

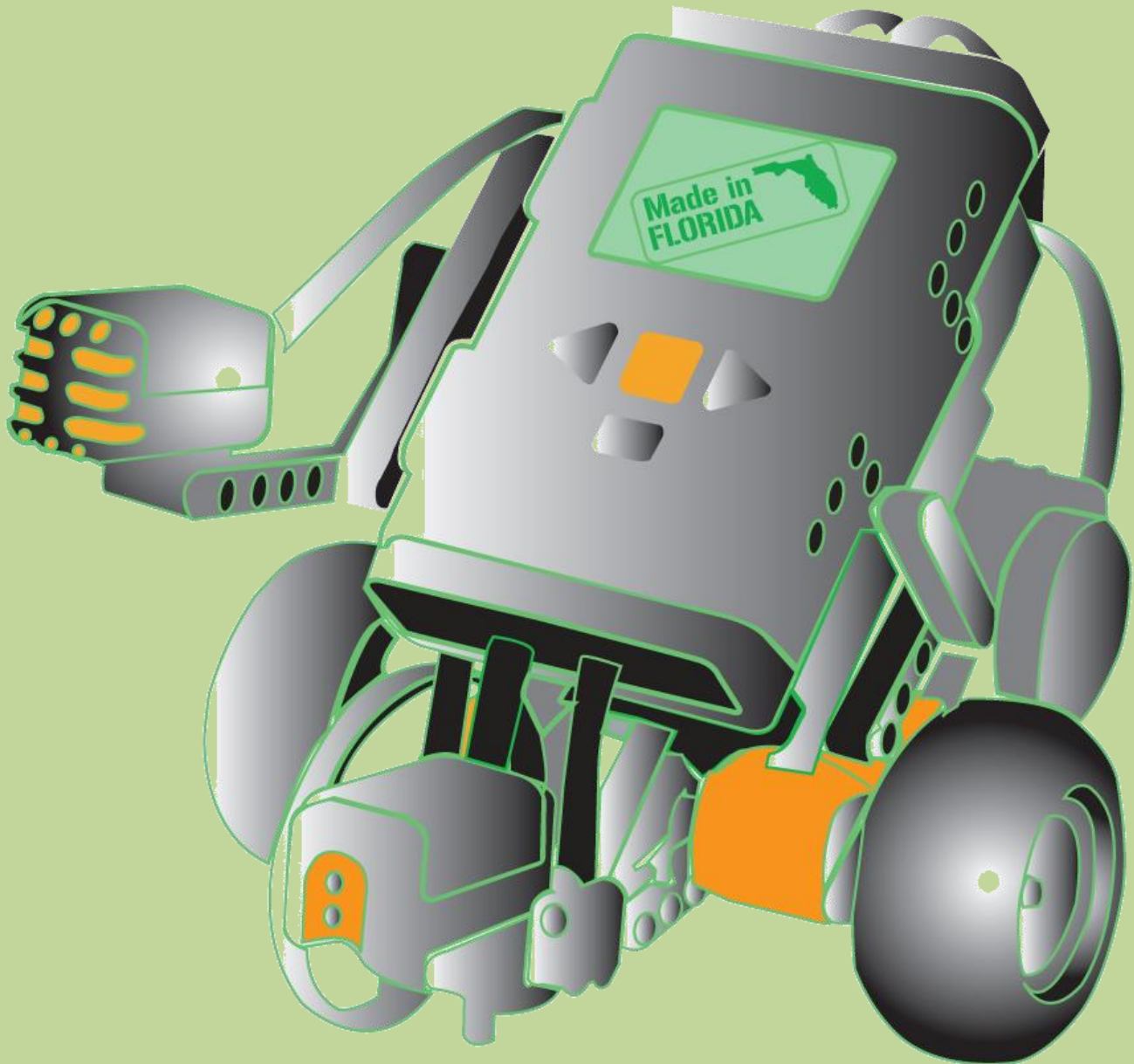


# Robotics Camp Survival Guide

*a FLATE Best Practices Guide*



2011 EDITION



# **FLATE**

## **Florida Advanced Technological Education Center of Excellence**

*a National Science Foundation Regional Center*

10414 E Columbus Drive

Tampa, FL 33619

Tel. 813.259.6577

FAX 813.259.6576

[www.fl-ate.org](http://www.fl-ate.org)

Hillsborough Community College

Developed by:

Dr. Marilyn Barger

Dr. Marie Boyette

Mr. David Gula

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# Introduction

*Let's get started...*

If you're interested in learning how to maximize your success for creating and running a middle school summer camp about robotics—with the least amount of problems, you're reading the right material. Over the last 7 years, we graduated from co-sponsoring a camp experience to providing the total package on our own. Not that we have all the answers, but we've had our share of learning opportunities and would like to share what we've learned with you. This guide is about conducting a summer camp, ours is in robotics, but you can apply the same principles to camps offering science, technology, engineering and math (STEM) or other curriculum. This material may help you choose between “wants vs. needs,” and provide ideas. We hope it will help your camp be as successful as possible with the minimum amount of bumps along the road.

Learn more about us at: [www.fl-ate.org](http://www.fl-ate.org) or [www.madeinflorida.org](http://www.madeinflorida.org)

This is our first edition of the toolkit. We would welcome your feedback and ideas about the materials and your experience using them.

