



## Getting Started with *FIRST* at Home

Welcome to *FIRST*®!

Whether you're a classroom teacher, a parent, or a coach/youth leader, we know the disruptions to learning you've experienced this year have been an unprecedented challenge. Students crave emotional connections and active learning opportunities; worksheets just don't cut it. So how do you engage students in a remote learning environment, when education is so much more than teaching facts and figures?

The *FIRST* Education team developed this 12-session curriculum series to be adaptable to many remote learning environments, including virtual summer camps, team meetings, and parent-child at-home learning. Throughout these lessons, you'll engage students in developing their STEM skills, creativity, problem-solving, and confidence-building.

We kick off with an exploration of the *FIRST* Core Values: Discovery, Innovation, Impact, Teamwork, Inclusion, and Fun. They are at the heart of everything we do at *FIRST* to create meaningful STEM experiences with connections to social and emotional learning.

We hope this offers a fun and meaningful way to engage your students. Let us know what you and your students think of this series by sending a note to [FIRSTeducation@firstinspires.org](mailto:FIRSTeducation@firstinspires.org).

Sincerely,

Libby Simpson, Director, *FIRST* Education

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### ACTIVITIES OVERVIEW

Each activity is developed for specific age and grade-level bands and align with *FIRST* programming. The average times to complete are listed below.

***FIRST*® LEGO® League: Discover** – Grades PreK-1; Ages 4 to 6

Activity time 30 - 60 minutes

***FIRST*® LEGO® League: Explore** – Grades 2-4; Ages 6 to 10

Activity time 45 - 90 minutes

***FIRST*® LEGO® League: Challenge** – Grades 4-8, Ages 9 to 16

Activity time 60 - 120 minutes

***FIRST*® Tech Challenge and *FIRST*® Robotics Competition** – Grades 7-12; Ages 12 through 18

Activity time 60 - 120 minutes

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## WEEKLY TOPIC SUMMARY

- Week 1 – Explore *FIRST* Core Values.
- Week 2 – Use coding and programming to solve a problem or learn a new programming language.
- Week 3 – Create a design or use computer aided design software to show your solution to a problem.
- Week 4 – Dive into the physical components of robots exploring simple machines, electronics or mechanics.
- Week 5 - Use creative resources to solve an engineering design challenge.
- Week 6 – Put it all you have learned to work in a culminating activity or mini capstone project.

The series will repeat for an additional 6-weeks with new activities using the same topics.

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## HOW TO USE *FIRST* AT HOME

The activities presented have been created to support the continuation of STEM learning and skill development. These can be combined with other activities to deepen and extend learning or completed as a single project. They can be completed by individuals, groups or teams. The incorporation of the core values, especially FUN, in each activity allows you to bring the *FIRST* experience and learning to life at home!

## STRATEGIES FOR USE

The educational materials contain two parts: the lesson plan and design brief. The lesson plan is for the parent, teacher or coach to use in planning and facilitating the activity.

The design brief is for the student(s) completing the activity. In presenting this content to your students, you should take on the role of facilitator and allow your students to access the material, ask questions and present their solutions.

Our partners at LEGO® share [strategies for best teaching practices at home.](#)

## PRESENTATION OF CONTENT

The teacher lesson plan contains the following elements:

<ul style="list-style-type: none"><li>• <b>Activity summary</b> - suggested age range, grade level and <i>FIRST</i> program connection</li><li>• <b>Activity outcomes</b> - states knowledge, skill and abilities students should demonstrate upon completion</li><li>• <b>Relevance Matrix crosswalks and core value connections</b> - will show connections to related concepts and highlight core values used</li><li>• <b>Key Vocabulary</b> – highlights important words to share with students during the activity</li><li>• Materials and supplies needed for this activity</li></ul>	<ul style="list-style-type: none"><li>• <b>Guidance Set-up</b> - notes for specific instructions on delivering content</li><li>• <b>Student or team actions</b> - overview of student actions</li><li>• <b>Go Further!</b> - will contain ideas to take learning beyond this activity or connect to other similar types of projects, activities or challenges</li><li>• <b>Evidence of Achievement</b> - will have recommendations for measure of success in knowing if the student, group or team has been successful, will also contain information on connecting learning to the <i>FIRST</i> community</li></ul>
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The student design briefs are written in an engineering design process format to guide students through the steps in solving the problem or working through the content presented.

The content has the following components for students to explore:

<ul style="list-style-type: none"><li>• <b>Problem Statement</b> – provides authentic real-world problem that frames the activity</li><li>• <b>Criteria and Constraints</b> – are the requirements to be successful or limitations on the design</li><li>• <b>Building the Background &amp; Brainstorming</b> – some activities will have connected content to build background knowledge or aid in brainstorming</li></ul>	<ul style="list-style-type: none"><li>• <b>Design Sketch</b> – area to sketch design ideas, this can be done outside of the box</li><li>• <b>Reflection Questions</b> – students and teacher reflect on the learning and project activities</li><li>• <b>Go Further!</b> – will contain ideas to take learning beyond this activity or connect to other similar types of projects, activities or challenges</li></ul>
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This content is designed using [project-based learning design elements](#).

## ASSESSMENT AND SHARING

If you need to assess student work, the Evidence of Achievement section will have guidance. Some activities will have the opportunity to make it loud and will connect to *FIRST* social media. Check the Go Further! Section for that information.

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