

Astronaut Challenge

Space Mailbox Engineering Competition



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General Rules and Regulations

Student Astronaut Challenge

Space Mailbox Engineering Design Competition

INTRODUCTION:

Blue Origin **Club for the Future** currently sponsors the “**Postcard into Space Program**”. Any student can write or draw their vision on a postcard for what they think the future of life in space will look like or any other message they would like to send to space. Postcards are sent to **Club for the Future**, that will support its launch it to space and back on a New Shepard rocket, and return stamped with "Flown to Space." Students can send them as many postcards as they like and Blue Origin will fly them all. <https://clubforfuture.org/missions/>

In this challenge, students will design and construct a portable mailbox for their school to receive the postcards so they can be gathered and sent to **Club for the Future**. Please note that the Mailbox is **NOT** going into space, just the mail!

ENTRY GUIDELINES

Student must design and build a mailbox according to given specifications provided for the competition and the design must incorporate the given theme and supporting organizations.

THEME

- A. This year the visual appearance of the mailbox must encompass the subject “**Space Exploration, the observing and monitoring of Earth’s Environment**”. Students may select whatever artistic expression they feel best demonstrates this concept.

Mailbox Design

- A. Each team must construct a **functioning life size** mailbox and present the **actual mailbox** for judges review at the competition.
- B. Since the mailbox must be transported by the teams to the event, the mailbox **MUST** be designed to be portable and fairly easy to assemble and disassemble (the amount of time to assemble the mailbox will not be timed but should be reasonable).
- C. Teams will be **required** to demonstrate the assembly as part of their presentation.
- D. The mailbox must be easy to use, and constructed of **sturdy material** such as wood, plastic, fiberboard, etc.so that it can withstand both being assembled and disassembled as well as withstand use in the school setting. The security of the postcards within must also be considered and the ease of mailing and mail retrieval. Teams that present mailboxes made of flimsy material or that are not constructed to meet the required dimensions and specifications may be disqualified from the event.
- E. The mailbox must be designed to closely approximate the following specifications 15"W x 15"D x 40"H within the limitations of the artistic design chosen. Floor base plates needed for stability are not included in these dimensions and are up to the discretion of the design team. The area

that receives the postcards may **not be less** than 50% of the overall mailbox dimensional volume. The mailbox must also incorporate in its design the following two logos:

- a. The participating School's emblem or logo
- b. Blue Origin and/or Club for the Future logo

DESIGN PLAN

A comprehensive written design plans must be provided that could be used to replicate the mailbox. This includes specific design components to scale, dimensions, and various colored pictures or perspective drawings as necessary. Five hard copies of the design plan will be needed to be provide to judges for their review. Assembly instructions should be included.

PRESENTATION

The student presentation will be 30 minutes in duration and consist of three parts:

1. A narrated demonstration of the assembly of the mailbox.
2. A Microsoft Power Point presentation of the development and construction process used to make the mailbox and a comprehensive review of the design plan to include the artistic components of the design.
3. A question-and-answer period

Note: Internet service may be limited so students should bring a copy of their presentation on a flash drive. All team members must actively participate in the presentation.

PROTOTYPE RESTRICTIONS

- A. Chemicals and any liquids (including household cleaning products and outdoor/pool chemicals), soils, food, gases, bleach, batteries, open flames, and explosives may not be used.
- B. Controlled or illegal substances, including over the counter drugs, prescription drugs, alcohol, or tobacco, may not be part of the prototype.
- C. Knives, syringes, or any sharp objects are not to be used.
- D. Any item that can be easily pulled off and swallowed cannot be used.