# 2019 VIRTUAL K **CATALOG**

MORE LAUNCH CODES INSIDE!

# **DESTINATION:**

BOEING





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# **WELCOME** to the 2019 *FIRST*<sup>®</sup> Robotics Competition Season

This Voucher Catalog is a reference for your team. Inside, you'll find additional items and value available to your team via the Kit of Parts system. Each page represents a specific voucher and its particular instructions and details. Don't miss out on any of these opportunities.

We are extremely grateful for the generosity and support that our *FIRST*<sup>®</sup> Suppliers provide! Thank you to all our 2019 suppliers. Be sure your team takes the time to thank them as well.

*Questions about the Kit of Parts can be sent to:* frcparts@firstinspires.org *More information about the Kit of Parts can be found at our website:* https://www.firstinspires.org/robotics/frc/kit-of-parts

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#### Supplier

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- Digi-Key Electronics.....
- Inventables .....
- Mastercam.....

**Supplier** Redeemed National Instruments Next Gen Robots, LLC..... PTC RoboPromo ..... Siemens..... SolidProfessor ..... SolidWorks Education..... Tableau ..... Vulcan Springs ..... Wolfram Research



Organization Name Voucher Detail Expiration Date Access Code(s) Website

#### Altium

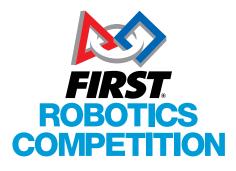
Free one-year Altium Designer student license 12/31/2019 N/A www.altium.com/frc

Altium is excited to partner with *FIRST*<sup>®</sup>, committed to providing every designer and engineer with tools to enable you to turn your ideas into products in the easiest and most productive way.

- Altium Designer consists of all the tools required to produce a PCB from concept to manufacturing.
- A PCB development platform supplying both the electrical and mechanical view.
- Integrated access to over a hundred suppliers makes it easy to select the best parts for your design.

To access one-year free student license, fill out the form www.altium.com/frc

Special Instructions: One to five student licenses to be shared per high school team



# Altıum.

#### Proud to support *FIRST*<sup>®</sup> POWERFUL TOOLS FOR NEXT GENERATION ELECTRONIC DESIGN



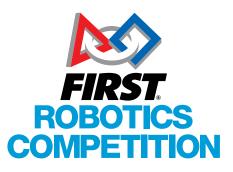
## USE ALTIUM DESIGNER FOR FREE NOW! www.altium.com/frc



Organization Name Voucher Value Expiration Date Shipping Access Code(s)

Website

AndyMark \$450 04/15/2019 Team Responsibility Visit Team Registration Account (Lead Mentor 1 or 2) www.andymark.com



- Veteran *FIRST*<sup>®</sup> Robotics Competition teams who opt out of the Kit of Parts Chassis can use up to \$450 by means of a Product Discount Voucher (PDV) for AndyMark products.
- Products can be redeemed by shopping at **www.andymark.com**, and using their team's assigned code from step 1.
- Upon checkout at andymark.com, teams enter this code instead of payment.
- Any order value over \$450 will be the responsibility of the customer, and will need to be paid to AndyMark through normal order purchasing methods.

# AndyMark, Proud to provide products and vouchers *FIRST®* Robotics Competition Kit of Parts.

Proud to provide products and vouchers for the



AndyMark develops and manufactures parts and products specifically for FIRST<sup>®</sup> teams.

- Gearboxes & Motors
- Wheels
- Flectronics
- Pneumatics
- Hardware and More!

