

## Judges' 2018 Engineering Notebook Score Sheet

Purpose: To document the process used to design, build, and test the robot. (30 pts.)

| Research Paper (4 pts.)   |  |      |   | Possible Points | Points Awarded |
|---|--|------|---|-----------------|----------------|
| <b>Correlation between the game and how the science/technology is being used at a company/industry/research lab in the team's state or region</b>         |  |      |   |                 |                |
| 8-10  | In-depth discussion of how this year's game theme relates to industry in this region.  |      |   |                 |                |
| 4-7   | General discussion of how this year's game theme relates to industry in this region.   |      |   |                 |                |
| 1-3   | General discussion of this year's game theme, but no ties to the region  | 0    | No discussion of game theme.                  |                 |                |
| Comments:   |  |      |   | 10              | 10             |
| <b>Any related information of the game theme such as history, famous inventor(s), major milestones, etc.</b>  |  |      |   |                 |                |
| 4-5   | In-depth discussion of history and people related to this year's game theme.   |      |   |                 |                |
| 2-3   | General discussion of history and people related to this year's game theme.  |      |   |                 |                |
| 1   | Some mention of history or people.   | 0    | No discussion of related info                 |                 |                |
| Comments:   |  |      |   | 5               | 5              |
| <b>Analysis of the game theme/problem &amp; related technology's impact on the human experience, our needs, adaptations, and progress with solutions.</b> |  |      |   |                 |                |
| 4-5   | In-depth historical account of the effects to human experience, needs, adaptation and progress toward solutions.                       |      |   |                 |                |
| 2-3   | Some discussion about the effects of the theme/problem/technology on human experiences, needs, adaptations or progress.                |      |   |                 |                |
| 1   | Mentioned the effects to human experience, needs, adaptation or progress.  | 0    | No mention of history/effects to humanity.    |                 |                |
| Comments:   |  |      |   | 5               | 5              |
| <b>Creativity in linking the game to appropriately related science content</b>  |  |      |   |                 |                |
| 8-10  | Very creative in linking this year's game theme to other science/technology.   |      |   |                 |                |
| 4-7   | Attempted to link this year's game theme to other science/technology.  |      |   |                 |                |
| 1-3   | Mentioned other science/technology.  | 0    | No discussion of other science/technology.    |                 |                |
| Comments:   |  |      |   | 10              | 10             |
| <b>Proper formal writing - Proper use of grammar &amp; composition throughout ; source citations used to gather information; within 2-5 page limit</b>    |  |      |   |                 |                |
| 8-10  | Very few grammar mistakes/misspellings, included citations, 2-5 pages.   |      |   |                 |                |
| 4-7   | Noticeable grammar mistakes/misspellings or did not include citations, 2-5 pages.  |      |   |                 |                |
| 1-3   | Many grammar mistakes/misspellings, no citations, or not within 2-5 pages.   | 0    | Incomprehensible or missing.                  |                 |                |
| Comments:   |  |      |   | 10              | 10             |
| <b>Design Process (17 pts.)</b>   |  |      |   |                 |                |
| <b>Implementation of the Engineering Design Process (Evidence that the engineering design process was effectively used)</b>                               |  |      |   |                 |                |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough.   |      |   |                 |                |
| 16-20   | Process is identified; steps are discernible and there is some explanation.  |      |   |                 |                |
| 11-15   | Process is not identified; there is some discussion of a design process.   | 6-10 | Discussion of process is minimal.             |                 |                |
| 1-5   | You can tell there was a design process of some sort.  | 0    | No discernible design process.                |                 |                |
| Comments: Did an outstanding job identifying the design process   |  |      |   | 25              | 25             |
| <b>Brainstorming Approaches - How well organized and productive was the brainstorming approach? How well was it documented?</b>                           |  |      |   |                 |                |
| 21-25   | Approach is explicitly identified, organization & productivity are obvious, explanation is thorough, discussion of how decisions made. |      |   |                 |                |
| 16-20   | Approach is identified, organization and productivity are discernible, there is some explanation.                                      |      |   |                 |                |
| 11-15   | Approach is not identified, there is some discussion of brainstorming.   | 6-10 | Discussion of approach is minimal.            |                 |                |
| 1-5   | You can tell there were ideas generated.   | 0    | No discernible brainstorming.                 |                 |                |
| Comments:   |  |      |   | 25              | 25             |
| <b>Analytical evaluation of design alternatives - Use of analytical and mathematical skills in deciding upon and implementing design alternatives</b>     |  |      |   |                 |                |
| 21-25   | Evaluation is explicitly identified, analytic/mathematical approach is obvious, alternative designs are explained.                     |      |   |                 |                |
| 16-20   | Evaluation is identified, analytic/mathematical approach is discernible, alternative designs are identified.                           |      |   |                 |                |
| 11-15   | Evaluation is not identifiable, alternative designs are identified.  | 6-10 | Discussion of alternative designs is minimal. |                 |                |
| 1-5   | You can tell there were alternatives.  | 0    | No discernible evaluation.                    |                 |                |
| Comments:   |  |      |   | 25              | 25             |