**Please contact us at: 813.259.6581 or [outreach@fl-ate.org](mailto:outreach@fl-ate.org).**

*Copyright Disclaimer:*

*All materials connected with Lego™ in any way are under a strict copyright and should be treated as such. We are not connected to Lego™ or Lego Mindstorms™ products in any way. These products already have a connection with many campers and educators, and are only limited by the imagination and have excellent educational-support materials designed at the Carnegie Mellon University. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.*

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# What's the goal?

*Aim for the moon, shoot for the stars...*

## PROGRAM GOALS AND OBJECTIVES

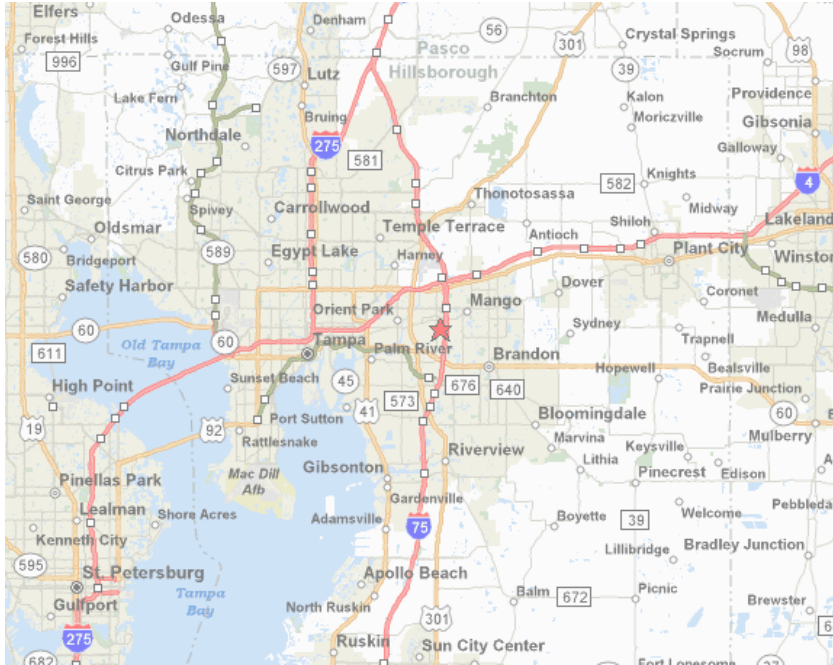
This program is designed to introduce campers to robotics and teach them the science, technology, engineering, and mathematics (STEM) concepts used in modern manufacturing. The camps also expose campers to programming robotics through the use of software. In addition to the technological information the campers receive, the program also enables them to learn and practice lessons in leadership skills, communication, and teamwork. Each summer camp is designed to be five days in length and involves classroom exercises, team experiences, field trips and fun!

Our Introductory and Advanced camps are geared toward children in the middle school grades 6<sup>th</sup> through 8<sup>th</sup>, as both use the Lego™ Mindstorm Robots and follow the same format. In 2010, we held a “Just for Girls” camp, which evened the playing field for previous experiences in working with Legos and this year we conducted the 1<sup>st</sup> ‘Introduction to Industrial Robotics’ camp for high school students. The basic camp model has been conducted at several other community institutions and colleges throughout Florida due to popular demand.

# How to get here?

Thank goodness for Mapquest...

## EXAMPLE MAP



### From North (Ocala):

I-75/Tampa (south)Exit at SR 574/Mango/Martin Luther King Jr BlvdRight onto Martin Luther King Jr Blvd. (west)Left onto Falkenburg Rd (south at first traffic light)Left onto E. Columbus Dr East (east)