## Visit our website to see all of our product offerings. AndyMark.com

# A R M A B O T

Organization Name Voucher Value Expiration Date Shipping Access Code(s)

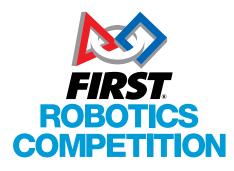
#### Website

Armabot One (1) RS7 encoder 04/27/2019 Team Responsibility Visit Team Registration Account (Lead Mentor 1 or 2) www.armabot.com

#### 1. Go to www.armabot.com

- 2. Select 1 or more RS7 encoders (first unit free with this voucher)
- 3. Enter your valid code from the FIRST® Team Registration System
- 4. Enter shipping and billing information
- 5. Place order and wait for arrival (3-5 days in continental USA)
- 6. Installation instructions at www.armabot.com
- 7. Technology tutorial for encoder implementation at www.armabot.com

Valid for purchase of one RS7 encoder indiviually or a multiple product order that includes one RS7 encoder. Limit one per *FIRST*<sup>®</sup> Robotics Competition Team. Must be registered for the 2019 robotics season. Voucher not transferable to other people or teams.



## EASY INSTALL Worm-Drive Clamp Secure and simple attachment.

# DUICK INTEGRATION Technology Tutorial

CAN bus PID tuning via Talon SRX controller.

·Vented Design

Doesn't interfere with motor air flow.

## 

CUSTOM DESIGNED MOUNT

# 775pro Motor Encoder -

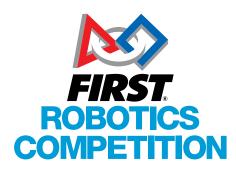
Successful use at 2016 & 2017 Championships.



Organization Name Voucher Detail Website Autodesk 3D Design Software Access www.autodesk.com/first

www.autodesk.com/first is a dedicated page for everything *FIRST®* Robotics Competition and Autodesk related, including CAD Datasets, Tutorials and access to Autodesk software.

- Autodesk Fusion 360 Explore design ideas quickly and easily with the integrated concept-to-production platform with 3D CAD/CAM. Connect your entire product development process in a single cloud-based platform that works on both Mac and PC.
- *Autodesk Inventor* Professional grade solution for 3D mechanical design, simulation, visualization, and documentation.
- Autodesk Synthesis A simulator designed to help FIRST<sup>®</sup> Robotics Competition Teams design, test and experiment in a virtual game environment with the virtual game field.
- Autodesk Eagle Bring your next spark of an idea to life with powerful PCB design software made for every engineer.
- Autodesk 3DS Max 3D modelling and animation solution used by game developers, visual effects artists, and graphic designers to create massive worlds, stunning scenes, and engaging virtual reality (VR) experiences.





# Robotics skills on the rise

Autodesk is excited to provide open access to our design software, *FIRST* data sets, and a kit of parts. We even have competition simulation software – created specifically for *FIRST* teams – to help you test and experiment using 3D modeling and robotics skills.

Check out what is available at www.autodesk.com/first

Free Autodesk software and/or cloud-based services are subject to acceptance of and compliance with the terms of use or other applicable terms that accompany such software or cloud-based services. Software and cloud-based services subject to an Educational license may be used solely for Educational Purposes and shall not be used for commercial, professional or any other for-profit purposes.



Organization Name Voucher Description Expiration Date Shipping Access Code(s)

#### **More Info**

Automation Direct \$35.00 04/30/2019 Team Responsibility (see below for details) Visit Team Registration Account (Lead Mentor 1 or 2)

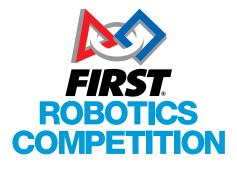
#### https://library.AutomationDirect.com/free-first-voucher/

To use: (follow closely, we cannot apply the discount AFTER you place an order!)

- 1. Login as Lead Mentor 1 or 2 at www.firstinspires.org to retrieve your team's voucher code.
- 2. Login to www.AutomationDirect.com with an existing account OR create a new one at www.AutomationDirect.com/new-user.
- 3. Visit www.AutomationDirect.com/Voucher and enter your team's code. This will enable a one-time \$35 credit for your account (any amount not utilized on the order will be forfeited).
- 4. Shop!