### Judges' 2018 Engineering Notebook Score Sheet

| Offensive and defensive evaluation - Analysis of gaming strategies and design elements used to achieve team goals  |  |                    |  |      |
|--|--|--------------------|--|------|
| 21-25  | Evaluation of offensive/defensive strategies is explicitly identified, goals of this team are clearly identified, discussion shows a deep knowledge of the game.       |                    |  |      |
| 16-20  | Evaluation is identified, goals are discernible, discussion shows a knowledge of the game.   |                    |  |      |
| 11-15  | Evaluation is not identified, there is some notion of goals and game knowledge.  |                    |  |      |
| 6-10   | Discussion of goals and game knowledge are minimal.  |                    |  |      |
| 1-5  | There is some slight mention of strategy.  | 0                  | No discernible evaluation.                           |      |
| Comments:  |  |                    | 25   | 25   |
| Software Development Process ( Evidence that a software development process was effectively used )   |  |                    |  |      |
| 21-25  | Process is explicitly identified; steps are obvious and explanation is thorough. Design methods utilized are identified and explained.                                 |                    |  |      |
| 16-20  | Process is identified; steps are discernible and there is some explanation. Some design methods are discussed.   |                    |  |      |
| 11-15  | There is some discussion of a development process or design methods.   | 6-10               | Process is mentioned but minimal detail.             |      |
| 1-5  | You can tell there were some software design methods used.   | 0                  | No discernible software development process.         |      |
| Comments: did not include  |  |                    | 25   | 0    |
| Safety - Evidence that safety training occurred and safe practices were followed to prevent students' misuse of tools and other devices/equipment that may result in personal injury or damage to property   |  |                    |  |      |
| 17-20  | Clear evidence that safety training occurred, clear evidence that the team verified safety procedures were followed.   |                    |  |      |
| 13-16  | Clear evidence of safety training, some evidence procedures were verified.   |                    |  |      |
| 9-12   | Some evidence of safety training, some procedures were verified.   | 5-8                | Some evidence safety training, no verifying procedur |      |
| 1-4  | Safety was mentioned; unsafe methods might be visible in photos.   | 0                  | No mention of safety.                                |      |
| Comments: clear evidence that the team had safety training   |  |                    | 20   | 20   |
| Support Documentation - Team organization, meeting minutes, CAD/other drawings, photos, test results, etc. that support the main document (max 20 double -sided pages) ; +5pts bonus for National Registry proof,  |  |                    |  |      |
| 16-20  | Clearly identifies ALL categories mentioned above; references made from primary document.  |                    |  |      |
| 11-15  | Identifies items from the list above; but missing one or two categories.   |                    |  |      |
| 1-5  | Includes items from at least 2 categories; but not identified.   | 6-10               | Items from at least 3 categories above are included. |      |
| +5   | Provided National Registry proof (e.g., order#s) per team member   | 0                  | No items from listed categories are included.        |      |
| Comments: Did Not include national registry proof  |  |                    | 25   | 20   |
| Overall Quality and completeness of Notebook (9 pts.)  |  |                    |  |      |
| Organization and appearance - Table of contents, summary, page numbers, discussion of evaluation points, linkage to appendices   |  |                    |  |      |
| 21-30  | Well organized, looks good, includes Table of Contents, summary, page numbers, discussion of evaluation points (e.g. Items on the score sheet), linkage to appendices. |                    |  |      |
| 11-20  | Reasonably organized, looks good, missing one or two items from list above.  |                    |  |      |
| 1-10   | Poorly organized, no attention to looks, missing multiple items from list above.   | 0                  | Disorganized, missing most items.                    |      |
| Comments: Missing discussion of evaluation pts & appendix  |  |                    | 30   | 21   |
| Adherence to specifications  |  |                    |  |      |
| Cover sheet and/or title page that identifies the school team name, teacher contact information, and team number<br>1" margins, Business font no smaller than 12 pt., double-spaced (single spaced ok in tables and outlines) ;<br>per Hub option, Softcopy Format = PDF or Hardcopy in Standard Binder, 35 one-sided page max for main section, 20 double-sided page max for appendices |  |                    |  |      |
| 21-30  | Adheres to the specifications listed above.  |                    |  |      |
| 11-20  | Violates one of the specifications listed above.   |                    |  |      |
| 1-10   | Violates two or three of the specifications listed above.  | 0                  | Violates for or more specs.                          |      |
| Comments: Adhered to all specifications  |  |                    | 30   | 30   |
| Quality of content - Well written, clear photo labels, lack of extraneous material such as community or promotional efforts, spirit development, team building   |  |                    |  |      |
| 21-30  | Everything is well written/clear/logical, everything is clearly labeled, no excess material.   |                    |  |      |
| 11-20  | You can follow everything with some effort, one or two things that are unnecessary.  |                    |  |      |
| 1-10   | Hard to understand in places, labels missing in places, unnecessary material.  | 0                  | Very difficult to follow, unnecessary material.      |      |
| Comments: Well written but no photo labels.  |  |                    | 30   | 29   |
| SCORE CALCULATION and Additional Comments:   |  |                    |  |      |
|  |  | <b>Total</b>       | 300  | 260  |
|  |  |                    | +10  | +10  |
|  |  | <b>Final Score</b> | 30 max   | 26.0 |

