

TEACHER LESSON PLAN - SEND POSTCARDS TO SPACE**HOW ASTRONAUTS VISUALIZE DATA****INTRODUCTION**

In this lesson, students explore the importance of data as it relates to astronauts, space missions, and our world. This self-paced Excel Online activity introduces students to visualizing data using charts. Students will work with a variety of data sets related to space and investigate the types of charts that best help them analyze and understand the data. Complete the five mini-lessons including sending a postcard to space, to secure a Space Data Badge.

LEARNING OBJECTIVE

Use different types of data visualizations to analyze and interpret information related to space.

INSTRUCTIONS

- Open the How Astronauts Visualize Data workbook and familiarize yourself with how to use it by reading the information in the Contents worksheet of the workbook.
- Complete the guided steps in the workbook for each of the worksheets prior to introducing the activity to your students.
- Guide your students in opening the workbook, introduce your students to the lesson using the Introduction worksheet and show them how to navigate the workbook to earn their Space Data Badge.

LESSON EXTENSION

Send a postcard to space! Have your students complete the Club for the Future activity located in the extensions worksheet of the How Astronauts Visualize Data Excel Online workbook.

STANDARDS**NGSS**

MS-ESS1-3. Analyze and interpret data to determine similarities and differences in findings.

CCSS.MATH.CONTENT.7.RP.A.2

Recognize and represent proportional relationships between quantities.

ISTE

5b - Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

REFLECTION

Have students complete the Student Journal and use their responses in a group discussion to summarize the lesson.

SEND POSTCARDS TO SPACE



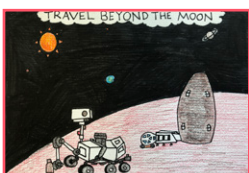
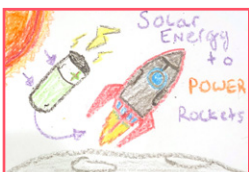
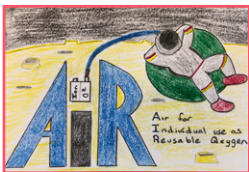
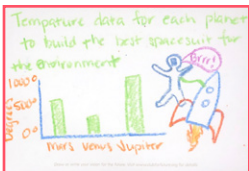
"Hi, my name is Christine Reilly and I'm an aerospace engineer at Blue Origin on the Human Landing System team, working to help the Artemis generation land the first woman on the Moon."

Engineers gather data on Earth by testing our designs, which helps us understand and improve how our spacecraft will transport people to the lunar surface and deliver payloads. We also use data collected on past missions, such as information about the Moon's landscape and environments, to plan our landings in exciting areas that have never been visited and stay for longer. As you think about humans venturing further into space for longer periods of time, it is going to be important to continue to collect and analyze data to help us make informed decisions now and to share what we learn with generations to come.



HOW WOULD YOU USE DATA TO FURTHER HUMAN EXPLORATION INTO SPACE?

YOUR MISSION: After completing the, How Astronauts Visualize Data activity in Microsoft Excel, answer the question, how would you use data to further human exploration into space? Once you've developed your idea, cut out the postcard below and draw or write your idea on the blank side. Put your address and a stamp on the front, place it in an envelope and mail it to: **Club for the Future / PO Box 5759 / Kent, WA / 98064**. Blue Origin will send it to space and back on its New Shepard rocket. The postcard will then get stamped 'Flown to Space' and mailed back to you for a special space-flown keepsake.



On the blank side, draw or write how you would use data to further human exploration into space. On this side, write a message, your address, and add a stamp.

We may want to post your artwork online! Have your parent or guardian sign below to grant permission.

Parent/guardian

Parent/guardian (printed)

www.clubforfuture.org

CLUB FOR THE FUTURE

Place
Stamp
Here

Your Name

Your Street Address

City, State / Province

Zip Code

Country



POSTCARD INSTRUCTIONS

SEND A POSTCARD TO SPACE

Club for the Future is asking students from around the world to send us postcards with their dreams of the future and vision for life in space answering the question:

“HOW WOULD YOU USE DATA TO FURTHER HUMAN EXPLORATION INTO SPACE?”

Once you have your idea, draw or write it on a postcard, and mail it to the Club using the instructions below. The Club will put your postcard on a Blue Origin New Shepard rocket and launch it to space. Upon your postcard's return from space, it will be stamped “Flown to Space,” then mailed back to you as a special space-flown keepsake.

ADDRESSING YOUR POSTCARD TO SPACE (AND BACK)

01



USE A 4x6" (10x15cm) POSTCARD, NOTECARD OR DOWNLOAD AND PRINT THE TEMPLATE.

02



ON ONE SIDE, DRAW OR WRITE YOUR ANSWER FOR WHY YOU THINK EARTH NEEDS SPACE.

03



ON THE OTHER SIDE, WRITE YOUR RETURN ADDRESS AND ADD A STAMP.

04



CLUB FOR THE FUTURE
PO BOX 5759
KENT, WA 98064 U.S.A.

PLACE THE POSTCARD IN A STAMPED ENVELOPE ADDRESSED TO CLUB FOR THE FUTURE. IF YOU HAVE MULTIPLE POSTCARDS, PLACE THEM IN A LARGE ENVELOPE OR BOX AND MAIL THEM TO THE CLUB IN BULK.

05



DROP THE ENVELOPE IN THE MAIL. THE CLUB WILL LAUNCH IT TO SPACE ON A BLUE ORIGIN NEW SHEPARD ROCKET AND RETURN IT TO YOU!

WWW.CLUBFORFUTURE.ORG

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