#### Some Restrictions Apply:

- 1. Orders **must** be placed online. No 'call in' orders. Stock items ordered by 6:00pm EST will ship the same day.
- 2. Orders **must** ship to a US or Canadian address. Credit Cards must be issued by a US or Canadian bank.
- 3. This voucher cannot be used towards shipping fees or Canadian brokerage fees. A credit card (or PayPal) will be required to pay for shipping for orders under \$49. Larger orders may qualify for free two-day shipping - see Web Site for details: http://www.AutomationDirect.com/static/specs/adpolicy.pdf
- 4. This voucher cannot be used to pay sales tax. A credit card (or PayPal) will be required to pay any applicable taxes. If your team/organization is tax exempt, you can submit appropriate documentation online during checkout.



## These items are popular with FIRST teams:





Organization NameCIVoucher Value\$2Offer Expires09ShippingNoAccess code(s)FIWebsitecl

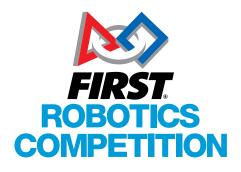
Clippard \$20.00 09/01/2019 Not Included FIRST1920 clippard.com

Congratulations on the many successes you have achieved to earn your team a position in the 2019 *FIRST*<sup>®</sup> Robotics Competition!

As long-time supporters of the *FIRST*<sup>®</sup> organization, and the new generation of pneumatic enthusiasts, Clippard is happy to provide you with a complimentary **AIR VOLUME TANK (#AVT-PP-35)** found in your kit of parts.

In addition, we are proud to provide you with an additional **\$20.00 of FREE Clippard components** for your design needs. Simply visit clippard.com to select your products, and use the promotional code above at check out. Please note that you must create an account and be logged in for the voucher to be validated.

#### If you need technical assistance, don't hesitate to contact us at 1-877-245-6247.





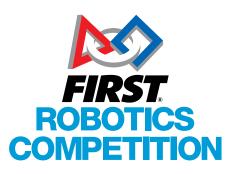
Air Cylinders • Directional Control Valves • Electronic Valves Control Valves • Isolation Valves • Pinch Valves Manual Valves • Fittings • Air Preparation Equipment Tubing • Custom Valves & Assemblies

#### **MINIATURE PNEUMATIC PRODUCTS & SOLUTIONS**

www.clippard.com



Organization Name Voucher Value Expiration Date Shipping Access Code(s) Website Digi-Key Electronics \$50 Product Donation Voucher for *FIRST®* Robotics Competition Teams 09/30/2019 Included See Team Registration System www.digikey.com



#### **Digi-Key is proud to provide you with \$50.00 of FREE components.**

- Visit DIGIKEY.COM/FIRST to redeem your team's voucher.
- The \$50.00 voucher will not display on the total of your order, but will be subtracted from your order during processing.
- This Product Donation Voucher valued at \$50.00 is good for the purchase of components only at www.digikey.com/first.

Taxes not included. This voucher is good for a one time use. Any amount not utilized in your initial transaction will be forfeited.



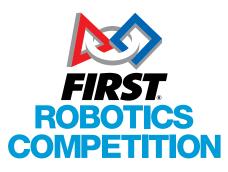


#### INVENTABLES.

Organization Name Voucher Value Expiration Date Shipping Access Code(s)

Website

Inventables Any item in store 06/03/2019 Team Responsibility Visit Team Registration Account (Lead Mentor 1 or 2) www.inventables.com



# The Inventables PDV is usable as a gift code on the Inventables website for any item in the store.

- 1. Retrieve your team's voucher code from the FIRST® system.
- 2. Add the desired items from our store to your cart.
- 3. Use the voucher code in the "Enter Promotion" field on the shopping cart page.
- 4. Check out as normal.