Judge name/number (print): Jordan Powell

Team Number: # 0807

School: Guyver High school

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**Purpose:** To document the process used to design, build, and test the robot. (30 pts.)

| Research Paper (4 pts.)   |  |      |   | Possible Points | Points Awarded |
|---|--|------|---|-----------------|----------------|
| <b>Correlation between the game and how the science/technology is being used at a company/industry/research lab in the team's state or region</b>         |  |      |   |                 |                |
| 8-10  | In-depth discussion of how this year's game theme relates to industry in this region.  |      |   |                 |                |
| 4-7   | General discussion of how this year's game theme relates to industry in this region.   |      |   |                 |                |
| 1-3   | General discussion of this year's game theme, but no ties to the region  | 0    | No discussion of game theme.                  |                 |                |
| Comments:   |  |      |   | 10              | 7              |
| <b>Any related information of the game theme such as history, famous inventor(s), major milestones, etc.</b>  |  |      |   |                 |                |
| 4-5   | In-depth discussion of history and people related to this year's game theme.   |      |   |                 |                |
| 2-3   | General discussion of history and people related to this year's game theme.  |      |   |                 |                |
| 1   | Some mention of history or people.   | 0    | No discussion of related info                 |                 |                |
| Comments:   |  |      |   | 5               | 3              |
| <b>Analysis of the game theme/problem &amp; related technology's impact on the human experience, our needs, adaptations, and progress with solutions.</b> |  |      |   |                 |                |
| 4-5   | In-depth historical account of the effects to human experience, needs, adaptation and progress toward solutions.                       |      |   |                 |                |
| 2-3   | Some discussion about the effects of the theme/problem/technology on human experiences, needs, adaptations or progress.                |      |   |                 |                |
| 1   | Mentioned the effects to human experience, needs, adaptation or progress.  | 0    | No mention of history/effects to humanity.    |                 |                |
| Comments:   |  |      |   | 5               | 3              |
| <b>Creativity in linking the game to appropriately related science content</b>  |  |      |   |                 |                |
| 8-10  | Very creative in linking this year's game theme to other science/technology.   |      |   |                 |                |
| 4-7   | Attempted to link this year's game theme to other science/technology.  |      |   |                 |                |
| 1-3   | Mentioned other science/technology.  | 0    | No discussion of other science/technology.    |                 |                |
| Comments:   |  |      |   | 10              | 7              |
| <b>Proper formal writing - Proper use of grammar &amp; composition throughout ; source citations used to gather information; within 2-5 page limit</b>    |  |      |   |                 |                |
| 8-10  | Very few grammar mistakes/misspellings, included citations, 2-5 pages.   |      |   |                 |                |
| 4-7   | Noticeable grammar mistakes/misspellings or did not include citations, 2-5 pages.  |      |   |                 |                |
| 1-3   | Many grammar mistakes/misspellings, no citations, or not within 2-5 pages.   | 0    | Incomprehensible or missing.                  |                 |                |
| Comments:   |  |      |   | 10              | 8              |
| <b>Design Process (17 pts.)</b>   |  |      |   |                 |                |
| <b>Implementation of the Engineering Design Process ( Evidence that the engineering design process was effectively used )</b>                             |  |      |   |                 |                |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough.   |      |   |                 |                |
| 16-20   | Process is identified; steps are discernible and there is some explanation.  |      |   |                 |                |
| 11-15   | Process is not identified; there is some discussion of a design process.   | 6-10 | Discussion of process is minimal.             |                 |                |
| 1-5   | You can tell there was a design process of some sort.  | 0    | No discernible design process.                |                 |                |
| Comments:   |  |      |   | 25              | 22             |
| <b>Brainstorming Approaches - How well organized and productive was the brainstorming approach? How well was it documented?</b>                           |  |      |   |                 |                |
| 21-25   | Approach is explicitly identified, organization & productivity are obvious, explanation is thorough, discussion of how decisions made. |      |   |                 |                |
| 16-20   | Approach is identified, organization and productivity are discernible, there is some explanation.                                      |      |   |                 |                |
| 11-15   | Approach is not identified, there is some discussion of brainstorming.   | 6-10 | Discussion of approach is minimal.            |                 |                |
| 1-5   | You can tell there were ideas generated.   | 0    | No discernible brainstorming.                 |                 |                |
| Comments:   |  |      |   | 25              | 22             |
| <b>Analytical evaluation of design alternatives - Use of analytical and mathematical skills in deciding upon and implementing design alternatives</b>     |  |      |   |                 |                |
| 21-25   | Evaluation is explicitly identified, analytic/mathematical approach is obvious, alternative designs are explained.                     |      |   |                 |                |
| 16-20   | Evaluation is identified, analytic/mathematical approach is discernible, alternative designs are identified.                           |      |   |                 |                |
| 11-15   | Evaluation is not identifiable, alternative designs are identified.  | 6-10 | Discussion of alternative designs is minimal. |                 |                |
| 1-5   | You can tell there were alternatives.  | 0    | No discernible evaluation.                    |                 |                |
| Comments:   |  |      |   | 25              | 20             |

