Practice #6

Preparation

- Find the Introduction to Programming Videos that you would like to show to your group to help them get started. I will have some posted on our website http://gillespie.agrilife.org > 4H > Robotics > Resources for FLL Coaches.
- Find the materials to play the programming with cups game – items should be in the room
- Become familiar with the Programming With Cups Game
- Locate scratch paper for tshirt design or blank tshirt templates in practice room (there will not be enough templates for every person on every team)

Beginning

5 min - Go over the plan for today's practice with the team

Explain that the team will review Core Value #2, watch two programming videos, program with their teammates using cups, start programming and work on the research project, and start designing the team's t-shirt.

5 min – Review Core Value #2 – We do the work to find solutions with guidance from our Coaches and Mentors.

This Core value deals with the idea that the design, construction, programming, research, and presentation are all done by the youth members of the team. The coaches just guide; all of the work must be done by the team members themselves.

It becomes really obvious during team interviews at the tournament if a coach has done a lot of the work for the team. It is hard because you may not like the missions that your team has chosen to attempt, or they might not have chosen your favorite research topic, but it is important that the kids make the decisions and do the work. Once you get them started with the robot programming, they will take off with it!

20 min – Watch Introduction to Programming Videos

6 min - Video from Waffles on the Touch Sensor - https://www.youtube.com/watch?v=5D7qCJu383k&list=PLJ9p4vPU79w6yjG7ndyn2xp-UMkSGFx9A&index=11

11min - Video from Darren Wilson on the Color Sensor - https://www.youtube.com/watch?v=8wzXIhEF7V4&index=5&list=PL0DNoa_Icfo_UGoEhfY0SNB5KZUJ0RYmN

Team Building Activity

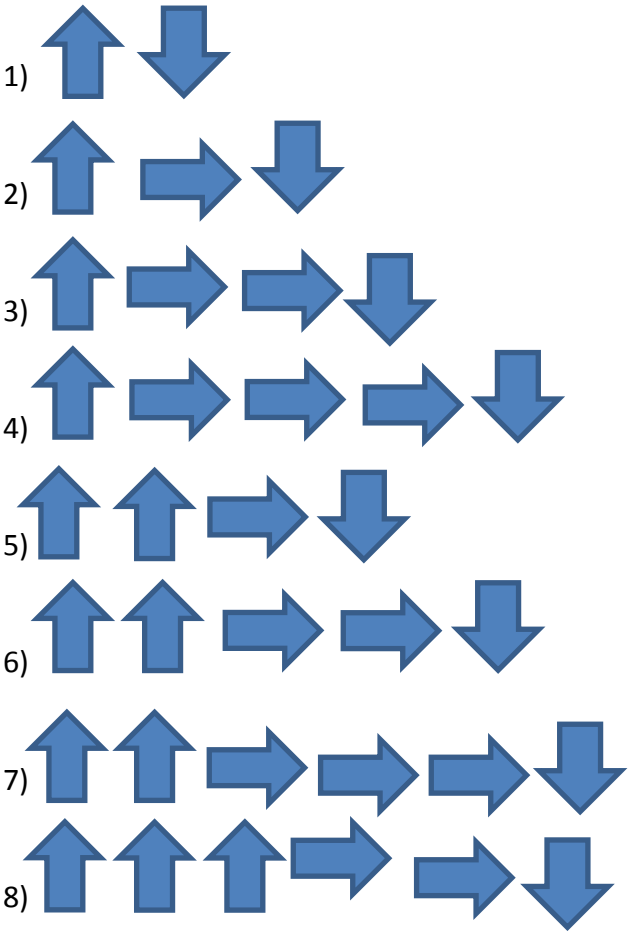
25 min – Programming With Cups

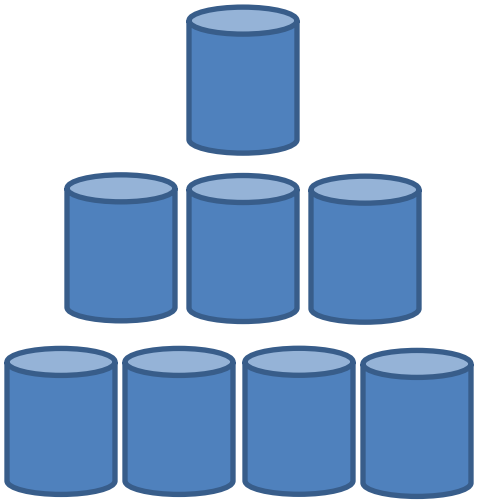
See video on website for an explanation. http://gillespie.agrilife.org > 4H > Robotics > Resources for Robotics Coaches.

The objective is for youth to learn programming by writing a program for their partner to use to stack cups.

1) Ask youth to stack cups in the design that he/she wishes to.

2) Then, ask them to use arrows and draw a program that another teammate can use to build that same design. Give them a sheet of paper and a pencil and tell them to start a new line for each cup. It might look something like the example below.





Break? - If you team is made up of mostly 4th or 5th graders, they might need a little break at this point, so you can run outside and play tag or something similar for a few minutes. If you have mostly older members, then you might be able to push on.

Main Part of Practice

55 min – Programming Robot Missions and Research Project

Group 1 – Program Robot Mission

Group 2 – Research Project

You don't have to do it this way, but I have found it helpful to divide the group in half for this next part of the practice. One group will pick a mission to work on and continue programming. The other group with work on their research project. Half-way through the main part of the practice, switch groups.

Wrap Up

10 min – Start Designing the Team Tshirt

You can use a blank sheet of paper or the blank tshirt canvas found in the practice room. Each team will need to choose a design, images, colors, etc…. The team only needs to come up with a design for the front of the shirts. The back will have the program's sponsors and the 4-H Clover logo.

Teams can use two colors in addition to the background color, and the printing company that we use can use images from Shutterstock. If your team chooses an image from Shutterstock, make sure to note the image # on the tshirt design.

Shutterstock - http://www.shutterstock.com/