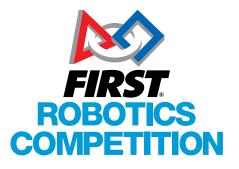
#### INVENTABLES.COM/FIRST

# Master**cam**.

Organization Name Voucher Value Expiration Date Shipping Access Code(s)

Website

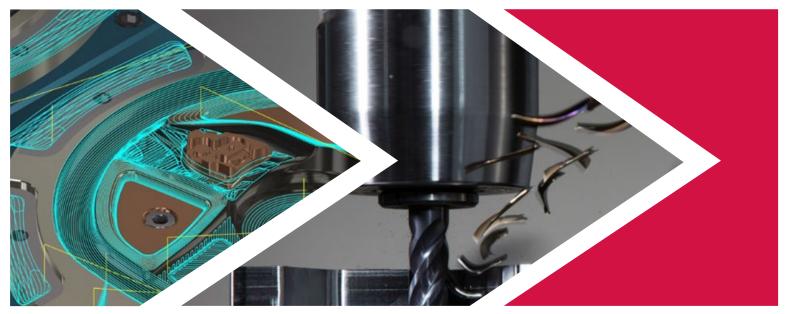
Mastercam \$20,000 09/30/2019 Included Visit Team Registration Account (Lead Mentor 1 or 2) www.mastercam.com/firstrobotics



The Mastercam voucher represents one free license of the Mastercam 2019 Educational Suite. The Mastercam 2019 Educational Suite includes your choice of Mastercam or Mastercam for SOLIDWORKS. Mastercam is a CAD/CAM software that can be used to both design products and program the processes to manufacture parts, specifically on CNC machines. Mastercam generates toolpaths that drive machine tools to turn designs into physical parts. The retail value of the Mastercam Educational Suite is approximately \$20,000.

**Please go to www.mastercam.com/firstrobotics to register.** You will be asked to complete and submit a registration form. Once the form is received and processed you will then receive detailed instructions on how to download and install the software.

# **Mastercam** THE FUTURE STARTS HERE



Proud to provide vouchers for the *FIRST*<sup>®</sup> Robotics Competition Kit of Parts. www.mastercam.com/firstrobotics



Organization Name Voucher Value Expiration Date Shipping Access Code(s)

#### **More Info**

National Instruments NI LabVIEW Software 01/15/2020 Included Visit Team Registration Account (Lead Mentor 1 or 2) http://www.ni.com/first

NI is pleased to provide all *FIRST®* Robotics Competition teams with a FREE license for LabVIEW, our systems engineering software platform. This license also provides access to more than a dozen LabVIEW add-ons, NI Multisim for SPICE simulations and NI Ultiboard for PCB design.

#### 1. Access Serial Number

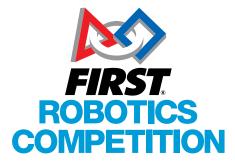
Visit the *FIRST*<sup>®</sup> Team Registration site at www.firstinspires.org to access your serial number.

#### 2. Download Software

Get NI LabVIEW for *FIRST* Robotics Competition via the *FIRST* Robotics Competition Resource Hub at www.ni.com/frc

#### 3. Learn and Earn

Learn LabVIEW with free online training and earn skills badges at www.ni.com/frc





NI equips engineers and scientists with systems that accelerate productivity, innovation, and discovery.

### A Global Leader in Test, Measurement, and Control Solutions



#### The NI Platform

NI accelerates engineering success by providing you with an open, software-centric platform that takes advantage of modular hardware and an expansive ecosystem.



#### The NI Ecosystem

The NI ecosystem helps you build innovative systems more efficiently by providing services and support, software add-ons, and solution partners around the globe.

FIRST.



