

FIRST LEGO LEAGUE COACHING

Tips for a great season!

INTRODUCTIONS

- Laurie Moulton, Coach of Webster Fellowship of the Brick
- 5th year coaching, 2nd year coaching current team
- Coached both a public school elementary team (4th and 5th graders) and a multi-age community team



THINGS YOU'LL NEED

BASICS

- Registration fees
- Robot
- Computer or iPad with EV3 software loaded
- Table
- Field kit
- T-shirts
- Buttons (20-25 buttons per kid)
- Project board
- Core Values poster

EXTRAS

- Field trips
- Extra LEGO parts and gears
- Extra motors
- Project expenses
- Snacks
- Celebration party

DELEGATE!

- Snacks
- T-shirts
- Buttons
- Pit decorations
- Incentives/prizes for kids

MEETING LOGISTICS

- Parent helpers
- Mentors (high school FIRST robotics team members can be great help with technical aspects of FLL teams)
- Work stations: project, programming, attachments, main robot, robot research
- Alternate whole group Project focus and whole group Robot Game focus

CORE VALUES

START WITH THE CORE VALUES

- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We know our coaches and mentors don't have all the answer; we learn together.
- We honor the spirit of friendly competition.
- What we discover is more important than what we win.
- We share our experiences with others.
- We display Gracious Professionalism and Coopertition in everything we do.
- We have FUN!

TEAM BUILDING IDEAS

- Foil boat filled with pennies
- Build a structure with toothpicks and marshmallows
- Odyssey of the Mind practice activities
- (Search for Odyssey of the Mind hands on spontaneous problems.)
- Startingpoints.com

CORE VALUES POSTER

- Talk about Core Values throughout the season
- Towards the end of the season, reflect on the experience as the team creates the Core Values poster
- Instructions for poster creation are in the Animal Allies Challenge Guide

PROJECT

PROJECT BASICS

- Student generated
- Research (include field trips, interviews, Skype call)
- Identify problem
- Solution
- Share with others
- Prepare presentation (skit and/or 5 minute oral presentation)
- Display boards

PROJECT EXAMPLE (EVOLUTION OF A PROJECT)

Senior Solutions



ROBOT GAME

MECHANICAL DESIGN

- Robot basic design: first year it is okay to modify a design made from instructions
- Teach basics about making a strong frame (triangles are stronger, add braces)
- Different types of wheels and tires
- Attachments
- Sensors (and shrouds!)
- EV3lessons.com is a good resource

THINGS TO REMEMBER

- Kids do the work
- All team members should know the attributes of the robot
- The best teaching tool can be a well-formed question!
- Trial and error (problems are the way we learn!)

PROGRAMMING

- Try to have all students try out programming
- Start with basic move blocks
- Teach the basics about sensors
- Remind students to add comments
- My Bloks
- Print off copies of the programs for the judges. (We like to place them on display boards.)

STRATEGIZE

- As a team, review the rules/missions
- Identify the points for each completed mission, and the ease of doing each mission
- Completing several easier missions reliably can be a better strategy than tackling a more difficult mission worth more points
- Errors compound as the robot moves away from the base
- As you plan which missions to complete, keep in mind that 4-5 missions is a good amount.

PROGRAMMING WORKSHOPS (“THE MOULTON METHOD”)

- Additional “programming workshops” and/or marathon sessions the weekends prior to the competition
- Pairs of kids sign up to work on programming the robot
- 45 minutes to 1 hour for each pair (that is about as long as they can focus productively.)
- 1 pair starts, next one picks up where the first pair left off

SAMPLE SCHEDULE

SAMPLE SCHEDULE WEEK 1

Meeting 1

- Sign ups (as families arrive, or at the end)
- Introductions (Don't forget name tags!)
- Animal Allies FLL video #1
- Introduce Core Values
- Brainstorm team name ideas/pick name
- Robot demo
- End with quick team building activity (if time)

