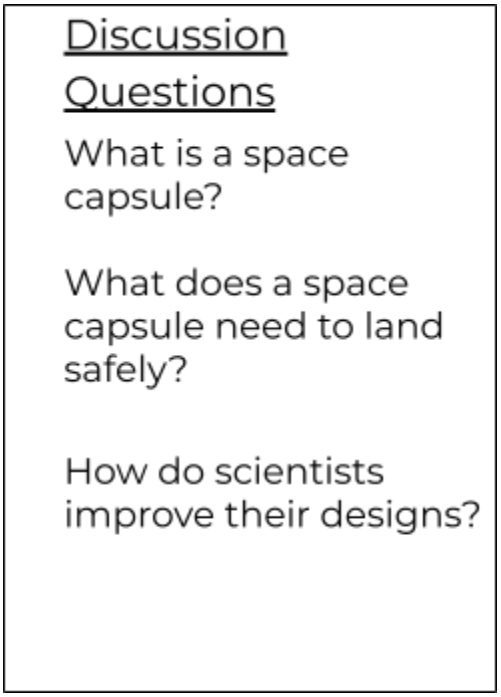
EDUCATOR'S GUIDE

Landing A Space Capsule

Preparation

Overview and Objectives
This lesson is geared toward family audiences.

Participants will learn about the journey a space capsule takes from take-off to landing. *Intrepid* played the role of recovery vessel in two space missions. safely retrieving a total of three astronauts and one space capsule. Space capsules are specially equipped to keep an astronaut healthy and safe through their entire journey to space and back down to earth.



At the end of this lesson participants can explain Intrepid's connection to space capsules, chronologically describe a space capsule's journey from take off to landing, describe different ways engineers have made space capsules land in a safe way and create a model space capsule that protects its occupants from the force of a crash landing.

This lesson includes a slideshow in which a family can read through together to learn about space capsules and design their own capsule to protect an egg from a fall.

Asynchronous Adaptation

Have participants go through the slideshow on their own. Discuss with participants what a space capsule needs to protect an astronaut as it descends toward earth.

Materials

- **Landing a Space Capsule Slideshow**
- **Recycled Materials**
- **Egg**
- **Ziploc Bag**

- **Scissors**
- **Tape**
- **Photo Jumble Worksheet**
- **Gluestick**

Lesson

1. **Introductory Activity**
    - Participants will watch one-minute video about space capsules and go through slides 1-8 while answering these questions:
        - **What is a space capsule?**
        - **How is *Intrepid* connected to space capsules?**
        - **How can we soften the landing of a space capsule?**

    - Ask participants to share what they already knew about space capsules and what they learned.

2. **Slideshow**
    - Explain to participants that a lot of planning and steps went into putting astronauts into space. Ask students if they have ever done a project that took a lot of planning.

    - Follow the journey of a space capsule by reading and discussing slides 9-15.

    - Discuss what challenges scientists, astronauts and engineers may have faced while planning and launching a space capsule.

        - **Which step of a space capsules journey do you think would be the most difficult??**

    - Let participants know it is their turn to act as scientists and engineers by figuring out how to design a space capsule that can safely land an egg.

Activities

To deepen engagement with this content, you may choose to add the following activities :

Egg Drop Challenge

Follow these visual instructions and the slideshow to create your own space capsule for an egg.

Imagine an ordinary egg is an astronaut coming back from space.

Your job is to design a space capsule that can safely deliver an egg to the ground when dropped from a high height.

Before beginning, put your egg in a ziploc bag so that it does not make a mess if it breaks.

Use recyclables and household materials to create a capsule for your egg. Consider creating padding, a parachute, air bags or other designs to keep your egg safe.

When you are ready to test your capsule, secure your egg (while still in a ziploc bag) inside your capsule. Take your capsule to the top of the stairs or another high up place. Do a count down back from five and drop your capsule on the ground.

Recover your capsule and see if your egg survived. Did the egg break? No problem! Scientists have to test things multiple times before they find something that works. Revisit your design and make improvements. When you are ready you can test it again.

Photo Jumble

Print Photo Jumble Worksheet

Cut out the photos on page 1 of the worksheet below.

Rearrange the photos until they are in the correct order.

Glue the photos in order to page 2 of the worksheet.

Write down what is happening in each photo.

If you are stuck go back to the slide show for help.

Asynchronous Adaptation

Have participants go through the slideshow on their own. After completing the slideshow families are welcome to try the egg drop challenge below.

Extension Activity

Work as a team to make a space capsule that protects four eggs instead of one. What will you have to change about your design?

Space Capsule Photo Jumble

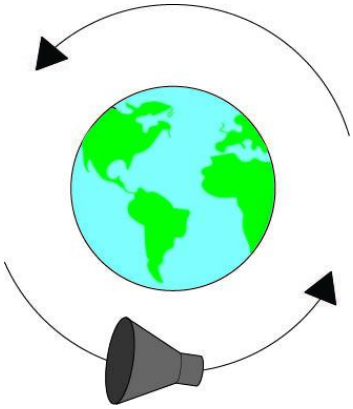
Instructions

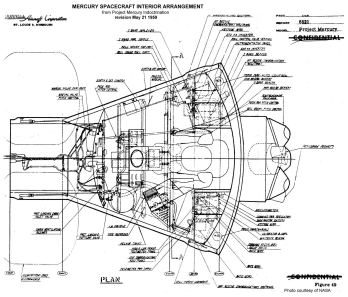
1. Cut out the images below
2. Rearrange the photos in chronological order
3. Glue the photos in order onto the next page of the worksheet
4. Next to each photo write down what is happening in the image

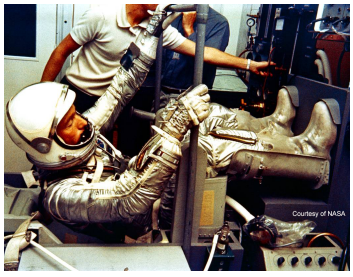
Materials:

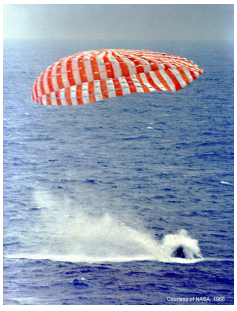
-glustick

-scissors









Space Capsule Photo Jumble

Instructions: Glue the photos down in chronological order and then describe what is happening in each image.

1.	2.
3.	4.
5.	6.

Additional Resources/ References

Background Information on Gemini III and Mercury-Atlas 7 space missions

Mercury-Atlas 7

Mercury missions were the United State's first space missions, therefore they were named "Mercury" after the first planet closest to the Sun. Mercury capsules only held one astronaut. In 1962 *Intrepid* retrieved Scott Carpenter from the ocean after his Mercury-Atlas 7 mission. Because of a malfunction in the capsule Scott Carpenter had to take control of the spacecraft manually and over shot his target destination by 250 miles. For this reason it took *Intrepid* a few hours to reach him.

Gemini III

Gemini capsules were named after the Gemini constellation that depicted two brothers because Gemini capsules held two astronauts. In 1965 *Intrepid* retrieved the Gemini III capsule and its crew. "Gus" Grissom and John Young. On this mission Grissom defied orders by sneaking a corned beef sandwich onto the mission in his space suit. The astronauts only took two bites of the sandwich before realizing that crumbs had begun to float around and could cause issues in the capsule.

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INSTITUTE of Museum and Library SERVICES

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