### Judges' 2018 Engineering Notebook Score Sheet

| Offensive and defensive evaluation - Analysis of gaming strategies and design elements used to achieve team goals   |  |                    |  |     |
|---|--|--------------------|--|-----|
| 21-25   | Evaluation of offensive/defensive strategies is explicitly identified, goals of this team are clearly identified, discussion shows a deep knowledge of the game.       |                    |  |     |
| 16-20   | Evaluation is identified, goals are discernible, discussion shows a knowledge of the game.   |                    |  |     |
| 11-15   | Evaluation is not identified, there is some notion of goals and game knowledge.  |                    |  |     |
| 6-10  | Discussion of goals and game knowledge are minimal.  |                    |  |     |
| 1-5   | There is some slight mention of strategy.  | 0                  | No discernible evaluation.                           |     |
| Comments:   |  |                    | 25   | 22  |
| Software Development Process (Evidence that a software development process was effectively used)  |  |                    |  |     |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough. Design methods utilized are identified and explained.                                 |                    |  |     |
| 16-20   | Process is identified; steps are discernible and there is some explanation. Some design methods are discussed.   |                    |  |     |
| 11-15   | There is some discussion of a development process or design methods.   | 6-10               | Process is mentioned but minimal detail.             |     |
| 1-5   | You can tell there were some software design methods used.   | 0                  | No discernible software development process.         |     |
| Comments: <i>No software design/implementation apparently</i>   |  |                    | 25   | 15  |
| Safety - Evidence that safety training occurred and safe practices were followed to prevent students' misuse of tools and other devices/equipment that may result in personal injury or damage to property  |  |                    |  |     |
| 17-20   | Clear evidence that safety training occurred, clear evidence that the team verified safety procedures were followed.   |                    |  |     |
| 13-16   | Clear evidence of safety training, some evidence procedures were verified.   |                    |  |     |
| 9-12  | Some evidence of safety training, some procedures were verified.   | 5-8                | Some evidence safety training, no verifying procedur |     |
| 1-4   | Safety was mentioned; unsafe methods might be visible in photos.   | 0                  | No mention of safety.                                |     |
| Comments:   |  |                    | 20   | 18  |
| Support Documentation - Team organization, meeting minutes, CAD/other drawings, photos, test results, etc. that support the main document (max 20 double-sided pages); +5pts bonus for National Registry proof,   |  |                    |  |     |
| 16-20   | Clearly identifies ALL categories mentioned above; references made from primary document.  |                    |  |     |
| 11-15   | Identifies items from the list above; but missing one or two categories.   |                    |  |     |
| 1-5   | Includes items from at least 2 categories; but not identified.   | 6-10               | Items from at least 3 categories above are included. |     |
| +5  | Provided National Registry proof (e.g., order#s) per team member   | 0                  | No items from listed categories are included.        |     |
| Comments:   |  |                    | 25   | 16  |
| Overall Quality and completeness of Notebook (9 pts.)   |  |                    |  |     |
| Organization and appearance - Table of contents, summary, page numbers, discussion of evaluation points, linkage to appendices  |  |                    |  |     |
| 21-30   | Well organized, looks good, includes Table of Contents, summary, page numbers, discussion of evaluation points (e.g. Items on the score sheet), linkage to appendices. |                    |  |     |
| 11-20   | Reasonably organized, looks good, missing one or two items from list above.  |                    |  |     |
| 1-10  | Poorly organized, no attention to looks, missing multiple items from list above.   | 0                  | Disorganized, missing most items.                    |     |
| Comments:   |  |                    | 30   | 25  |
| Adherence to specifications   |  |                    |  |     |
| Cover sheet and/or title page that identifies the school team name, teacher contact information, and team number<br>1" margins, Business font no smaller than 12 pt., double-spaced (single spaced ok in tables and outlines);<br>per Hub option, Softcopy Format = PDF or Hardcopy in Standard Binder, 35 one-sided page max for main section, 20 double-sided page max for appendices |  |                    |  |     |
| 21-30   | Adheres to the specifications listed above.  |                    |  |     |
| 11-20   | Violates one of the specifications listed above.   |                    |  |     |
| 1-10  | Violates two or three of the specifications listed above.  | 0                  | Violates for or more specs.                          |     |
| Comments: <i>Good compliance with specs.</i>  |  |                    | 30   | 24  |
| Quality of content - Well written, clear photo labels, lack of extraneous material such as community or promotional efforts, spirit development, team building  |  |                    |  |     |
| 21-30   | Everything is well written/clear/logical, everything is clearly labeled, no excess material.   |                    |  |     |
| 11-20   | You can follow everything with some effort, one or two things that are unnecessary.  |                    |  |     |
| 1-10  | Hard to understand in places, labels missing in places, unnecessary material.  | 0                  | Very difficult to follow, unnecessary material.      |     |
| Comments:   |  |                    | 30   | 25  |
| SCORE CALCULATION and Additional Comments:  |  |                    |  |     |
|   |  | <b>Total</b>       | 300  | 240 |
|   |  |                    | ÷10  | ÷10 |
|   |  | <b>Final Score</b> | 30 max   | 24  |

Judge name/number (print): Hector Siller

Team Number: 0807

School: Cwyer High School.