### From South (Sarasota):

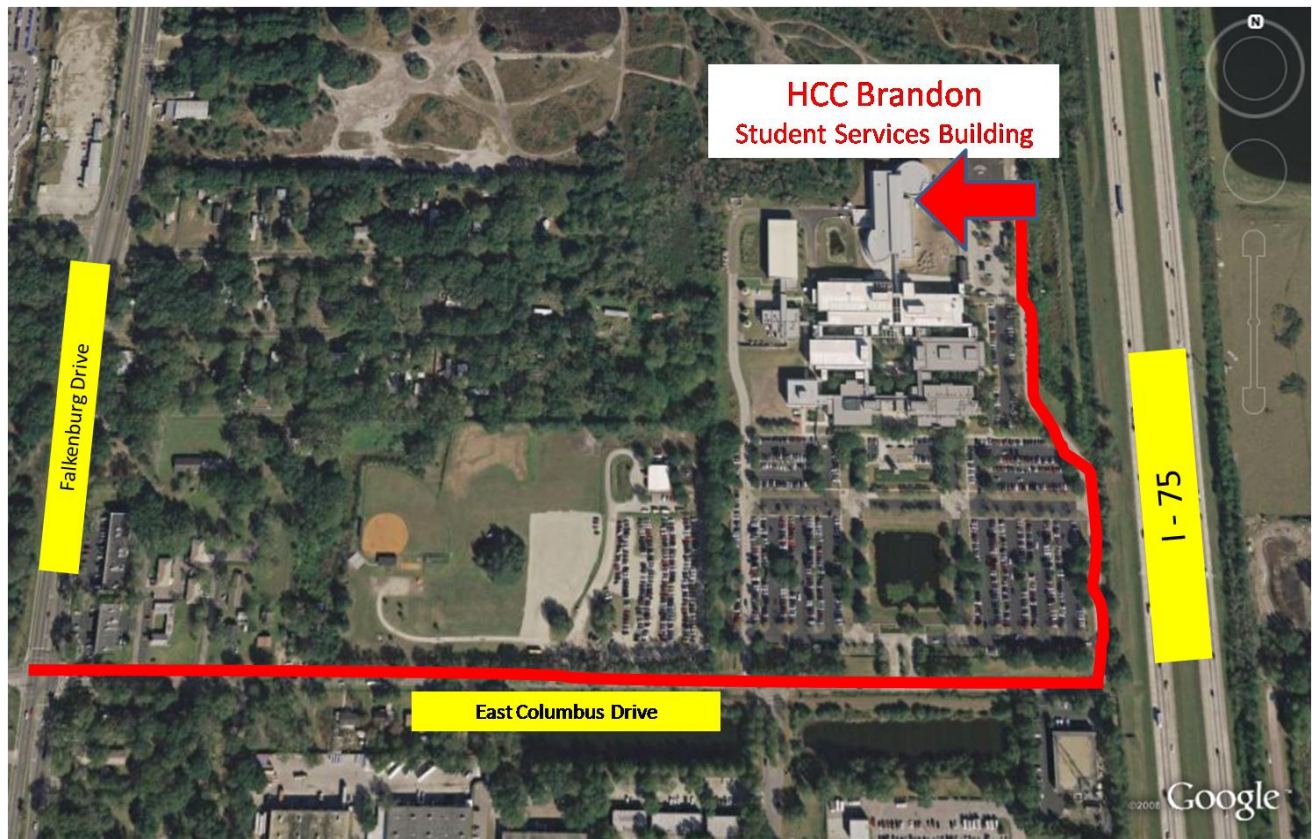
I-75/Tampa (north)Exit at SR-60/Brandon/TampaLeft onto SR-60 (west)Right onto Falkenburg Rd. (north at the first light)Right onto E. Columbus Dr East (east)

### From East (Orlando):

I-4/Tampa (west)Exit at I-75/Naples (south)Exit on SR 574/Mango/Martin Luther King Jr BlvdRight on Martin Luther King Jr Blvd (west)Left onto Falkenburg Rd (south)Left onto E. Columbus Dr (east)

### From West (St. Petersburg):

I-275/Tampa (east)Exit on I-4/Orlando Exit at SR-574/Martin Luther King Jr Blvd EastRight onto Martin Luther King Jr Blvd. (east)Right onto Falkenburg Rd (south)Left onto E. Columbus Dr (east)



# What about funding and cost?

*"Show me the money!"*

## FUNDING

- Camp organizers must first decide whether the robotic programs will be not-for-profit programs or if they will be conducted to earn revenue. Revenue generating types of camps will require different planning and budgeting concerns.
- There are several areas of funding that camp organizers can pursue to assist in financing the programs: outside funding and internal funding. Outside funding can be secured through industry sponsors, private, and/or local organizations, individual contributions, and grants. Materials for the camps may be secured through donations versus being purchased by the camp or campers. Inside funding can come from sources such as school or organization contributions.
- Organizers can also consider whether they will pursue scholarships or grants to assist campers with paying for camp registration rather than allowing the campers to be self-pay campers.
- For example, each of our 1 week camps cost about \$250/camper on average to run. This does not include the investment of robots. To be as inclusive as possible, we charge \$150/camper and have 20 enrollments per week. We solicit sponsors to offset some of the overall costs. The remainder is supported by FLATE and our host institution, Hillsborough Community College.

## EXPENSES

- There are different costs, which may be incurred for the camp: one-time expenses and recurring expenses. The structure of the camp can determine whether a cost occurs once or several times.
- An example of a one-time expense can be facility charges and equipment costs. The computers and software that are required for the camps will be reused during the various sessions.
- The robots themselves can be a recurring expense, but that is dependent upon the structure of the camp. If the robots are reused by the different

camps during the summer, then that is a one-time expense. If they are given to the campers as “take aways,” then that is an expense which will recur for each camp.

- Camp instructors – unless you use volunteers, instructors will also be a recurring cost and will be your biggest (and most important) expense.
- Beverages (we recommend bottled water only), snacks, and even lunches are all optional items to be considered.
- Miscellaneous supplies including paper to print certificates and lessons, markers for some lessons, extra batteries, rulers, name tags, pencils, etc.

# Facilities

*Location, location, location...*

## THE BUILDING

The cost of a facility is something to take into consideration when planning your camp. Organizers can search for options that can be procured free of charge through local organizations such as a school, Boys and Girls Club, etc., or you may elect to rent a facility space.

It is beneficial to choose a location which is easily accessible for staff, campers, parents, and any special needs. The facility should have adequate parking for staff and a drop-off area for children. Facilities should also be equipped with desks and chairs and have adequate restrooms that can accommodate the staff and campers.

