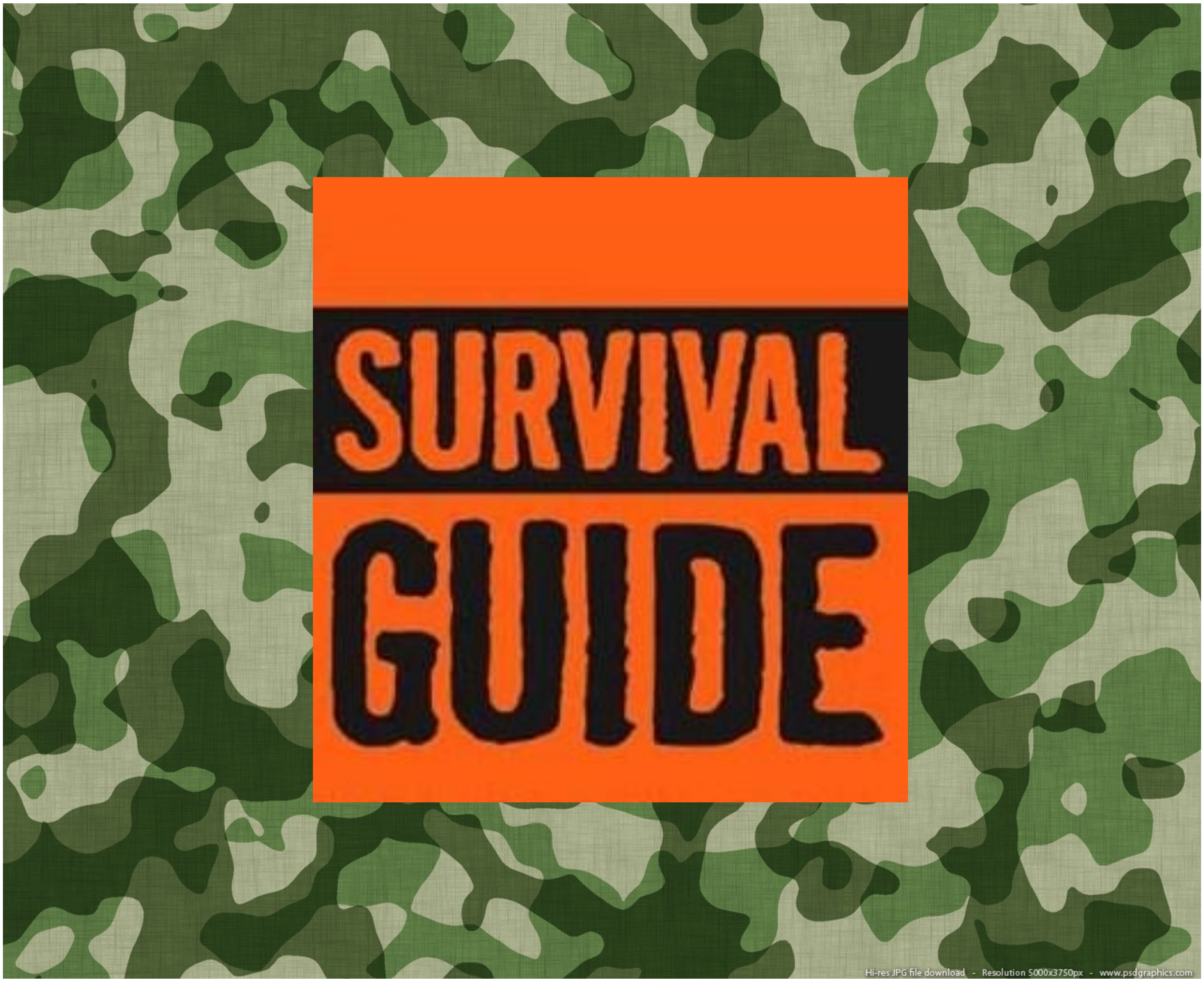

2016 STEM Survival Competition

November 5, 2016

Hosted by:

Wilkinson County Christian Academy

MR
Mississippi
Robotics

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PO Box 426
Woodville MS 39669
(405) 596-0292
MississippiRobotics.org

November 5, 2016

Dear Participant,

We would like to personally welcome you to the *Rural Robotics Challenge "Survival" Competition*. We're glad that you were able to join and hope that your experience at Wilkinson County Christian Academy (WCCA) is both fun and educational. It is through your desire to learn and interest in science, technology and mathematics that this program has grown and continues to become so successful.