Meeting 2

- Start the meeting with Animal Allies FLL video #2 (Robot Game)
- Vote on team name (if not chosen during the first meeting)
- Talk about logo design (what makes a good design?)
- Brainstorm ideas for a logo
- Provide paper, pencils, markers for drafting logo designs and have team members draw logo ideas (some artistic team members may want to work longer on their designs than others)
- Start building the mission models from the field kit/challenge set
- While kids are building the mission models, have them take turns voting on the logo design

SAMPLE SCHEDULE WEEK 2

Finalize/digitize logo design this week and order t-shirts

Look into button options (ordering pre-made or ordering supplies and borrowing a machine)

Wacky Buttons in East Rochester is a good source; they offer a coupon code for teams for 10% off: moreoff

Meeting 1

- Show FLL video (project)
- Read the project information from the Challenge Guide
- Brainstorm animal interactions they are interested in, and field trips for learning more
- Continue building the mission models

Meeting 2

- Review the FLL video (Robot Game)
- Introduce the EV3 software to the kids (show on a big screen if available)
- Start by introducing the features of the move block
- Introduce robot mechanical design basics
- Show examples of attachments
- Finish mission models if they are not done, or end with a team building activity

SAMPLE SCHEDULE WEEK 3

Meet on the weekend for your first field trip this week

Order buttons or get button materials and borrow a button machine; it is hard to borrow a button machine later in the season

Meeting 1

- Don't forget to review the Core Values
- Project: Have students prepare questions to ask at upcoming field trip
- Introduce stations (with extra parent helpers): a project research station, a station for building attachments, a station for building a robot (other possible stations: EV3 programming lessons station, robot design research station)
- Have students rotate through the stations
- End with a team building activity

Meeting 2

- Strategize about which missions you might want to try (our team votes after comparing all of the missions); this may take most of the meeting
- Review what we've learned about mechanical design
- Introduce new information about robot design (introduce sensors if you haven't already)
- Talk about what your robot will need to complete the missions you want to try

SAMPLE SCHEDULE WEEK 4

Possibly meet for a second field trip this week

Try to get a working robot this week. If need be, consider adding another work meeting for your smaller robot task force (remember to have more than one kid and more than one adult there).

Meeting 1

- Project: after field trip and other research, identify your team problem (if you haven't already)
- Identify field trips, speakers or resources that could give more insight into the problem
- Begin brainstorming solutions
- Set up learning stations again (with parent helpers)
- As kids move through the stations, notice if any kids are particularly gifted with mechanical design; tap those kids as your robot building task force

Meeting 2

- Review basics of mechanical design, and talk about what attributes your robot needs to complete your chosen missions
- Stations: research stations, and your robot building task force, and an attachment building station
- Review Core Values
- End with a team building activity

SAMPLE SCHEDULE WEEK 5

Meeting 1

- Project: perhaps you want to invite a special speaker to your meeting to answer questions related to your problem
- Look at solutions that have been completed already
- Work on an innovative solution
- Brainstorm ways to implement the solution and/or share the results

Meeting 2

- Robot game: review mechanical design as a group;
- Begin programming missions. Some students can work on attachments, and perhaps designing jigs
- Review Core Values
- End with a team building activity

SAMPLE SCHEDULE WEEK 6

Meeting 1

- Project: Consider inviting a guest to get input about the project (and share the idea)
- Begin talking about how to present your ideas with others in an interesting way (perhaps start developing a skit)
- End with a team building activity

Meeting 2

- Robot Game: programming and problem solving!

Extra weekend meeting: have pairs of team members work on the missions

SAMPLE SCHEDULE WEEK 7

Meeting 1

- Project: Develop skit/presentation, and/or share your idea at another venue
- Begin Core Values poster

Meeting 2

- Robot Game: programming and problem solving

Extra weekend meeting: have pairs of team members work on the missions

SAMPLE SCHEDULE WEEK 8

Meeting 1

- Finish Core Values poster
- Practice Project Presentation
- Final touches on missions

Meeting 2

- Spend the last meeting before competition practicing the missions that you have completed (at this point, don't try to add any new missions or make big changes)
- Run through your presentation one last time
- Remind the team of all that they have learned this season!