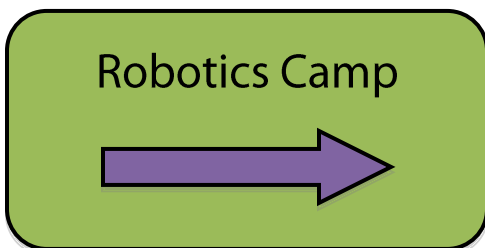
## THE CAMP ROOM(S)

Aside from the usual classroom layout with desks and chairs, the layout for the robot challenges requires a minimum 20' square of clear space, level flooring or carpet (a square space, 20 feet on each side) and a roll of painters tape (the blue kind) to lay out the course the robots will follow.

Classrooms equipped with computers and a LCD or Elmo type projector are also recommended for the camps. We use 1 computer per 2 students. It's also helpful if instructors have Internet access within the teaching area. Internet access can allow the instructors to show campers online videos and demonstrations which will compliment the camp. An example of one such website is Stanford University's "How Everyday Things Are Made" (<http://manufacturing.stanford.edu/>).

Finally, be sure to point the way to the classroom with a colorful sign:

## EXAMPLE - SIGNS



# Equipment

*Computers and robots and rulers...oh my!*

## HARDWARE/SOFTWARE

In our programs, either the middle or high school, each team of two campers has a laptop and a LEGO™ MINDSTORMS Education Base Set (model #979797) along with the appropriate software to run the programming. This student to equipment ratio is not mandatory, but we found it best for the overall learning experience.

## MATERIALS LIST

MATERIALS	PURPOSE
Measuring devices: Meter sticks, rulers, and tape measures (teams could share). <i>Recommend 1 per team.</i>	Some activities require the campers to do some simple measuring.
Install the robotics engineering software on each camper computer.	Campers will be working with both, robots and software daily.
10 Calculators (OR use calculators on computers)	Campers are required to make calculations for distance, averages, etc.
Certificates/prizes for winners	For each team challenge we need to be able to reward winning teams with a small prize/certificates. This could include candy, pencils/pens, etc.
10 Folders	Folders to be used as team portfolios. All worksheets, reflection journals and team challenge material will be kept in these portfolios.
Name Badges	This is a great idea, just in case campers and teachers forget each other's names or wander off.
Blue painters tape	Campers will be using the tape when experimenting with the light sensors on their robots.
4 cases of water bottles (full)	The water bottles will be used as points of reference and obstacles for the robots. This water is for the course ONLY-not for drinking.
Batteries for robots (check robots for size and type)	Make sure you check on the type and size before camp to ensure you have enough for the entire camp duration.

# Communication

*It IS what you say, not just how you say it*

Coordinators/Camp Directors are responsible for several areas in the creation and management of the camps. They assist in marketing, scheduling and camper registration, as well as logistics during the challenges/events.

## BEFORE

*Marketing:* To ensure that camp reaches maximum registration capacity, coordinators/camp directors should utilize \*local media and newspapers.

- Place ads in local newspapers
- Place ads online with local news stations – for example [www.myfoxtampabay.com](http://www.myfoxtampabay.com)
- Advertise on “camp” websites ([www.summercamps.com](http://www.summercamps.com))
- Hang posters (as many places as you can)
- Hand out flyers (at local events)
- Email flyers to past campers (parents) and/or perspective camper (parents)

*Registration:*

- Email confirmation letters with camp information, directions, permission slips such as for field trips, video/photo release forms, etc.
- Email reminders the week before camp
- Ensure you have all registration forms and payments for each camper

*\*If the coordinator/camp director plans to have press coverage of the camps, it’s necessary to contact the media far in advance. News stations can be difficult to “book,” therefore, the more notice they have—the better. Also, contact television stations that are interested in community events as you may be able to advertise on such stations at no charge.*

## DURING

- Email regarding the weeks activities and special events or field trips
- Email parents/campers the Camp Survey

## AFTER

- Email a “thank you” to campers and parents
- Email Camp Survey reminder (for those who haven’t completed the survey)

# Best Practices

*"I think I can...I think I can!"*

## PURPOSE

The "Made in Florida" Summer Robotics Camp captures the interest of campers of all ages. Our camps include middle and high school students, which also includes home-schooled campers of the same age and grade level. The curriculum is a mixture of Lego™ educational materials, STEM subjects and modern manufacturing information conducted in an environment of fun, team work and competitive problem solving.

## PREPARATION

Preparation for a robotics camp program is imperative and since it is important – do it yourself.

*Coordinators/instructors:* Take the time to conduct a pre-robotics camp simulation and determine the answers to the following;

- Can I put a robot together from its component parts?
- Are all of the robots the same and are they all functional?
- Are there enough computers available for programming the robots (if needed)?
- Can I program a robot to perform each of the tasks to be asked of the campers?
- Are all of the support supplies in place and properly stored and labeled?
- Is the camp space adequate in size, comfortable, and safe for middle school campers?
- Has the competition course been tested with your current robots?
- Are there adequate power outlets to avoid a "spaghetti" effect of extension cords and avoid fire/safety hazards?
- Is there adequate table space for each team to work by themselves on their robots?
- Is there space and seating capacity for family and friends during the last day competition?
- Is there adequate help for the camp? *We recommend one instructor and one coordinator/helper for a camp of 20 or more campers (10 teams of 2). Both should be familiar with the robot challenges/lesson of the camp (contact FLATE for some examples).*
- Is there a daily schedule that includes a variety of lessons and activities?
- Be as prepared as possible; but allowing flexibility for the unexpected during the camp is important.

