



Exhibit Descriptions

Power Station

Explorers team up to fix a “broken” fuel cell aboard the ship. One Explorer remains at the control console to review the troubleshooting procedures while another Explorer moves to the back of the vessel to work on the device itself. They communicate by phone as the Explorer at the control console reads the instructions to the Explorer at the fuel cell to determine the cause of the failure and hopefully repair it before the space ship is destroyed!

Digital Design

Explorers design their own descent vehicle on a computer aided design (CAD) station, trying to keep their design within required parameters of surface area, volume and mass. The vehicles are 3D shapes produced by a surface of revolution around a fixed, straight line axis. The resulting shapes can be investigated and examined in any orientation.

Aerodynamic Testing Chamber

Explorers build small paper descent vehicles and flight-test them in a laminar air stream. Using papers cones and other shapes, vehicles can be modified with wings, scalloped edges, etc. to see how this changes the flight and hovering characteristics. They can test their vehicles by pressing a start button and releasing them into an air column produced through a collection of vertical “air straightening” sleeves.



ROV Command

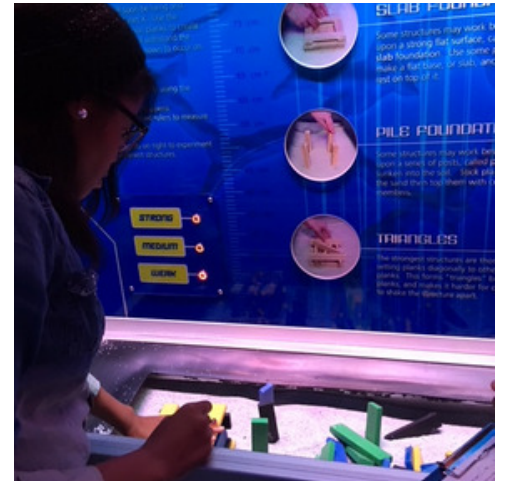
Explorers maneuver a remote operating vehicle outside the spacecraft, using it to explore an interesting piece of terrain. Using a joystick to control the vehicle, Explorers monitor the vehicle's movements in real time, but with a 2 second delay to mimic the delay experienced when transmitting information across vast distances in space.

Explorers can drive the ROV wherever they wish, as long as they can effectively use the joystick in conjunction with the visually-delayed feedback.

Quake Table

Explorers must design a building to erect on the new planet. However, the planet is known to have strong quakes at frequent intervals. Explorers are challenged to create a model of a building that will withstand these "planet" quakes.

Explorers are instructed to record the height of their structure before the "quake" occurs using a marker on panels at the rear of the exhibit. Both Metric and English systems of measurement are used. Comparison of styles, height and durability can be made in the classroom after the experience.



Oracle

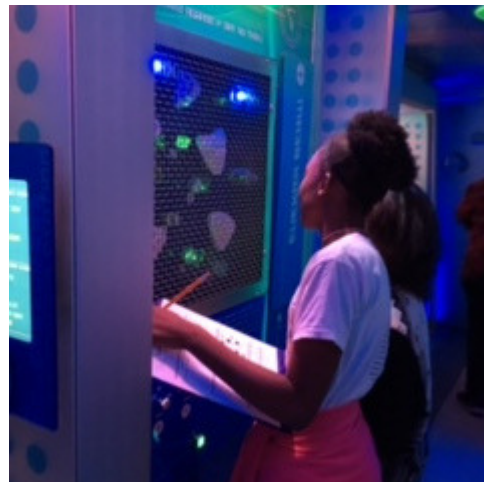
Explorers receive encrypted messages from headquarters which they must decode and then program into the vessel's computer, the Oracle. The act of decoding involves the use of two cypher wheels, while the act of programming the oracle allows explorers to inform the ship's crew of important news about the mission.

Vocabulary buttons are color-coded according to parts of speech. Explorers can also create their own messages using their knowledge of sentence construction.



Energy Beam

Explorers use an array of mirrors and beam splitters mounted on a vertical panel to manipulate a strong laser beam across a topographic “map” to see how many of 4 sensors they can illuminate. They will use this information to determine the optimal landing site for a computerized probe.



Energy Generation

Explorers interact with a series of buttons and knobs to generate and expend energy throughout the ship in order to make different systems “function.”

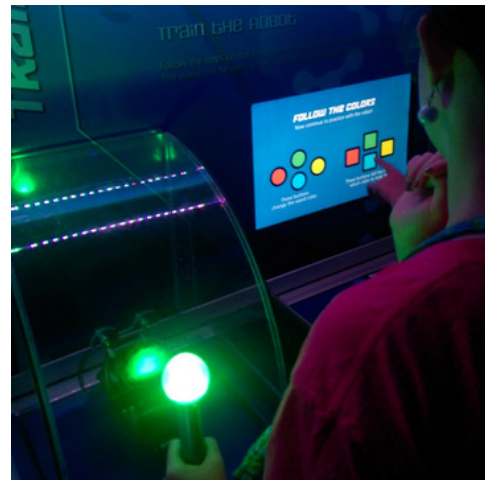
Once energy is generated the explorers will then decide what systems to turn on throughout the ship. The systems, from oxygen scrubbers to a photon torpedo, use different amounts of energy at different rates. If they don't pay enough attention or generate enough energy the station could experience a complete loss of power.



Program a Robot

Explorers interact with a robot in order to “program” the robot to follow the different light colors generated by a light wand. They will use prompts from the robot to ensure it is moving in the proper direction and seeing the proper color of light.

Explorers will accept or reject if the robot has gone in the correct direction. Explorers will then program the appropriate colors displayed by the color wand then guessed by the robot.



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For Pricing and Availability please contact:

Josh Annett | jannett@museumofdiscovery.org | 501.537.4601