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Purpose: To document the process used to design, build, and test the robot. (30 pts.)

| Research Paper (4 pts.)   |  |  |  | Possible Points | Points Awarded |
|---|--|--|--|-----------------|----------------|
| <b>Correlation between the game and how the science/technology is being used at a company/industry/research lab in the team's state or region</b>         |  |  |  |                 |                |
| 8-10  | In-depth discussion of how this year's game theme relates to industry in this region.  |  |  |                 |                |
| 4-7   | General discussion of how this year's game theme relates to industry in this region.   |  |  |                 |                |
| 1-3   | General discussion of this year's game theme, but no ties to the region  |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 10             |
|   |  |  |  |                 | 10             |
| <b>Any related information of the game theme such as history, famous inventor(s), major milestones, etc.</b>  |  |  |  |                 |                |
| 4-5   | In-depth discussion of history and people related to this year's game theme.   |  |  |                 |                |
| 2-3   | General discussion of history and people related to this year's game theme.  |  |  |                 |                |
| 1   | Some mention of history or people.   |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 5              |
|   |  |  |  |                 | 5              |
| <b>Analysis of the game theme/problem &amp; related technology's impact on the human experience, our needs, adaptations, and progress with solutions.</b> |  |  |  |                 |                |
| 4-5   | In-depth historical account of the effects to human experience, needs, adaptation and progress toward solutions.                       |  |  |                 |                |
| 2-3   | Some discussion about the effects of the theme/problem/technology on human experiences, needs, adaptations or progress.                |  |  |                 |                |
| 1   | Mentioned the effects to human experience, needs, adaptation or progress.  |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 5              |
|   |  |  |  |                 | 4              |
| <b>Creativity in linking the game to appropriately related science content</b>  |  |  |  |                 |                |
| 8-10  | Very creative in linking this year's game theme to other science/technology.   |  |  |                 |                |
| 4-7   | Attempted to link this year's game theme to other science/technology.  |  |  |                 |                |
| 1-3   | Mentioned other science/technology.  |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 10             |
|   |  |  |  |                 | 7              |
| <b>Proper formal writing - Proper use of grammar &amp; composition throughout ; source citations used to gather information; within 2-5 page limit</b>    |  |  |  |                 |                |
| 8-10  | Very few grammar mistakes/misspellings, included citations, 2-5 pages.   |  |  |                 |                |
| 4-7   | Noticeable grammar mistakes/misspellings or did not include citations, 2-5 pages.  |  |  |                 |                |
| 1-3   | Many grammar mistakes/misspellings, no citations, or not within 2-5 pages.   |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 10             |
|   |  |  |  |                 | 9              |
| <b>Design Process (17 pts.)</b>   |  |  |  |                 |                |
| <b>Implementation of the Engineering Design Process (Evidence that the engineering design process was effectively used)</b>                               |  |  |  |                 |                |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough.   |  |  |                 |                |
| 16-20   | Process is identified; steps are discernible and there is some explanation.  |  |  |                 |                |
| 11-15   | Process is not identified; there is some discussion of a design process.   |  |  |                 | 6-10           |
| 1-5   | You can tell there was a design process of some sort.  |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 25             |
|   |  |  |  |                 | 25             |
| <b>Brainstorming Approaches - How well organized and productive was the brainstorming approach? How well was it documented?</b>                           |  |  |  |                 |                |
| 21-25   | Approach is explicitly identified, organization & productivity are obvious, explanation is thorough, discussion of how decisions made. |  |  |                 |                |
| 16-20   | Approach is identified, organization and productivity are discernible, there is some explanation.                                      |  |  |                 |                |
| 11-15   | Approach is not identified, there is some discussion of brainstorming.   |  |  |                 | 6-10           |
| 1-5   | You can tell there were ideas generated.   |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 25             |
|   |  |  |  |                 | 25             |
| <b>Analytical evaluation of design alternatives - Use of analytical and mathematical skills in deciding upon and implementing design alternatives</b>     |  |  |  |                 |                |
| 21-25   | Evaluation is explicitly identified, analytic/mathematical approach is obvious, alternative designs are explained.                     |  |  |                 |                |
| 16-20   | Evaluation is identified, analytic/mathematical approach is discernible, alternative designs are identified.                           |  |  |                 |                |
| 11-15   | Evaluation is not identifiable, alternative designs are identified.  |  |  |                 | 6-10           |
| 1-5   | You can tell there were alternatives.  |  |  |                 | 0              |
| Comments:   |  |  |  |                 | 25             |
|   |  |  |  |                 | 25             |