## PARENTAL PARTICIPATION

Getting the parents involved is a multiple step process:

*First*, understand that

- Parents plan summer activities around work, vacations, day care, and other activities well in advance.
- Parents feel more confident when they have the opportunity to speak to someone who is not only knowledgeable, but who will actually be in attendance at the camp.

*Second*, in order to overcome perpetual parental uncertainty, nothing takes the place of one-on-one contact.

As all the details will never fit into a flyer, take the extra time to cover the following using a memory guide that covers:

- Benefits of the camp
- Camper drop-off and pickup policy (include time window)
- Assurance that activities are supervised by camp staff
- The camp's lunch, snack, and food allergies policy
- The camp fee payment schedule and options

*Third*, follow up every registration with a personalized thank you note and indication of your anticipation of working with their child this summer and again at the conclusion of the camp with resource information.

# Best Practices (continued)

## PRACTICAL PRACTICES

- Provide a flyer that emphasizes the “Who says fun and learning cannot happen together” theme. Include camp related photos and cover the basic logistics and amenities included in the camp infrastructure.
- Post all policies related to camp activities and camper behavior expectations on your website. Provide the web address for this information in all camp flyers.
- Notify employees at your institution of camp as a great opportunity for their children.
- Notify your campus leadership and public affairs office to help develop press and T.V. coverage for camp.
- Start promotion and registration activities in February and continue through opening day.
- Provide a minimum of 90 days needed to plan and prepare for your summer camp.
- Build a database of parents of participants as well as serious inquires that did not result in a camp registration last year.
- Support your camp instructors’ interest and enthusiasm for camp innovations.
- Provide tangible products to campers related to the educational aspects of camp that encourage further learning.
- Cultivate camper leadership and promote teamwork, critical thinking, and problem solving.
- Establish a non-refundable fee structure that commits parents to delivering campers to camp each day.
- Establish a “late pick up” fee to encourage prompt retrieval of campers at the end of the day.
- Select instructors based on their knowledge and enthusiasm who connect well with campers.
- Provide instructors with a good honorarium but don’t hire an instructor just because they want the money.

## FOLLOW UP

- A great follow up activity is to have a “Parents’ Night” where you talk about all the different technical school programs in your area (have a representative from your school district), include Q&A and offer an enticing door prize.
- Take that opportunity to present on the importance of STEM subjects in the school curriculum, promote next year’s camp, and of course, another opportunity to take pictures!

## PERFORMANCE

- Measure your impact and also learn how you can improve your next camp using a simple paper survey passed out to campers the last day of the camp. You can get additional useful feedback with an online survey for parents and the instructors (such as Survey Monkey).
- *FLATE has resources for camp planning and curriculum ready to share with your team – sample documents can be found in this guide.*

# Classroom Teaching Materials

*This is the first Lego™ Mindstorm Lesson/Challenge. It is simple and easy for most children to complete successfully.*

**Example Lesson Plans/Challenges (additional lesson plans are included on the CD)**

Lesson Title: **Team Challenge: The Bottle Touch**

Time: 1 hour

Objectives:

Campers apply the knowledge gained in the “Full Speed Ahead” lesson to find a solution to a team challenge.

Campers will estimate the distance to a fixed point and then program their robots to get as close as possible to that point.

Standards:

Math, Science, Technology

Materials:

- Lego Mindstorms programming software
- Robotics Engineering software
- Blue tape
- Water bottle
- Rulers or meter sticks
- Teacher’s right angle block and ruler for measuring distance from front axle to bottle line.

Lesson Summary:

A water bottle is placed a predetermined distance (only the teacher will know what this distance is) from the starting line. Campers program their robots to come as close as possible to the bottle without pushing the bottle over. Campers should be able to use what they learned about the circumference of the wheel to calculate the necessary rotations needed for the robot to come close to the bottles.

Lesson Details:

Each team will be allowed three trials to get their robot as close as possible to a water bottle that has been placed a predetermined (by the teacher) distance from the starting line. Campers do not know what the actual distance is from the starting line to the water bottle. Campers are given a ruler and the following instructions: Teams are not allowed to measure the actual distance from the starting line to the water bottle or any line parallel to that distance. Teams should come to the realization that the tile floor provides a measurable pattern. Each team is allowed three trials. The goal is to program the robot to come as close to, or even touch the water bottle without pushing it over. At the end of the first trial we will measure the distance from where the robot stopped to the water bottle. If a team thinks they can do better than their first trial, then they may reprogram and try again, but they will not be able to use their first trial towards their final score. If a team decides to try a second trial, then the results of the first trial are cancelled. If the team decides to try a third trial, then the results of the second trial are cancelled. The best possible score will be the number closest to zero but not zero itself. If Team A pushes the bottle over on their third trial their assigned score is X. If Team B comes within .5 cm of the bottle their assigned score is .5. If team C comes within 2 cm of the bottle their assigned score is 2. In this scenario the winning team would be Team B.

