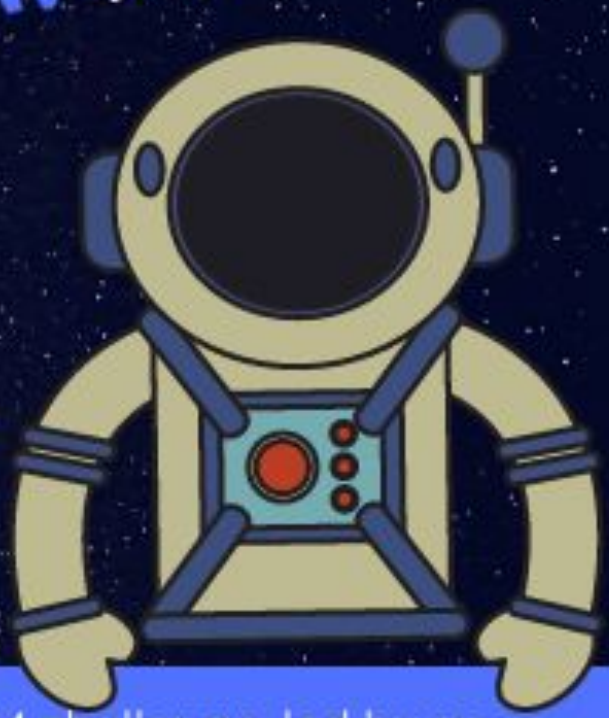
Vivify STEM Education

bit.ly/vivifystemvideos

STEM SPACE AT HOME

Space Suit Design Challenge



A video series with a fun STEM challenge, led by an engineer, and using materials you can find at home.

#STEMspaceathome

Teacher Notes

STEM Space At Home Activity Guide

Thanks for joining the STEM Space At Home challenge! Here is how to participate:

1. Watch the engineering challenge video and mission overview: Click here to watch the video and view additional resources.
2. Use the following activity guide to complete the challenge.

   Option 1: Print the following pages.

   Option 2: Use the editable Google Slides (see below).
3. Post and view other designs using #STEMspaceathome.

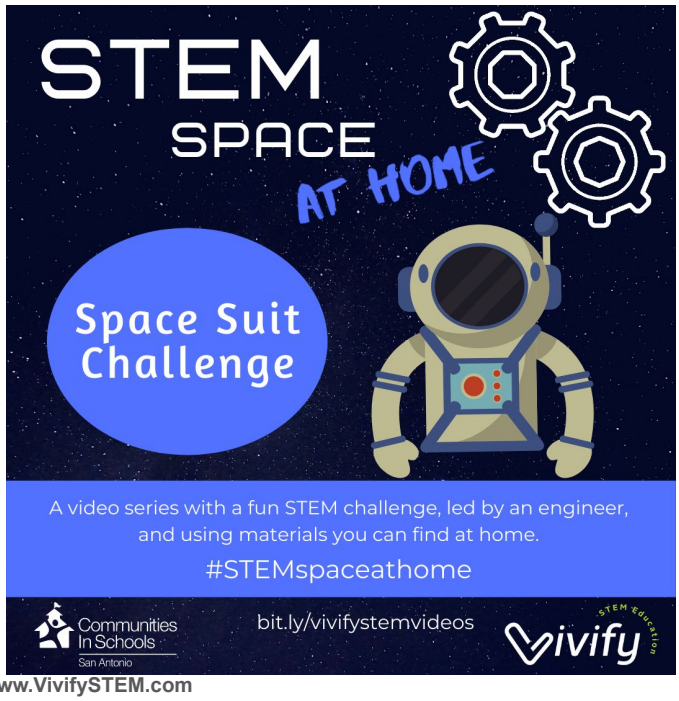
Editable Google Slides Teacher Instructions

1. Click the link for the Google Slides link at the bottom of this page.
2. Sign into your Google Account and **MAKE A COPY** when prompted.
3. Save an original copy on your own google drive and then make a separate copy for your students to edit. Keep your original file.
4. Your students will need to make their own copy when you share the file with them. *Students will need their own Google accounts to use the Google slides and may do so on an iPad or iPhone using the free Google Slides App.*

Tips for using Google Slides:

1. To DELETE a slide, right-click the slide on the left-hand side preview and click DELETE SLIDE.
2. To DUPLICATE a slide, right click on the slide in the left-hand side preview and click DUPLICATE SLIDE.
3. To PRINT slides, click FILE and then PRINT.

Click on this link or the image to the right to access the editable Engineering Design Process Google Slides Worksheets



Engineering Design Process

1

Identify the Problem

2

Brainstorm

3

Design

4

Build

Test & Evaluate

Redesign

5

Share Solution

Identify the problem

What is the goal of the challenge?

Mission:

Design a spacesuit to protect against the harsh environment of space!

What are the design constraints for the astronaut boot?

What are the design constraints for the helmet?

Brainstorm

List available materials and how they may be used to solve the problem.

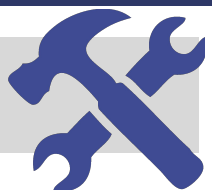
Design

How will you solve the challenge? Sketch your design solution below. Label all parts and materials.

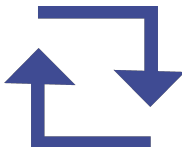
Boot

Helmet

Build



Time to build your solution! Keep in mind that materials may not work as you predicted. Engineers often have to make several modifications to their original design before they are successful. List any challenges you experience during the building phase.



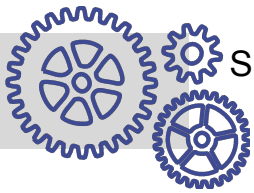
Test & Evaluate

Test your design and record results below. Circle if the challenge was a success. Remember that failure is an important part of the engineering process! After each trial, review the results and make changes to improve your design.

Trial	Test Results	Ideas for Improvement
1		
2		
3		
4		

Final Testing Results:

Solution



Sketch your final design and label materials used.

Boot

Helmet

Reflect & Share

Answer the following questions. Then share design results with your family/class!

1. What challenges did you face during the design process?

2. How does this challenge relate to a STEM career?

Thank You!

Thank you for downloading a Vivify product! If you have any questions, please email us at info@vivifystem.com.

Terms of Use

About Vivify

Vivify is a team comprised of two Aerospace Engineer friends, Natasha and Claire, who live in Texas. We met as college classmates and roommates at Texas A&M University and later left engineering careers in the Department of Defense and Air Tractor to pursue our passion for STEM education. Learn more of our story here.

Our goal is to bring engineering to life—to vivify learning—for kids of all ages. Please connect with us so we can learn how to better serve your students!

- Natasha & Claire, The Vivify Team

Connect with us for free STEM resources!

Subscribe to our newsletter and receive access to a library of free STEM resources through www.vivifystem.com. Follow us on social media or listen to "The STEM Space" podcast for more resources and ideas. We also welcome you to join "The STEM Space" Facebook group to connect with other educators across the world.

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