We have a full agenda for the day, so please take a few minutes to read through the information in this packet. It will provide you with an idea of what you can expect through a schedule of events to event rules with descriptions.

We look forward to spending this time with you at WCCA. If we can do anything to make your experience more pleasant, please let us know. For more information on Mississippi Robotics contact: Ray Holt at (405) 596-0292 or STEMAdvancement@gmail.com.

Sincerely,

WCCA Robotics
Mississippi Robotics

MR
Mississippi Robotics

Rural Robotics Challenge

November 5, 2016

"Survival" Competition Schedule

Everyone is encourage to walk-around and to discuss or ask questions to the student "robotic engineers". Ask them what they learned in building and competing in this competition. *Please be careful of electrical wires and competition events in progress.* **Please turn OFF Bluetooth from all cell phones. Thank you**

7:30 am — 8:00 am **Team Arrive and Check-In** (*Sign in to receive badge, robot inspection, lunch payment & tickets)*

8:00 am — 8:30 am **Open The Survival Competition** (*Prayer, Devotion & Review Daily Activities)*

8:30 am— 9:30 am **Team Practice** (*Teams will have 1 hour to practice events and perform trial runs at each event)*

9:30 am— 12:30 pm **Teams Compete in Individuals Events** *(Competition includes a total of ten events which include all five Survival Events, Speed Race, Math Problems, Science Demonstrations, Survival Maze, and Airplane fly)*

12:00 pm—1:00pm **Lunch & Afternoon Snack** *Cost $10.00 for everyone*

1:00 pm—2:00 pm **Special Robot Demonstration by Baton Rouge Bomb Squad**
Final Scoring for Award Determination

2:00 pm **Awards Ceremony**

1st, 2nd, & 3rd individual Survival Events, Speed Race, Survival Maze, Airplane Fly
1st, 2nd, 3rd Overall Robotics, Math, Science medals
1st, 2nd, 3rd Overall STEM (all events) medals

Rural Robotics Challenge

“Survival” Competition Schedule

Rules ver 3.0

Competition Divisions.

Division I (small plastic robots or equivalent): 3rd – 5th grade
Division II (small plastic robots or equivalent): 6th – 8th grade
Division III (small plastic robots or equivalent): 9th – 12th grade
Division IV (medium-to-large metal-based robots or equivalent): 6th – 12th
Division V (non-standard or custom robots not fitting into Division I-IV): 6th – 12th
A student team can compete in Division II – III and Division IV-V if they register in both before April 16, 2016.

The Teams. Teams shall consists of two students. The grade of the oldest student on a team will determine the Competition Division. Robots can be shared across Divisions but not within a Division. Any student can use any valid robot for their match. (Example: A student can use a NXT for one match and an EV3 or Dash for another match). Robots can be modified and rebuilt between matches as long as the robot stays within the category size limits. Please have modified robots re-inspected. All robots must have the inspection sticker before competition.

The Robot (Divisions I, II & III). Each team in Division I - III shall have one NXT/EV3/VEXIQ or equivalent robot built only from standard parts available with the product. In addition, adhesive, tape, cardboard, wood, string, glue, or tie wraps are allowed. The starting robot size shall not exceed 14” x 14” x 14”. The robot can expand after the competition meet starts. No more than four motors can be used. All sensors are allowed. The robot shall be controlled via any remote control device. No part of the robot shall be considered sharp and/or dangerous by the judge/referee. Robots are highly encouraged to have a covered body with decorations and sponsor ads from the SUMO Banner Ad sale.

The Robot (Division IV). Each team in Division IV shall have one NXT/EV3/VEXIQ or equivalent TETRIX/VEX EDR robot built only from standard parts available with the product. In addition, adhesive, tape, cardboard, wood, string, glue, or tie wraps are allowed. The starting robot size shall not exceed 18” x 18” x 18”. One side of the robot can start with an extended 6” or less blade beyond the 18”. The robot can expand after the competition match starts. There is no limit on the # of motors, servos, and sensors used. The robot shall be controlled via any remote control device. No part of the robot shall be considered sharp and/or dangerous by the judge/referee. Robots are highly encouraged to have a covered body with decorations and sponsor ads from the SUMO Banner Ad sale.

