STEM Inspires

FLL Team Timeline

Week 1

Build with the Spike Prime sets. Figure out how the pieces work. Becoming familiar with the lego set.

Read this flyer the project as a team:

Research

More than 70% of the Earth's surface is covered by oceans. Explorers throughout history have searched and studied the oceans to understand the impact on our lives. Society's interest in the oceans has led to innovations in technology and a greater appreciation for the complex relationship between life on land and under the sea. There is so much more to learn about marine life, ecosystems, and the effects humans have on ocean health.

This season, your challenge is to dive into a problem faced by people who explore the oceans.

Start here ...

Identify and research a problem related to exploring the oceans.

Read the Project Sparks to see if one of the problems outlined interests your team. The Challenge story might also give you some ideas. You can choose to design a solution for one of the problems listed or do some research to identify a different problem. Conduct research to explore existing solutions to the problem and to determine what challenges are still faced. You may want to create something new or improve on an existing solution; that's what innovation is all about.

You can research your problem any way you like, but try to use multiple sources. After your team has researched your selected problem, develop a plan to test your ideas. It might be necessary to change or update parts of your solution as you learn more from testing your ideas or sharing with others. You may even find that your ideas about exploring the oceans lead you to solutions applicable to life on land.

Think about ...

Review the rubrics and the judging process.

Plan to share your experience developing your solution, including what you learned in your research and testing. Your work on the research project will be evaluated by judges at an event at the end of your season. Review the rubrics to understand what you should focus on telling the judges. They will be interested in the progress you and your team have made this season, even if the work is still underway.

Create a prototype model or drawing that represents your innovative solution to help explain it to others and to the judges. Keep in mind that whether your problem is big or small, the impact it could have on someone, or something, could be huge.

Before the event ...

Prepare a live presentation to communicate your solution.

Your presentation should explain the problem you selected and the work you did to address it. Get creative! Think about how your team will summarize your work. The judges will ask questions when they want to know more and will provide the team with feedback. Make sure your whole team is involved in sharing your progress. Check out our event preparation video found in the season resources.

Research Resources

6 Engineering Notebook | Getting Started

Start having discussions about the project. What do you know about the deep sea? What problems can you think of associated with exploring it? Do some research, and

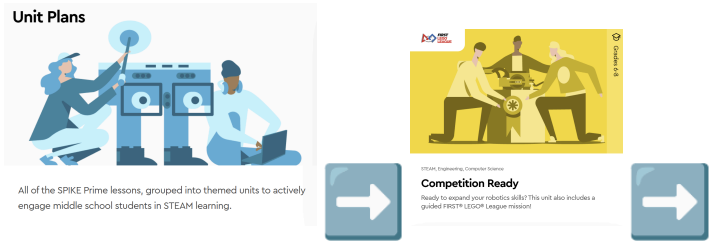
feel free to watch the videos under INSPIRATION FOR YOUR RESEARCH at this webpage: https://www.first-lego-league.org/en/2024-25-season/challenge-resources/research.

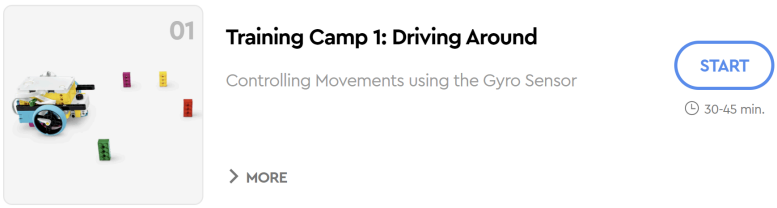
Brainstorm team name ideas!

Watch the project how to to learn all about the project: Project How-To & Project How-To 2

Download the Spike App :SPIKE™ App Download | LEGO® Education

Start following the FLL Competition ready Unit Plan. Build the small dummy robot in the plan.





Week 2

Decide on a **team name**!

Go through this document, focusing on the part about RESEARCH as a team: https://www.first-lego-league.org/en/2024-25-season/challenge-resources/season-documents

Keep thinking about the project. Narrow down the focus. What part of ocean exploration is most exciting? Studying animals, plants, materials, or something else?

Have your team **research** all about that type of exploration and the problems with sharing it.

Continue with the FLL unit plans. **Finish** Training Camp 1 and start Training Camp 2.