**NI Products** 

NI offers a combination of productive software, high-quality drivers, and modular hardware that helps you build user-defined solutions.

www.ni.com

# nextGen

Organization Name Voucher Detail Expiration Date Shipping Access Code(s)

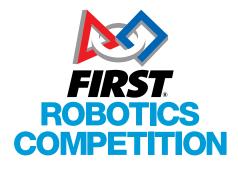
Website

Next Gen Robots CIM Cooler 180 or 775 Cooler 360 05/31/2019 Team Responsibility Visit Team Registration Account (Lead Mentor 1 or 2) www.nextgenrobots.com

#### Attention FIRST<sup>®</sup> Robotics Competition Teams:

- Be sure to email sales@nextgenrobots.com with your Lead Mentor Name, FIRST Robotics Competition Team Number, and PDV Code found on the FIRST Robotics Competition Team Registration System so that we can make sure that your code is active!
- Once confirmed, enter the team's assigned code from step 1 into "Coupon code" on your order and the discount will appear during checkout. Do not "Checkout as guest".
- 3. Before submitting the order make sure the discount has been applied to the total. If the discount is not showing, try clicking "view cart" and reapply the code.

GOOD LUCK to all 2019 FIRST Robotics Competition Teams from Next Gen Robots!







Organization Name Voucher Detail Expiration Date Shipping Access Code(s)

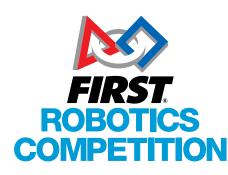
#### Website

PTC PTC Software Access N/A Included Visit Team Registration Account (Lead Mentor 1 or 2) www.ptc.com/go/first

**PTC** is proud to help you be the engineers and innovators of tomorrow. The following free software is available to you:

- **Creo** 3D CAD software that can save your team time and budget by designing, assembling, and testing your robot before the physical build.
- *Mathcad* Engineering calculation software that documents your teams critical engineering calculations.
- *Windchill* Project management in the cloud. Securely manage and share all your files (documents, images, CAD files).
- *Vuforia* Vuforia for computer vision and augmented reality. Determine the precise 3D location of objects and surroundings in your robot's field of view.
- *Kit of Parts* PTC models all of the parts from the official *FIRST*<sup>®</sup> Robotics Competition Kit of Parts and playing field.

#### Questions? Email: first@ptc.com



#### www.ptc.com/go/first





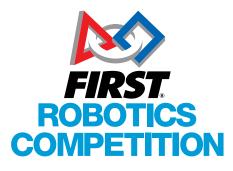
PTC is proud to join forces with *FIRST*<sup>®</sup> to help you be the engineers and innovators of tomorrow.



Organization Name Voucher Detail Expiration Date Shipping Access Code(s) Website

RoboPromo Rookie Bumper Material (\$36 value) 04/01/19 Team Responsibility deepspace19 www.robopromo.com





#### Instructions:

- Go to www.robopromo.com and enter access code **deepspace19** at checkout (include team number) and receive (1) roll each of red and blue bumper material.
- Available to rookie teams only.
- Available 01/05/19

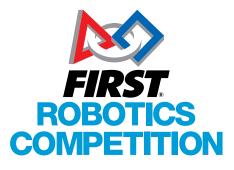




Organization Name Voucher Detail Expiration Date Shipping Access Code(s) Website

RoboPromo *FIRST*® Iron-On Bumper Logos (\$16 value) 04/01/19 Team Responsibility logo19 www.robopromo.com





#### Instructions:

- Go to www.robopromo.com and enter access code logo19 at checkout (include team number) to receive (1) pack of (8) iron-on logos: 3.75" x 5"
- Available to FIRST® Robotics Competition Teams only.
- Available 01/05/19 (one order per team)

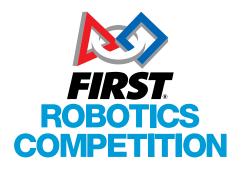




Organization Name Voucher Detail Expiration Date Discount Code Website

Siemens Solid Edge Certification Exam (\$25 value) 12/31/19 Robotics19

https://solidedge.siemens.com/en/resources/solid-edge-certification/



# Students can take our industry-recognized Solid Edge Certification online exam at no cost:

- 1. Follow the link we've provided or perform a web search for 'Solid Edge Certification'.
- 2. Once on the Siemens Certification website, choose which version of Solid Edge you are most familiar with.
- 3. Register using a valid e-mail address.
- 4. Select the 'Associate Level 1 (appropriate for high school students)', exam.
- 5. Enter 'Robotics19' (case sensitive), as the Discount Code.

