |
| **Data Organization – A. & C:** Presents results of data analysis relevant to the project development; **B.** Qualitative evidence of computer design; **B**. Results need to be present in concept statement All data is easy to understand & organized. | **ND 1 2 3 4 5** |
| **Data Analysis** – Based on logical mathematical methods that directly support the idea. | **ND 1 2 3 4 5** |
| **Results/Conclusion –** Accurately interprets data and either supports the idea or leads to a logical redesign of the concept. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Documentation**

|  |  |
| --- | --- |
| **Format –** Bold-faced headings on each Google slide. MLA formatting used. A unified design scheme is used. Includes: **A.** Storyboard, scripts & behind the scenes photos; **B.** Concept statement, game overview, game play mechanics, controls, menu,& screen; **C.** Storyboard, preliminary illustrations & multiple stages of design. | **ND 1 2 3 4 5** |
| **Bibliography** – All content including images are properly cited. | **ND 1 2 3 4 5** |
| **Quality** – Detailed descriptions, writing quality, grammar & spelling are well executed. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Presentation Format**

|  |  |
| --- | --- |
| **Google Slides** – Includes all project components**. A.** Full length documentary & trailer are available for viewing; **B.** Game is available to play online in some capacity; **C.** Simulation/Model is available for viewing. | **ND 1 2 3 4 5** |
| **Google Slides Organization & Design**–Well-organized, creative and aesthetically pleasing | **ND 1 2 3 4 5** |
| **Project Quality** – Documentary, Game or Simulation/model is effective & compelling. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Video “Pitch” Presentation**

|  |  |
| --- | --- |
| **Communication -** includes thorough explanation & clear justification for project idea. | **ND 1 2 3 4 5** |
| **Mass Appeal –** Content is explained to illustrate ideals of the project. | **ND 1 2 3 4 5** |
| **Engagement –** Presentation is engaging, rehearsed & makes creative use of digital media | **ND 1 2 3 4 5** |
| **Length** – Video is three minutes or less in length. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Marketing & Image**

|  |  |
| --- | --- |
| Creative & relevant artwork enhances communication of project concept. Promotion & marketing is creative, effective and sustainable. Includes logo & visual presence. Documentary, game & simulation available for viewing or playing online; | **ND 1 2 3 4 5** |

**TOTAL SCORE \_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**4. HEALTH - Project Requirements and order**

**Project Idea**

|  |  |
| --- | --- |
| **A.** Product or service will benefit healthcare consumer the community. OR **B.** Public Health – addresses a challenge faced by public; OR **C.** Medical Science – solution is feasible & benefits future research, diagnosis or prevention. Demonstrates creative thinking and shows promise for future development. Includes catchy & creative title along with group member names. | **ND 1 2 3 4 5** |
| **Total** | **/ 5** |

**Research & Development**

|  |  |
| --- | --- |
| **Research –** Idea is based on background research of *at least 3* credible resources. | **ND 1 2 3 4 5** |
| **Theory of Solution –** Projects must contain documented research such as surveys & consultations with experts. (No experiments.) Theory directly supports the project. | **ND 1 2 3 4 5** |
| **Expert Input –** Summarizes how field expert gave input that was incorporated into the project | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Evidence**

|  |  |
| --- | --- |
| **Validity –** Project idea is backed with valid research that stands up to scrutiny. | **ND 1 2 3 4 5** |
| **Relevance –** Research supports & effectively evaluates key components of the idea. | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Results & Data Analysis**

|  |  |
| --- | --- |
| **Data Organization –** Quantitative and/or qualitative data is evident is the project. All data is easy to understand & organized into tables and/or diagrams or graphs. | **ND 1 2 3 4 5** |
| **Data Analysis** – Based on logical mathematical methods that directly support the idea. | **ND 1 2 3 4 5** |
| **Results/Conclusion –** Accurately interprets data and either supports the idea or leads to a logical redesign of the concept. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Documentation**

|  |  |
| --- | --- |
| **Format –** Bold-faced headings on each Google slide. MLA formatting used. A unified design scheme is used. | **ND 1 2 3 4 5** |
| **Manufacturing** **A & C** – A clear description of the manufacturing steps needed to produce the project is included. It should explain how product components could be obtained to support the product’s manufacture.  **B –** Detailed description ofthe steps recommended to address the public health challenge. | **ND 1 2 3 4 5** |
| **Bibliography** – All content including images are properly cited. | **ND 1 2 3 4 5** |
| **Quality** – Documentation is found on the website & professional expectations are met.. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Online Presence**