*see appendix for an example weekly schedule.*

# Media Resources

*Sometimes a picture is worth a thousand words*

Researching the Internet for “robots” will supply organizers with an infinite amount of resources for industrial, medical, space exploration or educational robotics. Below are some “key words” to help you begin your journey.

- [FANUC](#) / [da Vinci surgery](#)
- [Sony robotics](#) / [Toyota robotics](#),
- [ASIMO](#) / [NASA robotics](#)
- [Aldebaran NAO](#)

## Take Aways

*Can I have that?*

Pens, pencils, lanyards, t-shirts, nametags and team flags can all be used as take/give aways during the camp. Each child will be given a completion certificate. Certificate will also be given to team winners of the overall challenge.

## Trips and Tours

*Road Trip!*

Based on your particular camp genre and to stimulate interests in STEM career and diverse robotic applications, make arrangements to take campers to visit local, modern manufacturers, or colleges with robotics lab so that campers can see robotics in real-life applications. You can also take campers to the movies or show movies that are related to the field of robotics. Because of liability issues, have parents complete a field trip release form before taking campers off camp grounds. Your local school district can supply you with a release form which you may use for your camp. *See the appendix for sample forms.*

## Food (Snacks and Lunch)

*Come and get it!*

Campers can bring their own snacks and lunches or purchase them if your facility is able to offer them this option. This option avoids the issue and responsibility of family and camper food allergies and preferences.

To accommodate the campers’ food, it is recommended that the camp’s facility contain refrigerators or coolers.

We provide bottled water and non-sugar snacks twice a day but have the campers bring their lunches.

## Example Camp Flyer



**...ANOTHER CAMP HAS BEEN  
ADDED TO THE SCHEDULE...**

# **Lego® Mindstorms® Robotics Summer Camp**

*Program and Reconfigure  
Lego Mindstorms® Robots*

*Participate in Team Challenges*

*Learn how to operate CNC  
Machines at the USF  
Engineering Labs*

*Learn about the science,  
math and technology used in  
modern manufacturing*

**Hillsborough Community College Brandon Campus  
Middle School Introduction To Robotics  
July 20-24, 2009  
8:00 am to 4:00 pm daily  
Registration Fee \$50.00**

The Summer Robotics Camps are being conducted through a partnership between the Florida Advanced Technological Education Center, HCC and the USF College of Engineering.

For more information, please contact Dave Gula,  
FLATE Outreach Manager at 813.259.6581

## Example Camp Application

**Summer Robotics Camp  
Presented by  
The Florida Advanced Technology Education Center,  
HCC and the USF College of Engineering**

Our summer camps are designed to introduce campers to the world of robotics and automation so they can then explore the applications in both the industrial and personal use fields. The camp facilitators are from SDHC, HCC and USF, all selected based on their experience and training. The programs are held in conjunction with the National Science Foundation funded Florida Advanced Technological Education Center located at the Hillsborough Community College

During this exciting program, campers will learn how to reconfigure the robots, program them to follow specific commands, be part of "robotic team challenges", and learn how to program and operate CNC (Computer Numerical Controlled) equipment at the USF Engineering Labs and examine careers in modern manufacturing. In addition, they will also be sharpening their skills in math, in physics and in the application of scientific principles and new technologies.

The programs will be conducted at the Hillsborough Community College, Brandon Campus, Student Services Building, 10414 East Columbus Drive. All camp days are 8:00 am to 4:00 pm daily. Campers are to bring their own lunch and snacks.

The total cost of the camp is only \$50.00, due with the application and is non-refundable. Please make out checks to:

**"HCC-FLATE"** and mail to; **David Gula / FLATE**  
10414 East Columbus Drive  
Tampa, FL 33619

-----  
Application for Introduction Camp.... July 20-24, 2009

Name \_\_\_\_\_ School/Grade (Sept 09) \_\_\_\_\_  
Home Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_  
Preferred Calling Name \_\_\_\_\_ T-Shirt Size \_\_\_\_\_  
Parent/Guardian \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_  
Daytime Phone \_\_\_\_\_ E-mail \_\_\_\_\_  
Signature \_\_\_\_\_

For any additional program  
Information, please contact:  
David Gula, FLATE Outreach Manager  
(813) 259-6581  
gula@fl-ate.org

**Example Emergency Care Authorization Form**

If I cannot be reached to make arrangements for emergency medical care for my child at the time of an illness, accident, or injury, I give my permission for FLATE Robotics Camp to obtain whatever treatment may be deemed necessary for:

Child's Name: \_\_\_\_\_ D.O.B. \_\_\_\_\_

When there is a medical emergency or when a child needs immediate medical treatment the staff of FLATE Robotics Camp will take all reasonable steps to see that the child receives adequate medical care. When appropriate, I will call 911 and the parent(s).

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Parent Signature	Date
Parent Signature	Date
FLATE Robotics Camp	Date

**Example Video/Photo Release Form**

FLATE - Hillsborough Community College

Summer Robotics Camp

**VIDEO/PHOTO RELEASE FORM**

I hereby grant my permission for FLATE, a National Science Foundation Advanced Technological Education Center, and Hillsborough Community College to use recordings and photographs made of me on July 13-17, 2009, for educational and promotional purposes related to their mission of supporting and promoting the manufacturing industry in Florida. This use may include reproduction of my image on or in publications such as videos, CDs, DVDs, brochures, web sites, and other print and/or electronic publishing methods. I understand that I will receive no compensation for my participation in such programming and that I have no claim on the finished product.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Example Field Trip Release Form

### Camper Request

I, \_\_\_\_\_ am a camper in \_\_\_\_\_  
Print Name of Camper Print Name of Class

class at \_\_\_\_\_ School.