02

Training Camp 2: Playing with Objects

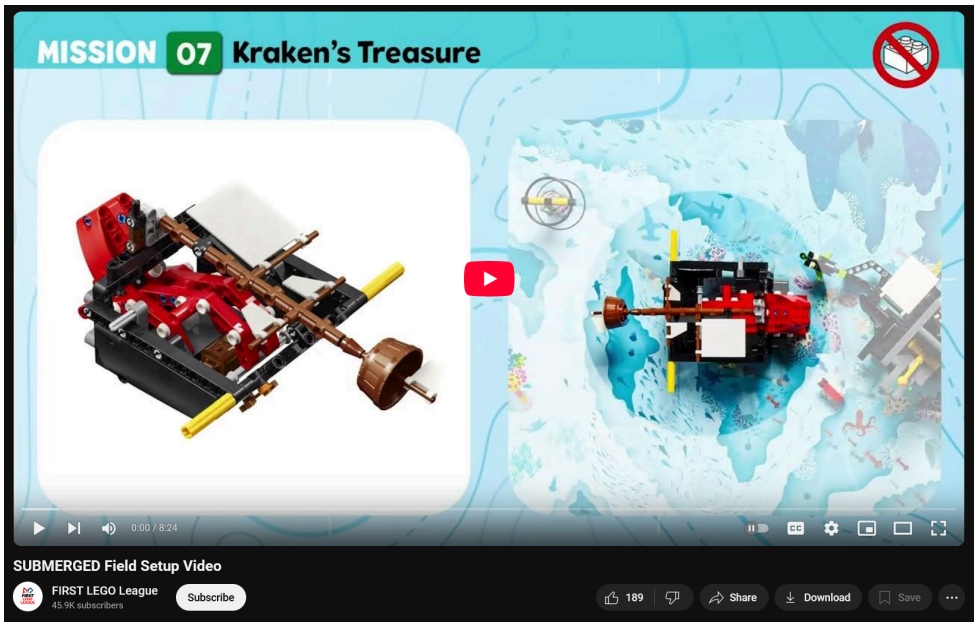
Controlling Movements Using the Distance Sensor

START

30-45 min.

MORE

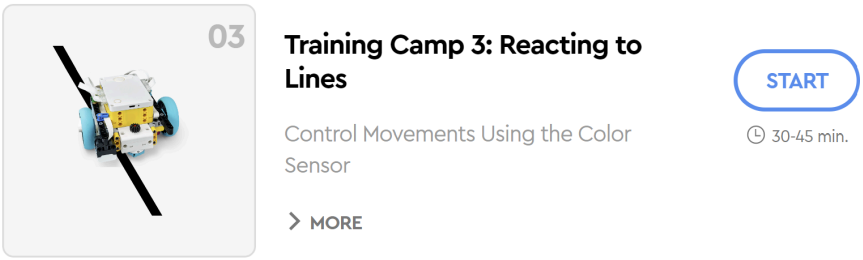
Watch as a team to learn about the game field:
https://www.youtube.com/watch?v=Kk8jnsBgl9o



Keep researching the project. **Decide** on the problem you want to focus on. Think about solutions. How can tech help make ocean exploration easier or more fruitful?

Finish Training Camp 2 and start (and try to finish) Training Camp 3

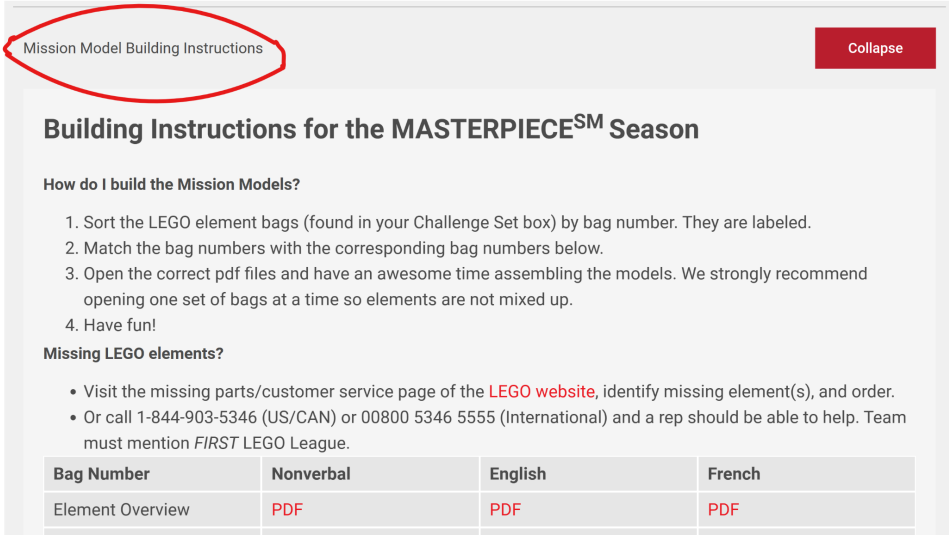
STEM Inspires



Week 3

Decide on your Project problem. Start researching all the possible solutions

Build your mission modules if you have not already: [Season | FIRST LEGO League] (Go to Mission Model Building Instructions). Whats App Amelia (+1 772 262 0117) to confirm you are opening the field so she can provide some guidance!