|  |  |
| --- | --- |
| **Google Slides** – Includes all project components. Professional expectations are met. | **ND 1 2 3 4 5** |
| **Google Slides Organization & Design**-Well-organized, creative and aesthetically pleasing | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Video “Pitch” Presentation**

|  |  |
| --- | --- |
| **Communication -** Includes thorough explanation & clear justification for project idea. | **ND 1 2 3 4 5** |
| **Mass Appeal –** Professional expectations are met. | **ND 1 2 3 4 5** |
| **Engagement –** Presentation is engaging, rehearsed & makes creative use of digital media | **ND 1 2 3 4 5** |
| **Length** – Video is three minutes or less in length. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Marketing & Image**

|  |  |
| --- | --- |
| Creative & relevant artwork enhances communication of project concept. Promotion & marketing is creative, effective and sustainable. Includes logo & visual presence Professional expectations are met. | **ND 1 2 3 4 5** |

**TOTAL SCORE \_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**5. ENGINEERING RUBRIC - Project Requirements and order**

**Project Idea**

|  |  |
| --- | --- |
| **A.** Invention – create a new product to solve a real problem. OR **B.** Digital Engineering – create a digital model of a machine for use in industry; OR **C.** Robotics – create anew robotic/drone solution or application. Demonstrates creative thinking and shows promise for future development. Includes catchy & creative title along with group member names. | **ND 1 2 3 4 5** |
| **Total** | **/ 5** |

**Research & Development**

|  |  |
| --- | --- |
| **Research –** Idea is based on background research of *at least 3* credible resources. | **ND 1 2 3 4 5** |
| **Theory of Solution –** Includes documentation of project development including drawings and mock-ups. Theory is testable & directly supports the project. | **ND 1 2 3 4 5** |
| **Expert Input –** Summarizes how expert gave input that was incorporated into the project | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Experiment**

|  |  |
| --- | --- |
| **Validity –** Documentation & drawings are scientifically valid. | **ND 1 2 3 4 5** |
| **Relevance –** Documentation effectively supports key components of the idea. | **ND 1 2 3 4 5** |
| **Total** | **/ 10** |

**Results & Data Analysis**

|  |  |
| --- | --- |
| **Data Organization –** Use of quantitative and/or qualitative data is evident is the project. All data is easy to understand & organized into tables and/or diagrams or graphs. | **ND 1 2 3 4 5** |
| **Data Analysis** – Based on logical mathematical methods that directly support the idea. | **ND 1 2 3 4 5** |
| **Results/Conclusion –** Accurately interprets data and either supports the idea or leads to a logical redesign of the concept. | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Documentation**

|  |  |
| --- | --- |
| **Format –** Bold-faced headings on each Google slide. MLA formatting used. A unified design scheme is used. Includes a clear description of the problem & solution. A white paper, content & technical specs are also included. | **ND 1 2 3 4 5** |
| **Manufacturing** – A clear description of the manufacturing steps needed to produce the project is included. It should explain how product components could be obtained to support the product’s manufacture. | **ND 1 2 3 4 5** |
| **Bibliography** – All content, including images, are properly cited. | **ND 1 2 3 4 5** |
| **Quality** – Detailed descriptions & drawings, writing quality, grammar & spelling are well executed. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Online Presence**

|  |  |
| --- | --- |
| **Google Slides** – Includes all project components. A video demonstrating the solution in action is available on the website. Professional expectations are met. | **ND 1 2 3 4 5** |
| **Google Slides Organization & Design**-Well-organized, creative and aesthetically pleasing | **ND 1 2 3 4 5** |
| **Total** | **/ 15** |

**Video “Pitch” Presentation**

|  |  |
| --- | --- |
| **Communication -** includes thorough explanation of purpose, solution and role in industry. Information is concise. | **ND 1 2 3 4 5** |
| **Mass Appeal –** Information is presented to encourage further investment. | **ND 1 2 3 4 5** |
| **Engagement –** Presentation is engaging, rehearsed & makes creative use of digital media | **ND 1 2 3 4 5** |
| **Length** – Video is three minutes or less in length. | **ND 1 2 3 4 5** |
| **Total** | **/ 20** |