#### Students have 3 hours to complete the exam. Good Luck!

#### Thinking about using 3D CAD to design this season's robot? Want one that's powerful, easy-to-learn, and fun to use?



Download Siemens' FREE Solid Edge Student Edition and quickly learn how to design in Solid Edge by taking our online, self-paced courses developed exclusively for *FIRST*.

Then, using discount code 'Robotics19' when prompted, waive the \$25 exam fee and try your hand at taking our industry-recognized certification!

Download your free student license today: www.siemens.com/plm/solid-edge-student





Website

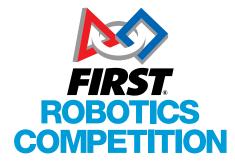
Solid Professor One Free Membership (\$490 value) N/A Included Visit Team Registration Account (Lead Mentor 1 or 2) www.solidprofessor.com/frc

# We proudly sponsor FIRST<sup>®</sup> Robotics Competition by providing your team with one free SolidProfessor membership granting access to:

- CAD & CAM video-based courses, tutorials, and practice problems to get your team up to speed before competition
- A library of software titles and topics, including SOLIDWORKS, Autodesk, Onshape, MATLAB, 3D printing, and more to round out your team's design knowledge
- Search functionality to quickly find answers to all your design questions throughout Build Season

Register your team today to begin learning the tools you'll need to conquer the competition.

To register your team, please visit https://www.solidprofessor.com/frc and fill out the form.





1 year SolidProfessor membership for *FIRST*<sup>®</sup> Robotics Competition teams

Team voucher included in the 2019 Virtual Kit of Parts

And more...





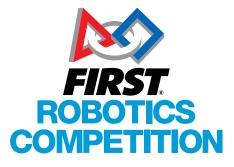
S SOLIDWORKS

DFM









Organization Name Voucher Detail Expiration Date Access Code(s)

Website

SolidWorks Education Free Student Sponsorship N/A Visit Team Registration Account (Lead Mentor 1 or 2) www.solidworks.com/FIRST

#### SolidWorks is a proud FIRST<sup>®</sup> Robotics Competition Sponsor.

# **DS SolidWorks Corporation wants to help develop the engineers and innovators of tomorrow.**

Interested student teams should complete our online application at: www.solidworks.com/FIRST

#### With FREE Student Sponsorship, students get access to:

- SOLIDWORKS Kit of Parts
- SOLIDWORKS 3D CAD
- SOLIDWORKS Electrical
- SOLIDWORKS Composer





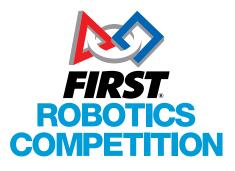




Organization Name Voucher Detail Expiration Date Shipping Access Code(s)

Website

TableauOne copy of Tableau Desktop04/30/19IncludedVisit Team Registration Account<br/>(Lead Mentor 1 or 2)www.tableau.com/first-robotics



# Complimentary access to Tableau Desktop data analysis and visualization, and Tableau Prep for data preparation.

Visualize your data. Quickly answer questions. Play better defense, pick alliance partners, analyze robot performance, target your fundraising, and reduce inventory waste.

- Use the product code found in your Lead Mentors' 1 and 2 *FIRST*<sup>®</sup> registration accounts for five activations per team.
- Don't forget to check out Tableau's free online resources (https://www.tableau.com/ first-robotics) created specifically for *FIRST®* Robotics Competition students.

These access codes are for educational use only. Please do not share your key with anyone outside your team.

