



Team Brief™

Intelligent Systems
Sensory Imaging

Rotation 3, Interval 2
Segment 2

Attention captains! Have each member of your Suite Team read aloud one of the following paragraphs on the Space Colony challenge, and then answer the questions together.

1. The Suite Team will be responsible for putting together a proposal on your prototype of an intelligent space colony.
2. Each Suite Team member should complete this Team Brief by working together at the team table. Keep your completed Team Brief in your student portfolio for reference while you are completing the team challenge during Interval 3.
3. You will complete a proposal including information you gather on this Team Brief. The proposal should include all items that address your Space Colony. Your completed proposal will be presented during Interval 4.
4. You and your Suite Team will complete a prototype of your Space Colony and its many elements for use in your presentation during Interval 4.
5. Each Harbor will work on a different portion of the prototype as indicated in this Team Brief.
6. In preparation for your presentation and proposal, please read the team challenge and answer the following questions. You may also refer to any of the books in your Harbor libraries for additional information or reference.

Challenge: *Space Colony*

Your Suite Team has been commissioned by NASA to propose a space colony design that applies intelligent systems. The purpose for building this space colony is to take space exploration to the next level.

You must complete the following tasks and then prepare a proposal and presentation that describe your space colony and its capabilities. Your primary task will be to determine a mission and location for the space colony and what design features it will include. Build a model that demonstrates one of the intelligent systems you chose to include in your design. You don't need to build the entire space colony. The architects only want to see a working model of the system that will be used to make this intelligent space colony unique and functional.

Choose one system you would like to demonstrate in your space colony. Applying intelligent system technology to space exploration is the wave of the future. If you are successful with this project, there may be many more requests for the systems that you designed. Provide sketches on the backside of these pages when necessary.

Questions:

1. First, decide what mission your space colony will fulfill. Write down your colony's mission.



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8. List the sensors you will use on the prototype and explain why you chose these sensors.

9. You will be building a model of your sensory imaging components. Use the space below to sketch your prototype's sensors. Identify their location, function, sensory input, and actions to be performed.

10. List the control system(s) the full space colony might need. Explain how the drive systems will work and any specific control features.

11. Explain how your prototype's control system will work. Select a single circuit that you will use in the prototype. Draw a schematic of your circuit.

12. What types of information will you want to give NASA about your prototype? Explain how it models the full robotic systems to be used in the Space Colony, and identify the key points for use in your written proposal.

13. List items that will be included in the final challenge documentation. Team captains will be responsible to gather all of the challenge documentation from the other Harbors and to prepare them for the presentation of the challenge solution. Be sure to check each Harbor's Task List