Project:

EZ First Flyers

CLASS CURRICULUM GUIDE

FLITE TEST STEM

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Instructor's Notes:

- We highly recommend the instructor build and fly the EZ First Flyers models prior to having the students do so. Be sure to watch all build videos before the students do so you can better anticipate how to best ensure student success at each step of the way.
- These three First Flyer models could be the first exposure your students have to model aviation and gliders; don't assume they know how to throw a glider correctly (keep it level, throw it like a dart and not a football, don't throw it too hard or too soft...etc...) Practice throwing gliders yourself so you can explain the technique to your students.
- We recommend using the suggested amount of time as a minimum; how that is arranged is flexible. For example, 8 days of 1.5 to 2 hour sessions in place of 15 one hour sessions.

Need more resources?
Visit **ftstem.com**

How to Use This Guide

Thank you for choosing a Flite Test STEM product!

Welcome to the Flite Test STEM project! Our team has worked hard to provide you—whether you're a student, parent, or teacher—with everything you need to successfully complete this rich and exciting hands-on experience. By the end of this project, students will have gained practical skills in crafting, configuring, and flying a model aircraft. Here's how to get the most out of this guide.

For Students, Parents, and Teachers

Comprehensive Support: We understand the needs of different learning environments. This guide is designed to offer clear, easy-to-follow instructions, whether you're working at home or in a classroom setting.

Instructor Guide: Teachers will find this section helpful for organizing and structuring class activities. It includes lesson plans, pacing suggestions, and tips for managing the project in a group setting. This guide is your go-to resource for making the project a valuable educational experience.

Step-by-Step Guide: Parents or students working at home can use this straightforward guide to walk through the build process independently. It breaks down each stage into simple, manageable steps and ensures that every aspect of the project is covered. Students who wish to work on the project independently will find the instructions detailed and easy to follow.

We're excited for you to embark on this adventure and can't wait to see what you'll create! Enjoy building, learning, and flying!

LESSON 2.1

FT EZ First Flyers
Wing Configurations

15 DAYS | 45-60 MINUTES PER DAY

Evaluation methods for Lesson 2.1: Quiz, Test/Performance Task

Goals:

- To understand basic aerodynamic vocabulary and concepts
- To understand how different wing types affect flight characteristics
- To understand and demonstrate what constitutes a proper glider slope.
- To understand the purpose of differential thrust.
- To obtain The Recreational UAS Safety Test (TRUST) certificate to legally fly recreationally. (instructors should also obtain TRUST certification if they will be operating RC aircraft)

Materials & Tools Needed for Lesson 2.1:

- Flite Test EZ First Flyers Pack
- EZ 2 Ch. Power Pack and 3 AA batteries
- Hot glue gun. glue sticks, and adhesive tape
- If you intend to use our Build Videos, a computer/smartphone with internet access.
- Scratch paper and pencil
- Cardboard or work mat (to keep hot glue off the table or work surface)

Next Step: Schedule

Schedule

Day 1 – Introduction, Vocabulary, and the Forces of Flight

- [ ] A. Read and discuss vocabulary terms for Lesson 2.1 (Appendix 1). Optional - Print and hand out vocabulary to students.
- [ ] B. Discuss the Four Forces of Flight (Appendix 3) so that students can answer:
  - a. What force keeps the airplane on the ground or makes it fall to the ground? (gravity)
  - b. What force makes the airplane move forward? Without a motor, how will each of the EZ First Flyers aircraft move forward? (thrust)
  - c. What force keeps the airplane in the air? (lift)
  - d. What force causes the airplane to slow down in the air? (drag)
- [ ] C. Discuss the parts of an airplane (Appendix 2)
- [ ] D. Discuss the Pitch, Roll, and Yaw graphic (Appendix 6), one quick activity that can work well with younger students is to have them stand up and spread their arms out. Instruct them to move their body around the Pitch, Roll, or Yaw axis (e.g. roll left...they will lean to the left, lower their left arm and raise their right). Demonstrate this both facing the same direction as the students and facing towards them so they can begin to understand that those motions will appear reversed if their aircraft is flying towards them.
- [ ] E. Discuss glide slope graphic from Appendix 5 and how center of gravity affects flight (nose heavy? Tail heavy?) How will we adjust the CG on our EZ First Flyers aircraft?

- [ ] **MILESTONE:** DAY 1 - COMPLETE

Day 2 - Getting Certified for Recreational Flight

- [ ] A. Review vocabulary from Day 1
- [ ] B. Discuss the concept of differential thrust (Appendix 7).
- [ ] C. Discuss the differences between the three First Flyer models (Appendix 3).
- [ ] D. Have students take the free TRUST test at Pilot Institute and print certificate when completed (Instructor Note - the instructor should obtain this certificate if they will be operating an aircraft)

- [ ] **MILESTONE:** DAY 2 - COMPLETE