# ++++ + a b | e a u

# Tableau Desktop is free for *FIRST®* Robotics Competition students.



Organization Name Voucher Value Expiration Date Shipping Access Code(s)

### Website

Vulcan Spring & Manufacturing Co. 6 Free Springs from Select List N/A Included (within the U.S.) Visit Team Registration Account (Lead Mentor 1 or 2) info.vulcanspring.com/first-robotics-competition

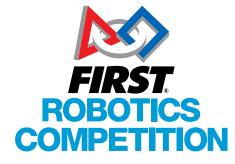
### Beyond the Spring<sup>™</sup>

Vulcan Spring is proud to support FIRST<sup>®</sup> Robotics Competition and excited to help the next generation of engineers design, innovate, and provide solutions for the future.

- Mix and Match any 6 springs from our stock springs listed at info.vulcanspring.com/ first-robotics-competition.
- Carefully choose the 6 springs you would like and submit the online request form.
- Ground shipping included within the USA.

### **CONFORCE® CONSTANT FORCE SPRINGS:**

- Offer high force output with very small space requirements
- Provide long linear reach with minimal force buildup
- Store power indefinitely when extended





# Beyond the Spring<sup>™</sup> ►►►

The Preferred Global Supplier of Spring Solutions for Industrial Applications



Phone: 215-721-1721 | 501 Schoolhouse Road, Telford, PA 18969

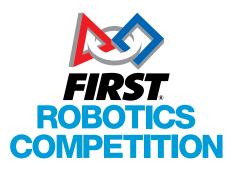


COMPUTATION MEETS KNOWLEDGE

Organization Name Voucher Detail Expiration Date Access Code(s)

Website

Wolfram Wolfram Software Access 06/03/19 Sent via email after completing webform www.wolfram.com/firstrobotics/

