OVERVIEW

Module 4: **Astrobiology Adventures: Plan, Build, Explore**

OVERVIEW	This three-lesson module explores space missions and space exploration. Through mission planning, creative hands-on activities, and play-based learning, students can plan their own mission to a chosen planet, utilizing their newly acquired knowledge of Astrobiology topics. Students will plan their mission by setting goals, creating a spacecraft, and completing their mission by making scientific discoveries. They will use their collaboration skills to complete this mission with their team.
LESSON 1: OUR FIRST MISSION	Students will choose where they are going on their first mission to space and why they are going there. They will decide who they are bringing with them on their space mission, utilizing their previous knowledge of careers in astrobiology. They will choose why each crew member is important to have with them in space. **Duration: 45-60 minutes**
LESSON 2: DESIGN YOUR SPACECRAFT	Students will be able to build their own spacecraft using Legos. They will design and create their own spacecraft to travel to their chosen planet. **Duration: 60-90 minutes**
LESSON 3: GETTING READY FOR LAUNCH	Students will be able to "take off" on their mission! They will work together to discover extraterrestrials on their planet. They will share their mission findings with the rest of the class. **Duration: 45-60 minutes**

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SUCCESS CRITERIA	Lesson 1: • Students can list at least one goal for their space mission. • Students can identify which types of careers or specialists would be needed for a space mission to be successful. Lesson 2: • Students can discuss the design (shape, size, materials) of their spacecraft and why it is important for their mission. • Students can discuss challenges engineers may face when designing and building a spacecraft. • Students can name at least three different parts of a spacecraft. Lesson 3: • Students can explain how their discovery aligns with their mission's original goal. • Students can explain how the discoveries they made on their mission might impact life on Earth.
MATERIALS	• (Optional) Extraterrestrials and Extreme life forms students created in Module 2 and/or Module 4 • "Imagining Life on Other Worlds" - print or view the last 13 slides (do not use Venus, Mars, or Europa) • "Space Jobs" Powerpoint • Crayons or Markers • Paper or small posters • LEGOs or other building materials • "Parts of a Spacecraft" PowerPoint • Kinetic Sand, regular sand, or even dirt will work • Tray for sand • Astronaut figurines (or other small figurines), 1 per student

This module was created by Lauren Bollinger, an elementary school educator at Bloom Elementary in Tucson, AZ, in collaboration with the Arizona Astrobiology Center. It is supported and distributed by the University of Arizona's Astrobiology Center with funding from the Marshall Foundation, Tucson, AZ. For more information, contact Lauren James at laurenjames@arizona.edu. Lesson kits are available for checkout from the Arizona Astrobiology Center - https://astrobiology.arizona.edu/