

# Judges' 2019 Engineering Notebook Score Sheet

AN

## 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

21

## 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

20

## 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

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 BEST 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.
0	No items from listed categories are included.	+5	Provided National Registry proof per team member

Comments:

25

10

## 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

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 four or more specs.

Comments:

30

15

### 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:

Total

300

227

÷10

÷10

÷10

Final Score

30 max

22.7

Judge name/number (print): 4

Team Number: 0804

School: Decatur Heritage Christian Academy

# Judges' 2019 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	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	
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	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	No discussion of other science/technology.	
Comments:			10	8
<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	16
<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	21
<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	16

# Judges' 2019 Engineering Notebook Score Sheet

AV

## 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

20

## 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

18

## 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 BEST 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.
0	No items from listed categories are included.	+5	Provided National Registry proof per team member

Comments:

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:

30

20

### 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);

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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

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

22

### SCORE CALCULATION and Additional Comments:

Total

300

239

÷10

÷10

÷10

Final Score

30 max

23.9

Judge name/number (print):

2

Team Number:

#0804

School:

Decatur Heritage Christian Academy

## Judges' 2019 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	9
<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	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	No discussion of other science/technology.	
Comments:			10	8
<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	21
<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	18
<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	18



# Judges' 2019 Engineering Notebook Score Sheet

AA

## 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

23

## 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

20

## 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 BEST 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.
0	No items from listed categories are included.	+5	Provided National Registry proof per team member

Comments:

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:

30

29

### 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);

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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

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

30

### SCORE CALCULATION and Additional Comments:

Total

300

266

÷10

÷10

Final Score

30 max

266

Judge name/number (print):

3

Team Number:

0804

School:

Decatur Heritage Christian

Academy

27.7

# Judges' 2019 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	
<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	
<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	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	No discussion of other science/technology.
Comments:		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	
<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.		
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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	24
<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.		
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Comments:		25	21
<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.		
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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	23

# Judges' 2019 Engineering Notebook Score Sheet

AN

## 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.		
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6-10	Discussion of goals and game knowledge are minimal.		
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Comments:

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Comments:

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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

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## 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 BEST National Registry proof,

16-20	Clearly identifies ALL categories mentioned above; references made from primary document.		
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0	No items from listed categories are included.	+5	Provided National Registry proof per team member

Comments:

25

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## 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:

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### 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);

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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

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

28

### SCORE CALCULATION and Additional Comments:

Total	300	278
	+10	+10
Final Score	30 max	27.8

Judge name/number (print): 6

Team Number: 0804

School: Decatur Heritage Christian Academy



## Judges' 2019 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	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	No discussion of other science/technology.		
Comments:				10	8
<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:				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' 2019 Engineering Notebook Score Sheet

AN

## 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

20

## 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

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

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 BEST 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.
0	No items from listed categories are included.	+5	Provided National Registry proof per team member

Comments:

25

15

## 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

24

### 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

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

30

### SCORE CALCULATION and Additional Comments:

Total

300

249

+10

+10

+10

Final Score

30 max

24.9

Judge name/number (print):

1

Team Number:

0804

School:

ERIS

# Judges' 2019 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: SMART SENSOR, WWW WEB			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:			25	20
<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	20
<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	15

95