Work on guided the guided Mission challenge

Keep researching all the possible solutions to your project problem. Reach out to experts online. **Email** local energy companies or experts. **Find mentors** in the energy field.
Decide on your solution. Start writing about how your solution would work, how are you going to implement your solution into the real world? Start designing a prototype.

STEM Inspires

Finish building your mission modules if you have not already: [Season | FIRST LEGO League](#) (Go to Mission Model Building Instructions)

Work on the Assembling and Advanced Driving base:

Assembling an Advanced Driving Base

Practicing building techniques

START

90-120 min.

MORE

Week 4

Think about which **mission modules** you want to try and solve.

Work on using MyBlocks with the My Code, Our Program plan.

My Code, Our Program

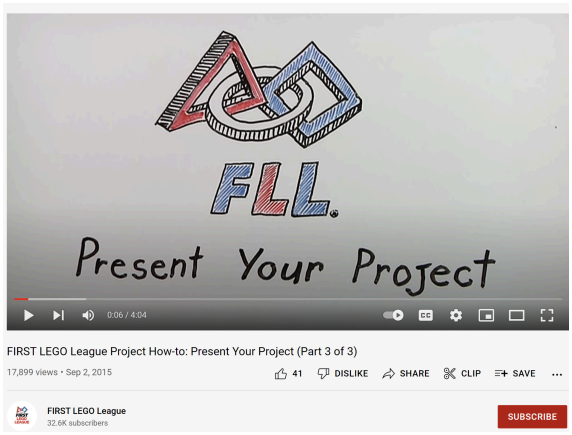
Programming Using MyBlocks

START

90-120 min.

MORE

Watch this video and think about your Project Presentation: [Project Presentation](#)



Keep on working on **writing** up your project and **decide** how you want to build your **prototype**.

Finish up the unit plan by working on Time for an Upgrade and Mission ready.

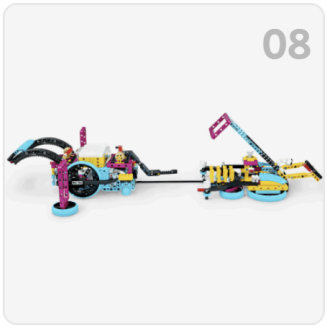
Time for an Upgrade

Using modular tools

MORE

START

90-120 min.



Mission Ready

Problem-solving as a team

MORE

START

120+ min.

Week 5

Continue to **work** on your project

Think about **sponsorship**. Reach out to some local companies to try and fundraise to buy a team t-shirt or hat. **Email** the sponsors explaining who you are, what you are doing, and what you are asking for.

Decide on your **robot design**. How do you want to build your competition robot? Look at some examples online: Robot example 1 & Robot Example 2

Watch some example on how to solve the missions: Solving Masterpiece Missions - YouTube

Build some **attachments** that will solve the missions.

Take a look at the FLL rubrics: Rubrics

Remember this is how the judges will be grading you. They will assess your team and give you marks in each of the categories.

Start writing your project presentation script. Do you want to have everyone give a speech? Do you want to make it a play? Do you want to make it a song? There are many options! Make sure you include your prototype.

Finish your robot design.

Program some mission model runs.

Decide on who will be the “technicians” (the two people who will be at the robot table playing the different robot runs and changing attachments) You can also decide to have different technicians during different runs if there are different people working on different runs.

Week 6+

Plan your **Robot Presentation**. What features of your robot are particularly interesting? What do you want to **show the judges** that will impress them?

Practice your project presentation so that it is **exactly 5 minutes long**.

Work on **solving missions** and **programming runs**. Make sure your runs are less than 2 minutes and 30 seconds!

Have the **2 technicians practice** the robot runs making sure they are under two minutes

Practice your project presentation. Make sure you have it down solid and you are showing all the important information. Take a look over the project rubric again to make sure you cover all the topics.

Think about **making a poster board** showing what your team has been working on. On your poster board you can explain all about your project, your robot, and your team. Also think about how you want to set up your table at the competition. **Each team will have a table to showcase whatever they want (project, poster board, robot) you decide!**

Practice your robot presentation. You want to make sure you highlight the important, impressive aspects of your robot in **5 minutes.**

Make sure **everyone talks** in each presentation!

Work on **solving missions** and **programming runs**. Make sure your runs are less than 2 minutes and 30 seconds!

Before the Competition

Run through your project and robot presentations!

Make sure you have your robot and it is fully charged. **Bring** the battery charger and some replacement parts in case some pieces break at the competition.

Make sure you have **all your materials** you want to use to present to the judges. You want your **prototype for the project and poster boards**.

Get ready to have some fun! You got this!