## Judges' 2018 Engineering Notebook Score Sheet

| Offensive and defensive evaluation - Analysis of gaming strategies and design elements used to achieve team goals   |  |             |  |      |
|---|--|-------------|--|------|
| 21-25   | Evaluation of offensive/defensive strategies is explicitly identified, goals of this team are clearly identified, discussion shows a deep knowledge of the game.       |             |  |      |
| 16-20   | Evaluation is identified, goals are discernible, discussion shows a knowledge of the game.   |             |  |      |
| 11-15   | Evaluation is not identified, there is some notion of goals and game knowledge.  |             |  |      |
| 6-10  | Discussion of goals and game knowledge are minimal.  |             |  |      |
| 1-5   | There is some slight mention of strategy.  | 0           | No discernible evaluation.                           |      |
| Comments:   |  |             |  | 25   |
| Software Development Process (Evidence that a software development process was effectively used)  |  |             |  |      |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough. Design methods utilized are identified and explained.                                 |             |  |      |
| 16-20   | Process is identified; steps are discernible and there is some explanation. Some design methods are discussed.   |             |  |      |
| 11-15   | There is some discussion of a development process or design methods.   | 6-10        | Process is mentioned but minimal detail.             |      |
| 1-5   | You can tell there were some software design methods used.   | 0           | No discernible software development process.         |      |
| Comments:   |  |             |  | 25   |
| Safety - Evidence that safety training occurred and safe practices were followed to prevent students' misuse of tools and other devices/equipment that may result in personal injury or damage to property      |  |             |  |      |
| 17-20   | Clear evidence that safety training occurred, clear evidence that the team verified safety procedures were followed.   |             |  |      |
| 13-16   | Clear evidence of safety training, some evidence procedures were verified.   |             |  |      |
| 9-12  | Some evidence of safety training, some procedures were verified.   | 5-8         | Some evidence safety training, no verifying procedur |      |
| 1-4   | Safety was mentioned; unsafe methods might be visible in photos.   | 0           | No mention of safety.                                |      |
| Comments:   |  |             |  | 20   |
| Support Documentation - Team organization, meeting minutes, CAD/other drawings, photos, test results, etc. that support the main document (max 20 double-sided pages); +5pts bonus for National Registry proof, |  |             |  |      |
| 16-20   | Clearly identifies ALL categories mentioned above; references made from primary document.  |             |  |      |
| 11-15   | Identifies items from the list above; but missing one or two categories.   |             |  |      |
| 1-5   | Includes items from at least 2 categories; but not identified.   | 6-10        | Items from at least 3 categories above are included. |      |
| +5  | Provided National Registry proof (e.g., order#s) per team member   | 0           | No items from listed categories are included.        |      |
| Comments:   |  |             |  | 25   |
| Overall Quality and completeness of Notebook (9 pts.)   |  |             |  |      |
| Organization and appearance - Table of contents, summary, page numbers, discussion of evaluation points, linkage to appendices  |  |             |  |      |
| 21-30   | Well organized, looks good, includes Table of Contents, summary, page numbers, discussion of evaluation points (e.g. Items on the score sheet), linkage to appendices. |             |  |      |
| 11-20   | Reasonably organized, looks good, missing one or two items from list above.  |             |  |      |
| 1-10  | Poorly organized, no attention to looks, missing multiple items from list above.   | 0           | Disorganized, missing most items.                    |      |
| Comments:   |  |             |  | 30   |
| Adherence to specifications   |  |             |  |      |
| Cover sheet and/or title page that identifies the school team name, teacher contact information, and team number  |  |             |  |      |
| 1" margins, Business font no smaller than 12 pt., double-spaced (single spaced ok in tables and outlines);  |  |             |  |      |
| per Hub option, Softcopy Format = PDF or Hardcopy in Standard Binder, 35 one-sided page max for main section, 20 double-sided page max for appendices   |  |             |  |      |
| 21-30   | Adheres to the specifications listed above.  |             |  |      |
| 11-20   | Violates one of the specifications listed above.   |             |  |      |
| 1-10  | Violates two or three of the specifications listed above.  | 0           | Violates for or more specs.                          |      |
| Comments:   |  |             |  | 30   |
| Quality of content - Well written, clear photo labels, lack of extraneous material such as community or promotional efforts, spirit development, team building  |  |             |  |      |
| 21-30   | Everything is well written/clear/logical, everything is clearly labeled, no excess material.   |             |  |      |
| 11-20   | You can follow everything with some effort, one or two things that are unnecessary.  |             |  |      |
| 1-10  | Hard to understand in places, labels missing in places, unnecessary material.  | 0           | Very difficult to follow, unnecessary material.      |      |
| Comments:   |  |             |  | 30   |
| SCORE CALCULATION and Additional Comments:  |  | Total       | 300  | 216  |
|   |  |             | +10  | +10  |
|   |  | Final Score | 30 max   | 21.6 |

Judge name/number (print):

Samantha Bernal

Team Number:

0807

School:

Guyer High School

## Judges' 2018 Engineering Notebook Score Sheet

**Purpose:** To document the process used to design, build, and test the robot. (30 pts.)

| <b>Research Paper (4 pts.)</b>  |  |  |  | Possible Points | Points Awarded                                |    |
|---|--|--|--|-----------------|---|----|
| <b>Correlation between the game and how the science/technology is being used at a company/industry/research lab in the team's state or region</b>         |  |  |  |                 |   |    |
| 8-10  | In-depth discussion of how this year's game theme relates to industry in this region.  |  |  |                 |   |    |
| 4-7   | General discussion of how this year's game theme relates to industry in this region.   |  |  |                 |   |    |
| 1-3   | General discussion of this year's game theme, but no ties to the region  |  |  | 0               | No discussion of game theme.                  |    |
| <b>Comments:</b>  |  |  |  |                 | 10  | 8  |
| <b>Any related information of the game theme such as history, famous inventor(s), major milestones, etc.</b>  |  |  |  |                 |   |    |
| 4-5   | In-depth discussion of history and people related to this year's game theme.   |  |  |                 |   |    |
| 2-3   | General discussion of history and people related to this year's game theme.  |  |  |                 |   |    |
| 1   | Some mention of history or people.   |  |  | 0               | No discussion of related info                 |    |
| <b>Comments:</b>  |  |  |  |                 | 5   | 5  |
| <b>Analysis of the game theme/problem &amp; related technology's impact on the human experience, our needs, adaptations, and progress with solutions.</b> |  |  |  |                 |   |    |
| 4-5   | In-depth historical account of the effects to human experience, needs, adaptation and progress toward solutions.                       |  |  |                 |   |    |
| 2-3   | Some discussion about the effects of the theme/problem/technology on human experiences, needs, adaptations or progress.                |  |  |                 |   |    |
| 1   | Mentioned the effects to human experience, needs, adaptation or progress.  |  |  | 0               | No mention of history/effects to humanity.    |    |
| <b>Comments:</b>  |  |  |  |                 | 5   | 3  |
| <b>Creativity in linking the game to appropriately related science content</b>  |  |  |  |                 |   |    |
| 8-10  | Very creative in linking this year's game theme to other science/technology.   |  |  |                 |   |    |
| 4-7   | Attempted to link this year's game theme to other science/technology.  |  |  |                 |   |    |
| 1-3   | Mentioned other science/technology.  |  |  | 0               | No discussion of other science/technology.    |    |
| <b>Comments:</b>  |  |  |  |                 | 10  | 4  |
| <b>Proper formal writing - Proper use of grammar &amp; composition throughout ; source citations used to gather information; within 2-5 page limit</b>    |  |  |  |                 |   |    |
| 8-10  | Very few grammar mistakes/misspellings, included citations, 2-5 pages.   |  |  |                 |   |    |
| 4-7   | Noticeable grammar mistakes/misspellings or did not include citations, 2-5 pages.  |  |  |                 |   |    |
| 1-3   | Many grammar mistakes/misspellings, no citations, or not within 2-5 pages.   |  |  | 0               | Incomprehensible or missing.                  |    |
| <b>Comments:</b>  |  |  |  |                 | 10  | 8  |
| <b>Design Process (17 pts.)</b>   |  |  |  |                 |   |    |
| <b>Implementation of the Engineering Design Process ( Evidence that the engineering design process was effectively used )</b>                             |  |  |  |                 |   |    |
| 21-25   | Process is explicitly identified; steps are obvious and explanation is thorough.   |  |  |                 |   |    |
| 16-20   | Process is identified; steps are discernible and there is some explanation.  |  |  |                 |   |    |
| 11-15   | Process is not identified; there is some discussion of a design process.   |  |  | 6-10            | Discussion of process is minimal.             |    |
| 1-5   | You can tell there was a design process of some sort.  |  |  | 0               | No discernible design process.                |    |
| <b>Comments:</b>  |  |  |  |                 | 25  | 23 |
| <b>Brainstorming Approaches - How well organized and productive was the brainstorming approach? How well was it documented?</b>                           |  |  |  |                 |   |    |
| 21-25   | Approach is explicitly identified, organization & productivity are obvious, explanation is thorough, discussion of how decisions made. |  |  |                 |   |    |
| 16-20   | Approach is identified, organization and productivity are discernible, there is some explanation.                                      |  |  |                 |   |    |
| 11-15   | Approach is not identified, there is some discussion of brainstorming.   |  |  | 6-10            | Discussion of approach is minimal.            |    |
| 1-5   | You can tell there were ideas generated.   |  |  | 0               | No discernible brainstorming.                 |    |
| <b>Comments:</b>  |  |  |  |                 | 25  | 5  |
| <b>Analytical evaluation of design alternatives - Use of analytical and mathematical skills in deciding upon and implementing design alternatives</b>     |  |  |  |                 |   |    |
| 21-25   | Evaluation is explicitly identified, analytic/mathematical approach is obvious, alternative designs are explained.                     |  |  |                 |   |    |
| 16-20   | Evaluation is identified, analytic/mathematical approach is discernible, alternative designs are identified.                           |  |  |                 |   |    |
| 11-15   | Evaluation is not identifiable, alternative designs are identified.  |  |  | 6-10            | Discussion of alternative designs is minimal. |    |
| 1-5   | You can tell there were alternatives.  |  |  | 0               | No discernible evaluation.                    |    |
| <b>Comments:</b>  |  |  |  |                 | 25  | 22 |

