

Make a Payload Enclosure at Home!

This project mimics what Team Cooke's science team is doing in the lab – creating a payload enclosure to keep our payload safe on its journey to space, while its in space, and on its return to Earth!

Your Mission:

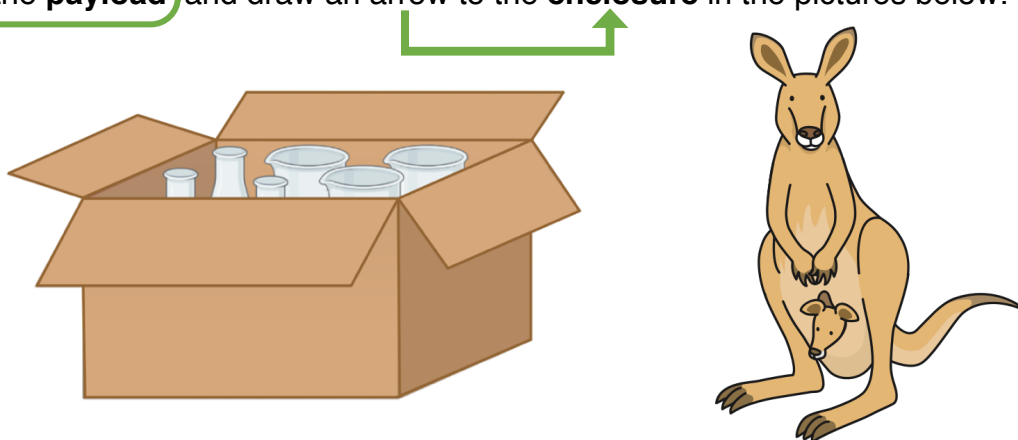
Build a **payload enclosure** to get your “bacteria” payload to space and back safely!

Word Meanings:

A **payload** is something being shipped or sent somewhere – for example, if a train is carrying coal somewhere, the coal is the payload.

An **enclosure** is something that keeps an object separate from the world around it to keep it safe from damage. It can also keep its payload dry, warm, cold, and more.

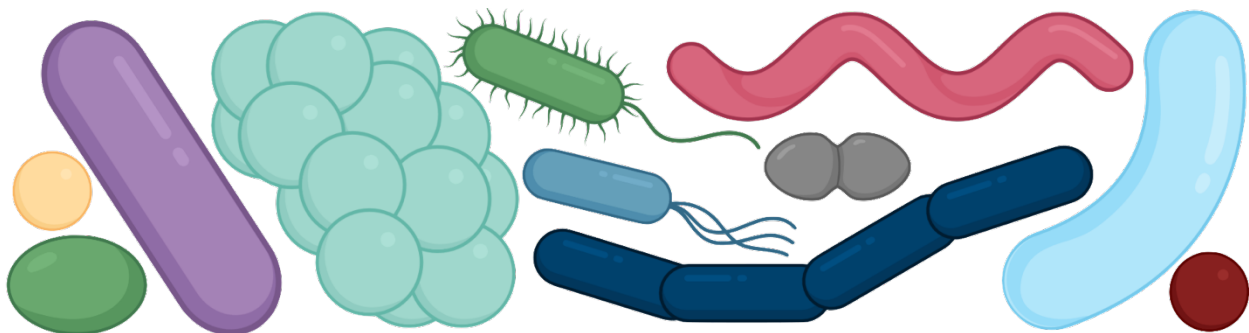
Circle the **payload** and draw an arrow to the **enclosure** in the pictures below:



Create your payload:

You will need: Play-Doh, clay, or a similar product

Mold your Play-Doh/clay into a bacterium. Below are some common bacteria shapes, but feel free to get creative!



Let's Get Building!

You will need (ask your parent/guardian to help you find these things in your house!):

- Cardboard (from an old cereal box works great!)
- Packing paper, bubble wrap, etc. (from a recent package, maybe?)
- Masking tape
- Scissors
- Play-Doh, clay, or similar product (to create your payload!)

Plan Your Payload: Draw what you would like to make for a payload enclosure in the space below before starting!



Now, Build Your Payload:

Do your best! Try to make your payload a good size to keep your payload safe. Ask a parent or guardian to help if you need it!

When You're Done.....

Test Your Payload! Place your payload inside your payload enclosure, close it up, and perform these tests to see if it works!

- 1. Shake Test to simulate the Launch into space!
 - Shake your payload enclosure like it's being launched to space!
- 2. Toss Test to simulate Docking to the ISS
 - Stand 8 feet away from a buddy and toss the enclosure back and forth!
- 3. Drop Test to simulate Landing back on Earth!
 - Stand up high (carefully!) and drop that payload enclosure back to Earth!

Check on your payload after the tests to make sure it was kept safe. Did it pass? Great! If not, you can go back to a building station to fix it and try again!

Test:	Result (circle one):	
1. Shake test (Launch!)	Passed	Failed
2. Toss test (Docking to ISS)	Passed	Failed
3. Drop test (Return to Earth)	Passed	Failed

Ready to fly? (Did it pass all three tests?) YES NO
Awesome! Try again!

We hope you had fun doing this at-home engineering challenge!

We would love to see your creation! Ask a parent or guardian to take a photo of your finished payload and either send it to us at our email address (at the bottom of this page) or post it on social media and tag our team @unhm.spocs!