**Marketing & Image**

|  |  |
| --- | --- |
| Creative artwork enhances communication of concept. Promotion & marketing is creative, effective and sustainable. Promotional material clearly connects to need being addressed. | **ND 1 2 3 4 5** |

**TOTAL SCORE \_\_\_\_\_\_\_\_\_\_\_\_\_ %**

**Rubric for Project Idea**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Criteria Scoring levels** | | | | |
| **Engineering Design Project Criteria** | No Evidence | Attempt | Partial | Good | Excellent |
| **0** | **1** | **2** | **3** | **4** |
| **1. Practicality** |  | | | | |
| Clearly identifies the critical features of the product/idea/service. |  |  |  |  |  |
| Clearly defines the problem or need. |  |  |  |  |  |
| Project addresses a problem or need. |  |  |  |  |  |
| **2. Creativity** |  | | | | |
| The proposed product/idea/service is unique. |  |  |  |  |  |
| Student optimizes available resources to create the product |  |  |  |  |  |
| **3. Marketability** |  | | | | |
| There is a need for this product/idea/service. |  |  |  |  |  |
| The student is considering consumer needs. |  |  |  |  |  |
| **4. Enthusiasm & Communication** |  | | | | |
| The project idea is clearly communicated |  |  |  |  |  |
| The student is clearly enthusiastic about the project and problem. |  |  |  |  |  |

**1a. Project Idea:**

**1b. What is the problem or need it addresses?**

**1c. How does your idea address this problem or need?**

**2a. Are there any similar products or ideas similar to yours that are currently available? If yes, what makes your idea unique? (***Remember innovation or originality is the cornerstone of this project)*

**2b. What is your plan of action to develop your idea or product? Include the resources that are available to you?**

**3. Discuss the research that demonstrates that there is a need for your product.**

**STEM PROJECT TIMELINE: *Please check rubric & website for details of requirements***

|  |  |  |
| --- | --- | --- |
| **Rubric Section** | **Assignments** | **Due** |
| **Project Idea** | - Fill in Project Idea worksheet. Select an area of interest. Research topics of interest. | **8/16** |
| **Project idea** | - Decide on one of the design areas & subcategory.  - Identify a problem/solution, idea, or service. | **8/30** |
| **Research & Development** | - Extensively research & investigate your idea.  - Find at least 3 reliable sources to guide project. |  |
| **Research & Development** | - Summarize how each resource helps your project. Cite in MLA format. | **9/6** |
| **Experiment or Testing method** | - Develop a hypothesis or theory of solution that is testable & supports project or documents evidence.  - Develop experiment or valid & relevant testing (may include materials, controls & variables). |  |
| **Experiment or Testing method** | - Implement experimentation or testing.  - Evaluate key components of the idea. |  |
| **Expert Input** | - Summary of input and contributions from field expert and how it was incorporated in project. | **9/27** |
| **Experiment or Testing** | - Implement experimentation or testing  - Evaluate key components of the idea | **10/11** |
| **Results & Data Analysis** | - See rubric for organization of data/evidence.  - Results, data &/or evidence are easy to interpret  - See rubric for your category |  |
| **Results & Data Analysis** | - See rubric for organization of data/evidence.  - Data analysis is based on logical mathematical methods and supports product, service or solution | **10/25** |
| **Conclusion** | - Results/data are accurately interpreted.  - Supports the idea/hypothesis or leads to redesign. | **11/1** |
| **Bibliography** | - All sources (including images) are accurately cited in MLA format. | **11/8** |
| **Presentation Format & Documentation** | -All project requirements are on Google Slides  -Slides are well-organized, & aesthetically pleasing. See rubric for your category. | **11/15** |
| **Video Pitch** | -Thorough explanation & justification for project  -Connects idea with the theme, challenge & solution |  |
| **Video Pitch** | - Pitch is engaging, easily understood, rehearsed, creative and uses digital media. 3 mins. ***See separate rubric***. | **12/6** |
| **Marketing & Image** | -Google Slides presentation and video (embedded in slides) include artwork, original photographs and/or graphics.  -Logo included if appropriate.  -Promotion is innovative & has mass appeal.  -Marketing attracts the intended audience. |  |
| **Overall Project** | Peer-editing of projects. Are they following all requirements? Suggestions for improvement. |  |
| **Overall Project** | **Project Due** | **Tues 12/11** |