My home address, including parent/guardian name: \_\_\_\_\_  
Print Parent/Guardian Name

\_\_\_\_\_  
Print Home Street Address City State Zip

\_\_\_\_\_  
Home Phone Work Phone

The intent of this voluntary statement is to form an agreement in which I pledge my compliance with the policies in the Hillsborough County Camper Handbook and to conduct myself on all field trips in such a manner as to bring honor to my school and myself in return for the privilege of being included as a participant in field trip activities.

### Parent/Guardian Request

As parent or guardian, I request that \_\_\_\_\_ participate  
Print Camper's Name  
in the field trip to \_\_\_\_\_ that will be conducted on / / .  
Print Name of Trip Destination Month / Day / Year

I understand that transportation for the trip will be provided by

a private automobile of a parent, teacher, and/or licensed camper, none of which is under control of School District of Hillsborough County.

OR

a regular school bus operated by the School District of Hillsborough County.

OR

a private bus under charter to the School District of Hillsborough County.

\_\_\_\_\_  
Signature of Camper's Parent or Guardian

\_\_\_\_\_  
Date of Signature

A copy of this form must be turned in to the office 3 days prior to the field trip.

**Example Sponsor Thank You**

*Dear Sponsor,*

*We are still excited about the success of the 2010 Summer Robotics Camps, and I want to personally express how important your support has been. Camp information via mass e-mail, school and media resources, and other contacts helped create a growing awareness about optional summer educational opportunities for middle school campers throughout Hillsborough County. This year we held eight camps which provided us with 200 participants and a definite increase in parental interest as well over 100 parents and relatives attended the three Friday afternoon “Final Challenges.”*

*The 2011 summer plans are already in the works. Additional “Advanced Robotics for Middle School Campers” more “Girls Only” camps, and educational outreach to underserved areas is planned.*

*Again, thank you very much for your support of the program; we will obviously be seeking your support in the future, and we all hope you enjoy “showing off” the latest in robotic t-shirt wear!*

*Sincerely,  
Marilyn Barger  
Executive Director  
Florida Advanced Technological Education Center for Manufacturing  
(A National Science Regional Center for Manufacturing Education)*

Parent/Guardian: \_\_\_\_\_

## **Example Check Return Letter**

*Enclosed is the registration check that was sent for the Robot Camp. This year's camp is a much greater success than we had anticipated and we will schedule several more camps next summer.*

*Your application will go in our "first contact" file for next year's mailout, and you will be notified as soon as we schedule classes. Thank you for your support of the program and the interest you are taking in your child's education. I hope to see you next summer!*

*David Gula*

*Outreach Manager*

*FLATE, Florida Advanced Technological Education Center*

*HCC, Brandon Campus*

*[gula@fl-ate.org](mailto:gula@fl-ate.org)*

*[www.madeinflorida.org](http://www.madeinflorida.org)*

## Example Weekly Schedule

CAMP WEEKLY SCHEDULE									
July		8 to 9	9 to 10	10 to 11	11 to 12	Lunch	1 to 2	2 to 3	3 to 4
13th	M	Intro Orientation	Made in Florida Morning break	Lesson #1 Robotics: What Do You Know? (1hr)	Lesson #2 Brief History of Robotics (30 mins)		Lesson #3 Introduction to Robotics (1 hr)	Lesson #4 Full Speed Ahead (1-2 hrs)	Lesson #4 cont./ Hello My Name Is...
14th	T	Lesson #5 Wheels and Distance	Lesson #5 cont. Morning break	Team Challenge A The Bottle	Team Challenge A cont.		Team Challenge A Recognize winning team	USF Solid Works	USF Solid Works
15th	W	USF Trip	USF Trip	USF Trip	USF Trip		Review (4&5) Lesson #6 Right Face	Lesson #6 cont./Team Challenge B	Team Challenge B Obstacle Course
16th	Th	Lesson #8 Clap On Clap Off	Lesson #8 Clap On Clap Off Cont. Morning Break	Introduction to Team Challenge C Guided by Sound	Team Challenge C Guided by Sound		Team Challenge C Guided by Sound	HAS 200 demo/Free time	
17th	F	Review Lesson #10 Follow the Guidelines (1 hr)	Lesson #11 Faster Line Tracking (1 hr) Morning Break	Team Challenge D (2hrs w/ flex)	Team Challenge D cont.		Team Challenge E The Final Challenge		

## Example Parent Survey

Please take a moment to sit down with your child and complete the following survey circling the number that best fits the response. Some are for the parent to answer and some are for the participant.