Robot Communication. All driver-controlled communication shall be from a remote device. All robots shall have a unique name so as to not cause any communication confusion.

Rural Robotics Challenge

"Survival" Competition Schedule

Rules ver 3.0

The Events

Teams of two will compete in seven robot survival events to gain the most points as a team. Each event can earn from 0 to 100 points (Maximum 400 points). Drivers at Blind events (where the driver cannot see the entire path) can be assisted by their team partner only.

Event Restarts

Robots losing parts must continue. Robots that lose Bluetooth/wireless connection can restart as necessary. Robots with low battery must continue. Always charge your battery between events.

The Survival Events

Each robot challenge will have an easy path and a difficult path. The easy path will be worth 10 points. The difficult path will be worth from 0 to 100 points.

Each student will compete and both students on a team will add their scores for a team score. Each individual will be given 30-45 seconds to complete each Survival challenge. Failure to complete the easy or difficult challenge within this time frame may result in partial points or zero points. If a robot fails an event then the referee will place the robot on the path to continue the Survival challenge.

“Survival” Competition Schedule

Competition Events—2016

SURVIVAL EVENTS

Survival Challenge #1– Swinging Bridge (100 Points)

Robot can take the easy path around the swinging bridge for 10 points or the robot driver can drive onto the swinging bridge and off the swinging bridge for 100 points. Robot must successfully cross the swinging bridge and cross the finish line to stop the time.

Survival Challenge #2– Mountain Climb (100 Points)

Robot can take the easy path around the mountain for 10 points or the robot driver can successfully climb the mountain, challenging the rolling logs, and cross the finish line to stop the time.

Survival Challenge #3– Pendulum Swing (100 Points)

Robot can take the easy path around the Pendulum Arc windmill for 10 points or the robot driver can successfully drive between the moving blade (without touching it) and cross the finish line to stop the time.

Survival Challenge #4– S-Curve Tight Squeeze (100 Points)

Robot can take the easy path around the S-Curve Tight Squeeze canyon path for 10 points or the robot driver can successfully drive through the winding canyon road without getting stuck and cross the finish line to stop the time.

Survival Challenge #5– Dark Tunnel (100 Points)

Robot can take the easy path around the Dark Tunnel for 10 points or the robot driver can drive through the Dark Tunnel. Robot must fully exit the Dark Tunnel and cross the finish line to stop the time.

Survival Challenge #6 —Speed Race (100 points)

Each team will drive their robot 25 ft down and back as fast as possible through a bordered drive way. One team member will drive it down and cross the line and the other team member will drive it back and cross the start line. 100 points maximum based on times.

Survival Challenge #7—Paper Airplane Fly (100 points)

Each team will be given 5 minutes to make and fly as many paper airplanes for the greatest distance. Various weights of paper, pencils, scissors, and rulers will be provided. Each airplane MUST have the team # written on it. Both team members can participate making and flying the airplanes.

"Survival" Competition

Competition Events - 2016

<u>MATH, SCIENCE & SURVIVAL MAZE EVENTS</u>

Survival Challenge #8—Survival Maze (100 points)

Each team will drive through an approximate 5 ft x 10 ft obstacle maze to reach the end safe zone.

Survival Challenge # 9- Math Problems (100 Points)

Each team will be given four math problems at least two weeks before competition day. The solutions to the problems are to be written up in a concise and through manner and turned in during Check-In. Judges will present a 5th math problem to each team at the competition judging. The team will be given 2 minutes to analyze the problem and then tell the judge all they know about the problem and how they would solve it. Points will be assigned based on the overall written presentation of all the problems and the verbal presentation of the judge's problem. Maximum points will be 100.

Survival Challenge #10 — Science Demonstrations (100 Points)

College science students from Hinds Community College will demonstrate four science experiments. Competition students will be asked to watch each demonstration and answer questions about the experiment. 25 points can be awarded for watching each demonstration and answering questions about the demonstration. Maximum points will be 100 for all four science demonstrations.

All Events—1st—3rd for all events will be able to choose from a variety of tools.

Overall Performance Medals per category in Robotics (#1-#8), Math (#9), Science (#10), and STEM (all events). All scores from the above 10 events will be added for the STEM overall award.

