



Take Flight

Mission 1: Communication



Mission 1: Overview

Mission Goal: Understand how communication skills lead to success in STEM careers.



Overview

This mission is all about communication, because whether students know it or not, communication is a foundational skill for success in STEM. The goals of this mission are to build students' communication skills by ensuring they can use precision in language and detail in descriptions. This mission also introduces key vocabulary that students will need in future missions.

Video Overview

Watch a [video overview of Mission 1](#) to learn key strategies for making this unit successful.

Materials

- ☐ [Mission 1, Challenge 1 Deck](#)
- ☐ [Mission 1, Challenge 2 Deck](#)
- ☐ [Mission 1 Student Portfolio](#)
- ☐ [Mission 1 Certificate](#)
- ☐ Pairs of identical sets of Lego pieces, about 10-14 pieces in each set

Challenge 1: Lego Communication Challenge 45 minutes

[Standards](#)

Challenge Goal

Build communication skills, precision in language, detail in descriptions, including orientation.

Engagement Move: Affirmations and Strengths & Values

Play the [Affirmation Song by Snoop Dogg](#) to get your students thinking about affirmations, or use the [self-affirmation packet](#) to develop your own affirmation activities at any point in the Take Flight journey.

Work together with students to complete the affirmations activity in the [slide deck](#).

Career Video

Learn about the [career case of Zibi Turtle](#), a planetary scientist. Discuss:

- What did you see? What did you notice?
- What STEM skills do you think are important in this career?
- What are other careers in the field of space?
- What is something about this career that you want to know more about?



Impact on our World

Look at the Lego ads with students and optionally read the article about [Lego's marketing materials](#).

- What is the evidence that helps you decide if Legos are designed to appeal equally to boys and girls?
- What stands out for you in the set of pictures? What differences do you notice?

Activity

Students will practice communication skills by attempting to describe and build a lego design. There are two roles: Navigator and Pilot. You will switch roles half-way through the activity.

1. Sit back-to-back
2. Navigator: Without showing your partner, build a design using your Lego pieces (2 minutes)
3. Navigator: Facing away from your partner describe your Lego design. (3 minutes)
4. Pilot: Facing away from your partner, use your partner's description to build the same design with your Lego set.
5. Turn and, with your partner, compare your Lego designs.
6. Repeat, switching roles.

Challenge 2: Flying Orb

45 minutes

Standards

Challenge Goals

- Learn about the basic variables for flying drones, including lift, thrust, tilt, and air flow.
- Build on the communication practices that are important for STEM success by learning how to create and communicate safe flying practices.

Impact on Our World

The percentage of women drone pilots in the US has almost doubled in the last five years, from 3.9% in 2016, the first year of reporting, to 7.6% at the end of 2021.

In 1906, E. Lilian Todd was the first woman to design an airplane. Determined to fly it herself, she applied for a pilot's license in 1909, but was denied. And so on November 7, 1910 Miss Todd's plane, piloted by Didier Massson, flew for 20 feet over the Garden City aviation field near Mineola, Long Island, New York.

[Watch an animated video of E. Lilian Todd's amazing story.](#)

Warm Up: Flying Orb Overview

Jeff Reviews4U demonstrates his learning process for managing how to control the flight of a Flying Orb. Show or share [this video](#) to get students ready for successes and challenges as they work with the Flying Orb.

- What did you see? What did you notice?
- What vocabulary terms could you see at work?
- How did one of the vocabulary terms make a difference in how the Flying Orb was moving?

Activity

Part A: Flying Orb - Whole Group

The goal of this activity is for students to experience how the Orb moves when passed from person to person across a space.

- Where: a large space (gym or outside, for example)
- Set up: Charge the Flying Orb in advance
- Activity: Everyone gathers in a large circle. Instructor starts. Say a student's name aloud and pass the Flying Orb to that student. Each student should get the orb at least 1 time, and no more than 2 times.

Based on flying the Orb, what rules do YOU think are important to make sure everyone and everything is safe while flying drones?

Step 1: Note some of your thoughts. Here are some starters to get your ideas flowing:

- When the teacher says "stop," then...
- When flying, make sure people know...
- When flying, people and objects...
- The distance/height between your flight and other teams'...
- The distance/height between your flight and objects...
- Before and during flying, let others know...

Step 2: Share ideas as a whole group.

Step 3: As a group, brainstorm rules for safe flying.

Part B: Flying Orb - Small Group

Goal: Fly the Orb from the starting point to the finish point in the fastest time.

- You will be in a team of 5 people.
- Each team member must catch and pass the Orb at least 2 times
- No team member can catch or pass the Orb more than 3 times.
- If a team member touches the Orb more than 3 times, the team must go back to the starting point and begin again.

Landing Assessment

Students should complete the [Mission 1 Landing Assessment](#).

Please note that this link is NOT a template; the data will go directly to the CAST Research Team to help improve our curriculum. If you would like access to your students' responses please email us at TakeFlight@cast.org

Mission 1 Certificate

Congratulations! You and your students have finished **Mission 4 of Take Flight**. We hope you and your students learned a lot.

On completion of the Landing Assessment, students will receive a Certificate of Completion for Coding. Here is the [Communication Certificate](#) to celebrate students' achievements. Keep flying!

