2018 Kansas BEST Breakout Sessions

Notebook – Rachel Battershaw
September 8, 2018
NOTEBOOK AGENDA

- Questions for you!
- Documentation Matters!
- Important Dates
- Why the Notebook Matters?
- Cover Information
- Notebook Tips
- What We Are Looking For In Your Notebook
- Lessons Learned
- Contact Information
- Questions & Answers
QUESTIONS!

- How many of you read the Notebook Rubric last year?
- How many of you followed the Notebook Rubric last year?
- How many of you read the judge score and feedback sheets last year?
DOCUMENTATION MATTERS!

- The Notebook is your team’s opportunity to tell the journey of your team and robot
- Purpose of the Notebook
  - To document the process your team used to design, build, and test your robot!
- The Notebook is the **MOST** important part of the Engineering process
  - Record of the process and plans for future
  - Way to share information with your team, instructors, mentors, school administrators, and most importantly...the JUDGES!!!
IMPORTANT DATES

- Notebooks must be submitted at check in on Practice Day...October 13th!!! NO EXCEPTIONS!!!

- Notebooks will be returned at registration on Game Day...October 20th!!!
**WHY THE NOTEBOOK MATTERS**

- ALL teams are required to submit a Notebook
- Based on your Notebook score, four teams will have a chance to fill the “Wildcard” spot in the playoff round of the competition!
- Notebook Score – 30 points
  - Overall Quality & Completeness – 9 points
  - Design Process – 17 points
  - Research Paper – 4 points
NOTEBOOK COVER

- Put this on the COVER of your binder:

Current Events

<Insert School Name>
Team # <Insert Team #>
October 13, 2018

Teacher: <Insert Teacher Name>
Phone #: <Insert Phone Number>
E-mail: <Insert email>
NOTEBOOK TIPS!

- **START ON THE NOTEBOOK NOW!!**
- Select a few students to lead & compile the notebook
- *Read the Rules, Read the Rules, Read the Rules*
- Make a checklist of what you need/want in the notebook
  - Start with an outline
- Take notes EVERY day
  - Have each group write a summary at the end of every day
- Include ALL design decisions and your reason for making the decision
  - Also include rejected designs and why they were rejected
NOTEBOOK TIPS...PART TWO!

- Use graphics, drawings, and/or photos to show the progress of your team and robot
- Include a summary
- Imagine you are explaining your robot to someone who doesn’t know anything about your robot!!!
- Have people NOT familiar with the competition PROOFREAD your Notebook!!!
  - Parents, teachers, other students, etc.
- A well-organized report will make it easy for the judges to read and evaluate!
  - Remember...they determine your score!!!
What We Are Looking For In Your Notebook!!!
RESEARCH PAPER (4 POINTS)

- Belongs in Main Section of Notebook – NOT in Appendix!

- Correlation:
  - A clear connection on how the technology relates to the state or region

- Related Information:
  - At least a paragraph

- Creativity:
  - Try using something other than the first link in your Google search
  - Try to use a non-biased source

- Proper use of grammar and composition:
  - In text citations
  - Use a MINIMUM of three sources
  - APA or MLA citations ONLY...be CONSISTENT!!!
  - Research paper should be 2-5 pages
DESIGN PROCESS (17 POINTS) – IMPLEMENTATION

- Specify which Engineering Design Process you use
- Describe the Engineering Design Process in YOUR OWN WORDS!!!
- Describe HOW you used each step of the Engineering Design Process in your robot design
DESIGN PROCESS – BRAINSTORMING APPROACHES

- Show organization in your brainstorming
- Describe HOW you did your brainstorming
- Explain ideas and pros and cons for EACH idea
- Putting your ideas in a table is a good way to communicate what your ideas were:

<table>
<thead>
<tr>
<th>Brainstorming</th>
<th>Part of Robot</th>
<th>Pros</th>
<th>Cons</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Part of Robot 1</td>
<td>Easy to build</td>
<td>Limited mobility</td>
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<tr>
<td></td>
<td></td>
<td>Easy to mount</td>
<td></td>
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<tr>
<td></td>
<td>Part of Robot 2</td>
<td>Cool</td>
<td>Hard to build</td>
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<td></td>
<td></td>
<td>Team idea</td>
<td>Hard to fix</td>
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<td></td>
<td>Part of Robot 3</td>
<td>Robust</td>
<td>Complicated</td>
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<tr>
<td></td>
<td>Part of Robot 4</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Part of Robot 5</td>
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DESIGN PROCESS – ANALYTICAL EVALUATION OF DESIGN ALTERNATIVE

- Room for improvement from ALL teams!
- Give reasons WHY a design was selected or not selected
- List your design ideas
- Describe your decision making process
- Describe why you chose the design you did

TIME FOR A GROUP ACTIVITY!!! 😊
GROUP ACTIVITY EXAMPLE

- Rachel and Allison are HUNGRY and need to pick a restaurant to go out to eat
- Develop criteria
  - Driving time
  - Cost
  - Anticipated Wait Time
  - Speed of Service
- Weight each criteria based on importance to you
  - Driving time – 15%
  - Cost – 50%
  - Anticipated wait time – 10%
  - Speed of service – 25%
GROUP ACTIVITY EXAMPLE, CONT.