“Survival” Competition

Tips, Guidelines and Suggestions

1. This is a competition based on driving skills and decision strategy. For each Survival event the participant has to make several decisions. First, they must decide to take the Easy Path or the Difficult Path. The Easy Path decision is very low risk and if completed is worth 10 points. If the Difficult Path is selected then a high risk path has been chosen because the participant can make maximum points for that event or 0 points. If they succeed and complete the Difficult Path they receive maximum points based on the event. If they do not succeed then they make 0 points. Also they have a maximum time they can't exceed. The Difficult Path is a tough decision but it can produce the highest points.
2. In most cases a light weight robot is best.
3. Always charge your robot battery when not in use. Events cannot be restarted due to a low battery.
4. Tie down all of your wires using Velcro, tie wraps or tape.
5. Tape parts that seem to fall off often.
6. There are several Bluetooth remote control apps available, some free and some paid. Select the best app for you. Different apps can be used for each event. Teams can change remote control apps at any time. Teams can switch cell phones or tablets or laptops for controlling at any time.
7. Changes to robots or attachments after inspection MUST be re-inspected by the event judge.
8. Drivers can change robots in between events and drive only approved robots. A driver/team can have more than one approved robot. One per event if you want.
9. Teams are encouraged to have common t-shirts, banner, poster board, novelty handouts for other teams, and crazy hats, etc.
10. Camouflage is the theme of the Competition. Decorate your robot and wear camouflage.

Special Thank you to our Volunteers:

The Board of Directors of Mississippi Robotics, Parents & Staff of WCCA, Rambling Herd Booster Club and community of Woodville for hosting this event .

Dr. Carl DeWitt's Physics classes from Hinds Community College for helping as event volunteers and to Dr. Carl Dewitt himself for helping as Head Scoring Judge.

Dr. Kevin McCone, Teacher and Science Department Head at Co-Lin Community College for helping as a Judge.

Chris Brown, Chemistry and Physics Teacher and Robotics Coach at Mount Paran Christian School, in Kennesaw, GA for helping as our "Survival" Master of Ceremony, Organizer and Field Judge.

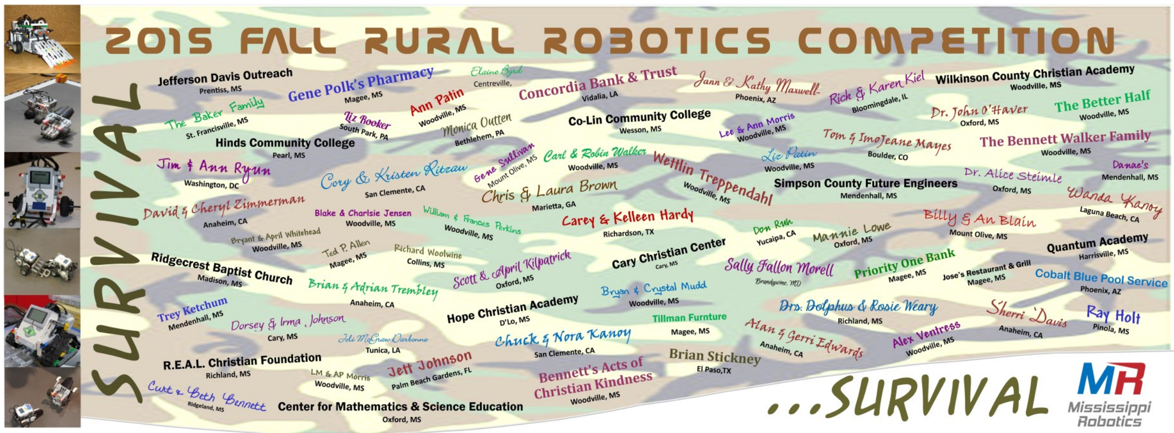
The officers of the Baton Rouge Police Bomb Squad and their "robot". THANK YOU !!!

Our next Rural Robotics event will be in May 2017 at Nissan-Canton. Sumo Wrestling will be the theme.

If you would like to sponsor or know a potential sponsor please contact Ray Holt at (405)596-0292, email STEMAdvancement@gmail.com or check out our website: MississippiRobotics.org

Thank you to our Sponsors:

For all those who participated in our Friends and Family banners



NISSAN– Madison for helping sponsor our competitions.