### Judges' 2018 Engineering Notebook Score Sheet

|  |  |                    |  |      |
|--|--|--------------------|--|------|
| <b>Offensive and defensive evaluation - Analysis of gaming strategies and design elements used to achieve team goals</b>   |  |                    |  |      |
| 21-25  | Evaluation of offensive/defensive strategies is explicitly identified, goals of this team are clearly identified, discussion shows a deep knowledge of the game.       |                    |  |      |
| 16-20  | Evaluation is identified, goals are discernible, discussion shows a knowledge of the game.   |                    |  |      |
| 11-15  | Evaluation is not identified, there is some notion of goals and game knowledge.  |                    |  |      |
| 6-10   | Discussion of goals and game knowledge are minimal.  |                    |  |      |
| 1-5  | There is some slight mention of strategy.  | 0                  | No discernible evaluation.                           |      |
| <b>Comments:</b>   |  |                    | <b>25</b>  | 10   |
| <b>Software Development Process ( Evidence that a software development process was effectively used )</b>  |  |                    |  |      |
| 21-25  | Process is explicitly identified; steps are obvious and explanation is thorough. Design methods utilized are identified and explained.                                 |                    |  |      |
| 16-20  | Process is identified; steps are discernible and there is some explanation. Some design methods are discussed.   |                    |  |      |
| 11-15  | There is some discussion of a development process or design methods.   | 6-10               | Process is mentioned but minimal detail.             |      |
| 1-5  | You can tell there were some software design methods used.   | 0                  | No discernible software development process.         |      |
| <b>Comments:</b>   |  |                    | <b>25</b>  | 0    |
| <b>Safety - Evidence that safety training occurred and safe practices were followed to prevent students' misuse of tools and other devices/equipment that may result in personal injury or damage to property</b>  |  |                    |  |      |
| 17-20  | Clear evidence that safety training occurred, clear evidence that the team verified safety procedures were followed.   |                    |  |      |
| 13-16  | Clear evidence of safety training, some evidence procedures were verified.   |                    |  |      |
| 9-12   | Some evidence of safety training, some procedures were verified.   | 5-8                | Some evidence safety training, no verifying procedur |      |
| 1-4  | Safety was mentioned; unsafe methods might be visible in photos.   | 0                  | No mention of safety.                                |      |
| <b>Comments:</b>   |  |                    | <b>20</b>  | 10   |
| <b>Support Documentation - Team organization, meeting minutes, CAD/other drawings, photos, test results, etc. that support the main document (max 20 double -sided pages) ; +5pts bonus for National Registry proof,</b>   |  |                    |  |      |
| 16-20  | Clearly identifies ALL categories mentioned above; references made from primary document.  |                    |  |      |
| 11-15  | Identifies items from the list above; but missing one or two categories.   |                    |  |      |
| 1-5  | Includes items from at least 2 categories; but not identified.   | 6-10               | Items from at least 3 categories above are included. |      |
| +5   | Provided National Registry proof (e.g., order#s) per team member   | 0                  | No items from listed categories are included.        |      |
| <b>Comments:</b>   |  |                    | <b>25</b>  | 10   |
| <b>Overall Quality and completeness of Notebook (9 pts.)</b>   |  |                    |  |      |
| <b>Organization and appearance - Table of contents, summary, page numbers, discussion of evaluation points, linkage to appendices</b>  |  |                    |  |      |
| 21-30  | Well organized, looks good, includes Table of Contents, summary, page numbers, discussion of evaluation points (e.g. Items on the score sheet), linkage to appendices. |                    |  |      |
| 11-20  | Reasonably organized, looks good, missing one or two items from list above.  |                    |  |      |
| 1-10   | Poorly organized, no attention to looks, missing multiple items from list above.   | 0                  | Disorganized, missing most items.                    |      |
| <b>Comments:</b>   |  |                    | <b>30</b>  | 22   |
| <b>Adherence to specifications</b>   |  |                    |  |      |
| Cover sheet and/or title page that identifies the school team name, teacher contact information, and team number<br>1" margins, Business font no smaller than 12 pt., double-spaced (single spaced ok in tables and outlines) ;<br>per Hub option, Softcopy Format = PDF or Hardcopy in Standard Binder, 35 one-sided page max for main section, 20 double-sided page max for appendices |  |                    |  |      |
| 21-30  | Adheres to the specifications listed above.  |                    |  |      |
| 11-20  | Violates one of the specifications listed above.   |                    |  |      |
| 1-10   | Violates two or three of the specifications listed above.  | 0                  | Violates for or more specs.                          |      |
| <b>Comments:</b>   |  |                    | <b>30</b>  | 20   |
| <b>Quality of content - Well written, clear photo labels, lack of extraneous material such as community or promotional efforts, spirit development, team building</b>  |  |                    |  |      |
| 21-30  | Everything is well written/clear/logical, everything is clearly labeled, no excess material.   |                    |  |      |
| 11-20  | You can follow everything with some effort, one or two things that are unnecessary.  |                    |  |      |
| 1-10   | Hard to understand in places, labels missing in places, unnecessary material.  | 0                  | Very difficult to follow, unnecessary material.      |      |
| <b>Comments:</b>   |  |                    | <b>30</b>  | 20   |
| <b>SCORE CALCULATION and Additional Comments:</b>  |  |                    |  |      |
|  |  | <b>Total</b>       | 300  | 170  |
|  |  |                    | +10  | +10  |
|  |  | <b>Final Score</b> | 30 max   | 17.0 |

**Judge name/number (print):** Huseyin Bostanci

**Team Number:** 0807 **School:** Guyer HS