- Create a matrix of your brainstormed ideas and your weighted criteria
- Define what values mean
  - Driving Time: 5 is closest, 3 is avg, 1 is farthest
  - Cost: 5 is cheapest, 3 is avg, 1 is most expensive
  - Anticipated wait time: 5 is shortest, 3 is avg, 1 is long
  - Speed of service: 5 is fastest, 3 is avg, 1 is slowest
- Average each idea

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<th>Resturants</th>
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<th>Cost</th>
<th>Anticipated wait time</th>
<th>Speed of Service</th>
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<td>50%</td>
<td>10%</td>
<td>25%</td>
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<tr>
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<td>5</td>
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<td>4</td>
<td>4.45</td>
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<tr>
<td>On The Border</td>
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<td>4</td>
<td>3</td>
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<td>2</td>
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<td>1.3</td>
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GROUP ACTIVITY EXAMPLE, CONT.

- Your turn!

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<tr>
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<th>Criteria 3</th>
<th>Criteria 4</th>
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DESIGN PROCESS – OFFENSIVE AND DEFENSIVE EVALUATION

- Describe your scoring strategy
- Describe how your strategy influenced your robot design
- Defensive strategy does not have to be against another robot...try defending against:
  - Game field
  - Potential robot failures
  - Driver error...it happens!
  - Have a back up scoring strategy
SOFTWARE DESIGN AND SIMULATION

- We would like to understand your analytical approach taken for the software design
  - Evidence that you customized your software design
  - Demonstration of software design processes
  - Consideration of good software design processes
    - Naming conventions
    - Comments
    - Design simplicity
    - Modularity
DESIGN PROCESS – SAFETY

- Don’t include picture of your team members engaging in unsafe activity. YOU WILL BE GIVEN ZERO (0) FOR YOUR SCORE!!!
  - Don’t know what unsafe is?? Use common sense AND ASK YOUR TEACHER!!!
- Describe your team’s good safety practices
- Show evidence of safety training
  - Training outline, class description, etc.
- Show evidence that safety training was completed
  - Quiz results, attendance roster, etc.
DESIGN PROCESS – SUPPORT DOCUMENTATION/APPENDIX

- No Appendix = No Support Documentation
- Support Documentation/Appendix IS:
  - Charts, figures, drawing, pictures, organizational charts, meeting minutes, test results, etc. that are LABELED and REFERENCED IN YOUR MAIN DOCUMENT!!
  - NOTHING GOES IN THE APPENDIX THAT IS NOT REFERENCED IN YOUR MAIN DOCUMENT!!
- Support Documentation/Appendix is NOT:
  - Random papers thrown in at the end of notebook
  - Papers with tattered edges
  - Illegible hand written notes
New for 2018: opportunity for +5 bonus points!
If you include national registry proof (the order numbers per team member), +5 bonus points!
This would be through where you register at: http://bestnationalregistry.eventbrite.com
There is no penalty for NOT including this information, but then 0 bonus points are awarded
With bonus, the maximum score for the “Support Documentation” section is 25 points
OVERALL QUALITY AND COMPLETENESS (9 POINTS)

- **Demographics Sheet:**
  - Simple: No competition if not turned in!

- **Organization and Appearance:**
  - Table of contents WITH PAGE NUMBERS!
  - Executive Summary at the BEGINNING OF YOUR NOTEBOOK
  - See Support Documentation/Appendix Slide

- **Adherence to Specifications:**
  - SUPER DUPER EASY POINTS!!!
  - See Notebook score sheet!!!

- **Quality of Content:**
  - Make it obvious that YOU spent MORE time on your notebook than the judges did!
  - All pictures need to be labeled
  - Ensure accuracy of information and completeness of notebook
OVERALL QUALITY AND COMPLETENESS, CONT.

- Label your pictures!!!
- Don’t use torn out notebook pages
- TABLE OF CONTENTS NEEDS TO HAVE PAGE NUMBERS!!!

  - Use Microsoft Word...it will do this **automatically**!!! 😊

<table>
<thead>
<tr>
<th>Table of Contents</th>
<th>Table of Contents</th>
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<tbody>
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<td>pg. 15</td>
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<td>pg. 20</td>
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</tbody>
</table>
Lessons Learned from the Past

- Use standard font size
  - Give many examples for your design concepts, brainstorming ideas, etc.
  - No Wikipedia references for research paper!!!
  - Show understanding of the engineering process throughout the notebook
  - Follow guidelines on page limits and binder type
  - Ideas for appendix include design sketches, safety test, calculation sheets, analysis of design concepts

See how annoying this is?!?!?!
Score Sheets from Last Year

- Hand out score sheets from last year!
- USE THESE TO MAKE IMPROVEMENTS TO YOUR NOTEBOOK!!!
2018 Kansas BEST Contacts

- Notebooks: Rachel Battershaw
  rabattershaw@gmail.com

- Reference websites:
  - http://webs.wichita.edu/?u=kansasbest&p=/index
  - http://www.bestinc.org/
  - https://owl.english.purdue.edu/owl/section/2/
QUESTIONS?