\_\_\_\_\_ 1<sup>st</sup> Camp July 13-17    \_\_\_\_\_ 2<sup>nd</sup> Camp July 20-24    \_\_\_\_\_ 3<sup>rd</sup> Camp August 3-7  
1 = strongly disagree    2 = disagree    3 = agree    4 = strongly agree

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. The location used for the robotics camp was convenient.  | 1 | 2 | 3 | 4 |
| 2. The facilities used for the camp were accommodating.   | 1 | 2 | 3 | 4 |
| 3. The Lego robotics lessons were challenging.  | 1 | 2 | 3 | 4 |
| 4. The Lego robotics lessons were enjoyable.  | 1 | 2 | 3 | 4 |
| 5. There was enough time allowed to program the "Mindstorms" and complete the numerous challenges.                                      | 1 | 2 | 3 | 4 |
| 6. The "Made in Florida" DVD presentation and internet highlights were interesting and connected well with the camp's other activities. | 1 | 2 | 3 | 4 |
| 7. The SolidWorks introduction was challenging and interesting.   | 1 | 2 | 3 | 4 |
| 8. The field trip to the USF Engineering Lab was interesting and related to the other robotics camp activities.                         | 1 | 2 | 3 | 4 |
| 9. The Lego robotics instructors were knowledgeable and helpful.  | 1 | 2 | 3 | 4 |

## Example Camper Survey

Instructions: Read the questions carefully. Circle one best answer for each question.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
5	4	3	2	1	I will need knowledge of science for my future work.
5	4	3	2	1	This camp gave me information about careers in manufacturing.
5	4	3	2	1	Learning to program the robot by thinking logically will help me to solve other problems.
5	4	3	2	1	The camp helped me understand the use of math, science, and technology in industry.
5	4	3	2	1	I am now committed to making more effort for success in school studies.
5	4	3	2	1	The Made in Florida video and website helped me make the connection between the camp activities and real world careers.
5	4	3	2	1	The robot was easy to use.
5	4	3	2	1	The robot helped me to see how automated systems are programmed and controlled.
5	4	3	2	1	The camp lessons were interesting.
5	4	3	2	1	The robot challenges allowed me to use what I learned in the lessons.

# How to Print this Guide

*I just need something to write on...*

If you would like to print your guide in a “booklet” format (from the original pdf file), please use the following steps, you will need a printer that can print double sided documents:

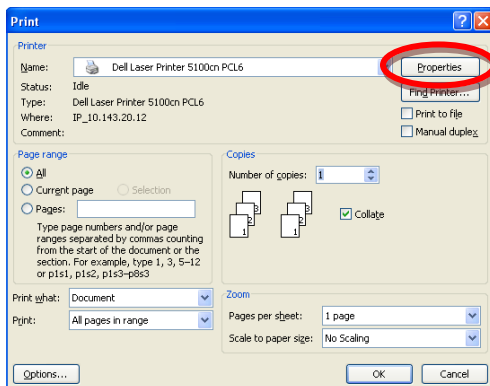
**Step 1 – select Properties** (*please make sure you are using a printer that prints double sided documents*).

**Step 2 – select Booklet/Poster/Mixed**

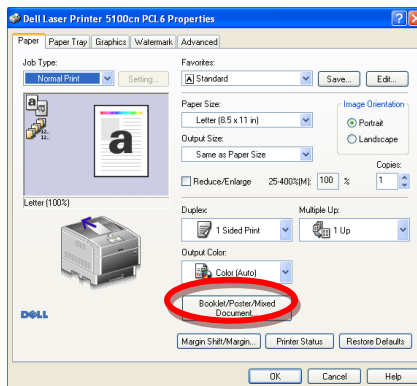
**Step 3 – select Booklet Creation and then click OK**

**Step 4—select Margin Shift/Margins, Print Position Tab, Center, then click OK**

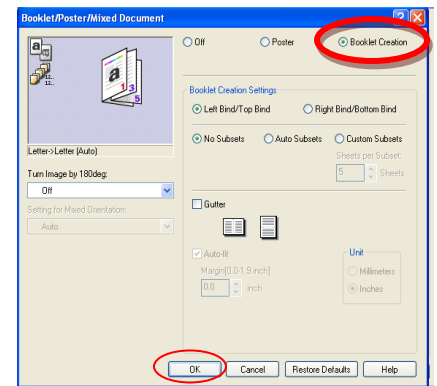
Step 1 – select *Properties*



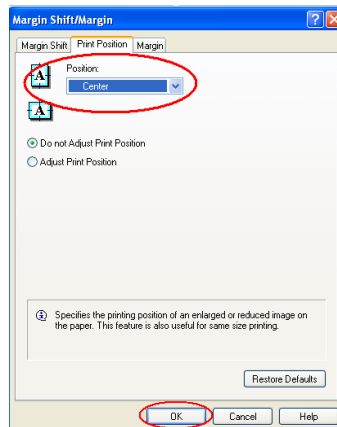
Step 2 – select *Booklet/Poster*



Step 3 – select *Booklet Creation*



Step 4 – select *Margin Shift/Margins*



# Contact us

*Questions, comments and success stories...*

## Florida Advanced Technological Education (FLATE) *Center of Excellence*

10414 E. Columbus Drive  
Tampa, FL 33619

Dr. Marilyn Barger  
P.I. and Executive Director  
813 259 6577  
flate@fl-ate.org

David Gula  
Outreach Manager  
813.259.6581  
outreach@fl-ate.org

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[www.fl-ate.org](http://www.fl-ate.org)

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