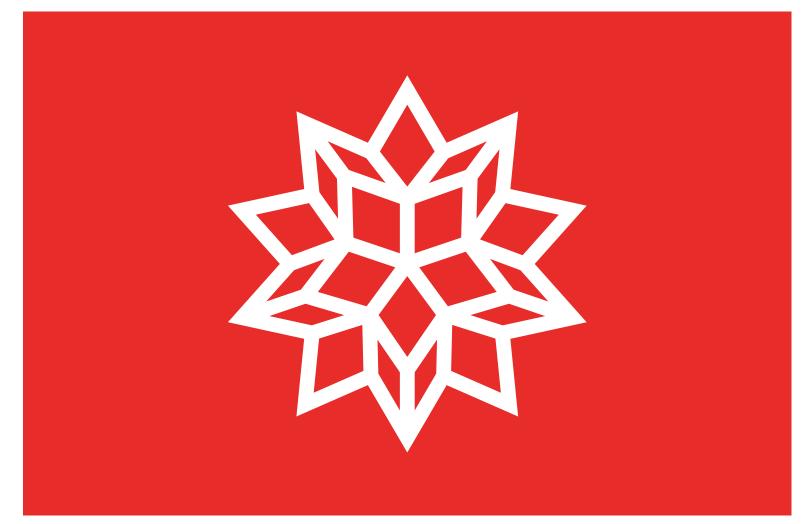


### The voucher contains complimentary access to:

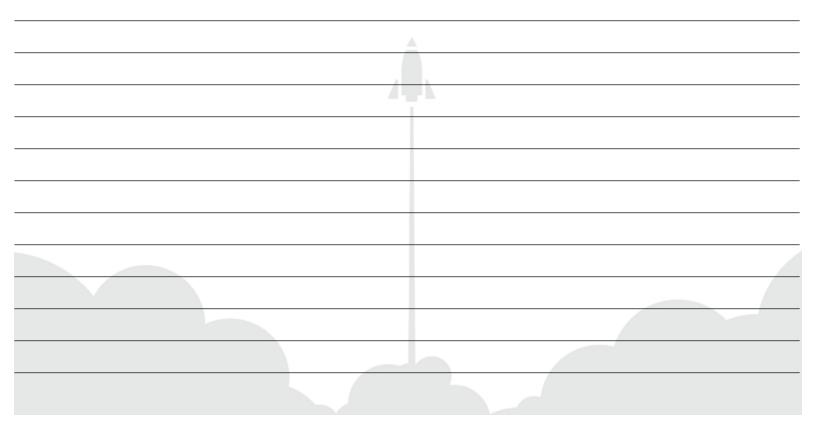
- 1. *WolframlOne*, a programming environment that provides access to the complete Wolfram technology stack
- 2. Wolfram Alpha Pro subscription
- 3. Wolfram SystemModeler, a modeling and simulation software

# Students can visit this website http://www.wolfram.com/firstrobotics/ to learn more about the technology and resources being offered.

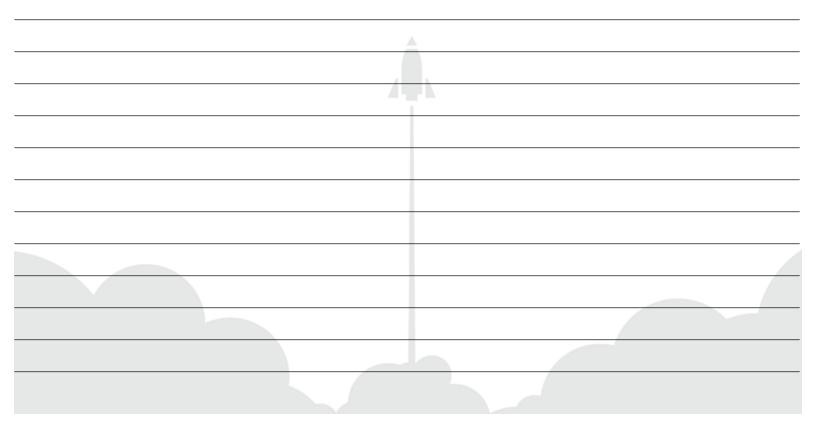
In order to redeem and access their resources, simply fill out the form http://www. wolfram.com/sponsorshiporderform/ and you're done! In addition to the access code, students must also enter their team name and coach name in the provided fields.



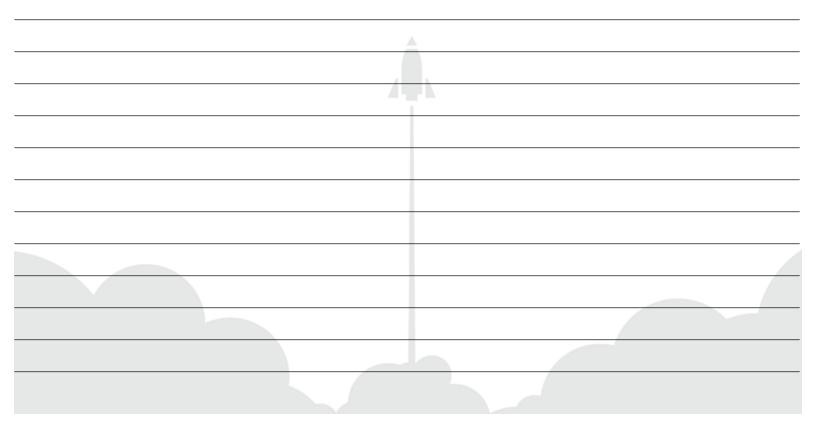
# NOTES



# NOTES



# NOTES





FIRST® Where kids walk in and innovators walk out.

"It's not just about robots. It's about building self-confidence, respect, and important relationships with people who invent new technologies to make a better future."

> - Dean Kamen, founder, FIRST www.firstinspires.org



## Have a blast this season!

200 Bedford Street Manchester, NH 03101 USA (800) 871-8326

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