COMPETITION

PIT AREA

- Table provided (Some teams bring a tablecloth)
- Bring plastic bins to keep area neat (for coats, project presentation items, personal items)
- Display boards
- Folding chairs (not allowed at all venues)
- Power supply
- Robot (and corresponding parts/attachments)

ROBOT CARE AT THE COMPETITION

- Robot “garage”
- Don’t forget attachments!
- Bring a few spare parts (such as pins)
- Bring a computer and USB cable (but plan not to use it)

THINGS TO BRING TO THE COMPETITION

Remind team members to bring:

- team t-shirt
- spending money for food/snacks
- a small bag with books/entertainment items for down time (there are periods of waiting); a notebook to take notes/get ideas from other teams is a good idea
- water bottle
- folding camp chair for pit area (optional, nice for times when waiting if allowed for your venue)

MORE THINGS TO BRING TO COMPETITION

- large plastic bin (to contain items and keep “pit” area neat)
- project/display boards
- copies of EV3 programs
- Core Values poster
- tablecloth for pit table (optional)
- masking tape/sharpie (to mark things such as chargers—we learned the hard way that it is a good idea to label everything!)
- team info sheet

MORE COMPETITION ITEMS!

- hard copies of registration forms/consent & release forms for all team members
- copies of the tournament schedule
- team buttons
- computer
- computer cord/charger
- USB cable
- robot charger
- robot (in a plastic box to protect it)
- spare parts

AND MORE COMPETITION ITEMS!

- power strip and extension cord (may be provided, but not guaranteed)
- props for project presentation

Other important things:

- cell phone and charger
- LARGE cup of coffee!

OTHER ITEMS

SOCIAL MEDIA

- Consider setting up a **Facebook** page for your team
- **Twitter** can also be a fun way to connect with other teams
- (Check out fun FLL accounts such as @FLLchicken and @FLLpig)
- There are a lot of FIRST robotics teams on **Instagram** also!

Consider following Webster Fellowship of the Brick!

We have a Pinterest account with helpful links:

www.pinterest.com/WebsterNYFLL

MORE WEBSTER FELLOWSHIP OF THE BRICK LINKS

Google “Webster Fellowship of the Brick”

Our shortened username is WebsterNYFLL

- Twitter: <http://twitter.com/WebsterNYFLL>
- Facebook: www.facebook.com/WebsterFellowshipOfTheBrick
- Instagram: [WebsterFellowshipOfTheBrick](https://www.instagram.com/WebsterFellowshipOfTheBrick)
- Flickr: <http://www.flickr.com/WebsterNYFLL>
- Periscope: <http://www.periscope.tv/WebsterNYFLL/>

MORE SOCIAL MEDIA

- Periscope: <http://www.periscope.tv/WebsterNYFLL/>
- Snapchat: websternyfl1
- Google+:
<http://google.com/+FellowshipofthebrickBlogspotWebster>
- YouTube:
<http://www.youtube.com/c/FellowshipofthebrickBlogspotWebsterWebsite/>
- Blog: <http://fellowshipofthebrick.blogspot.com/>

FUNDING

- Best to do the bulk of fundraising during the off season
- Grants
- For school groups: check with administration, PTSA
- Cookbook
- Business sponsors
- Coupon books, etc.
- GoFundMe

END OF SEASON CELEBRATION

- Be sure to celebrate all that you've learned!
- The sooner, the better!
- Consider going out for dinner or ice cream after the competition
- Party (with snacks!)
- Certificates

REMEMBER TO HAVE FUN AS
YOU LEARN TOGETHER!

QUESTIONS?

Email Laurie at fellowshipofthebrick@yahoo.com