



Introduction to Space Colony Habitat Design

Welcome to the exciting world of space exploration! In this lesson, we will be designing a space colony habitat for different planets and environments. This project will challenge your creativity, problem-solving skills, and knowledge of STEM concepts.

Understanding Planetary Characteristics

What are the essential characteristics of a planet that would support human life?

1. Foundation: List two basic characteristics (e.g., air, water)
2. Core: List four characteristics (e.g., air, water, temperature, gravity)
3. Extension: Research and list six characteristics (e.g., air, water, temperature, gravity, atmosphere, resources)

Designing a Space Colony Habitat

What are the essential components of a space colony habitat?

1. Foundation: List three basic components (e.g., living quarters, life support, energy generation)
2. Core: List five components (e.g., living quarters, life support, energy generation, radiation protection, airlock)
3. Extension: Research and list seven components (e.g., living quarters, life support, energy generation, radiation protection, airlock, greenhouse, laboratory)

Sustainable Systems and Resources

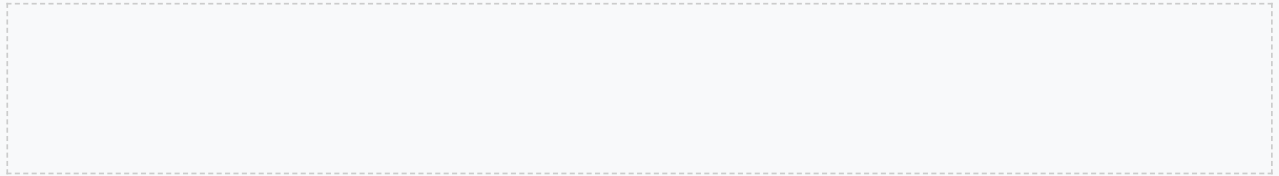
What are some sustainable systems and resources that can be used in a space colony habitat?

1. Foundation: List two basic systems (e.g., solar panels, water recycling)
2. Core: List four systems (e.g., solar panels, water recycling, food production, waste management)
3. Extension: Research and list six systems (e.g., solar panels, water recycling, food production, waste management, air purification, renewable energy)

Collaboration and Communication

How can collaboration and communication be used to design and build a space colony habitat?

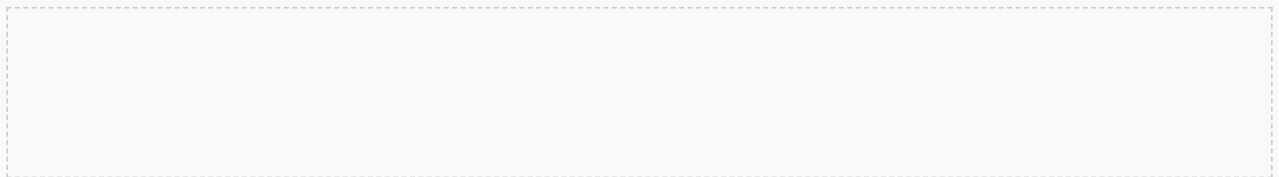
1. Foundation: Draw a simple diagram showing the importance of teamwork
2. Core: Write a short paragraph explaining the importance of teamwork and communication
3. Extension: Create a presentation or role-play scenario demonstrating the importance of collaboration and communication in designing and building a space colony habitat



Space Colony Habitat Presentation

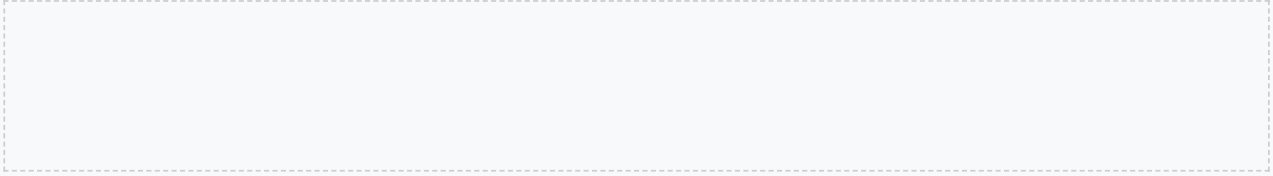
Create a presentation to pitch your space colony habitat design to a panel of investors.

1. Foundation: Create a simple poster or diagram
2. Core: Write a short script and create a presentation
3. Extension: Create a detailed and professional presentation, including visual aids and supporting evidence



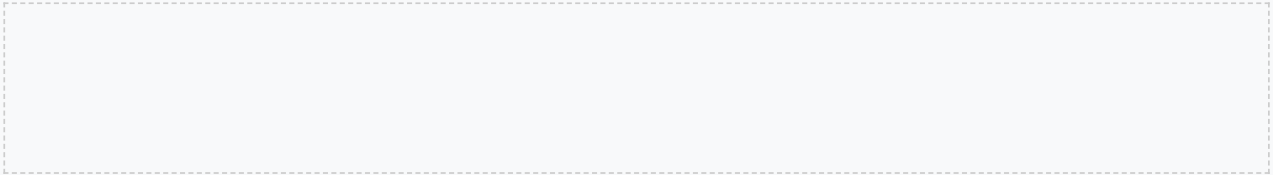
Additional Activities and Questions

Design a space colony habitat for a planet with extreme temperatures.



Research and Write

Research and write about the psychological and sociological challenges of long-term space travel.



Model or Simulation

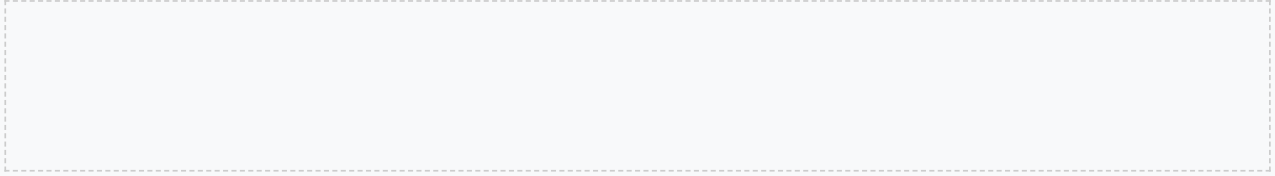
Create a model or simulation of a space colony habitat.

Persuasive Essay

Write a persuasive essay on the benefits of space colonization.

Sustainable System Design

Design a sustainable system for a space colony habitat.



Presentation or Role-Play

Create a presentation or role-play scenario demonstrating the importance of collaboration and communication in designing and building a space colony habitat.

