Space Travel Hazards

Summary
The Space Travel Hazards Game was developed to help reinforce knowledge of space travel and some of the potential hazards associated with space travel.

Prior Knowledge and Skills
Understanding of:
• Space travel
• Radiation and other energy forms
• Basic knowledge of astronauts

Ability to:
• Perform basic math (addition, subtraction, and multiplication) and charting/graphing
• Read and follow basic instructions
• Work in a group setting

Materials per Game Board
• Copy of game procedures and rules
• Copy of game board sheet
• Astronaut game pieces, 1 per team
• Chance Cards (place in center of game board)
• Tally Card
• One die
• Pencil
• Score Chart (Graph)

Preparation Time: 10–15 Minutes
1. Review directions
2. Set up game boards, score cards, and Chance Cards
3. Form teams

Procedures
1. There should be two to four players per team.
2. Each game will have one game board, one die, and one set of Chance Cards. Each team should have one game piece, one score card, and one marker/pencil/colored pencil
3. Have the teams read over directions for the game. A game will take 15–30 minutes to play.
4. Review the scoring and plotting when a game is over.
5. Review lessons learned while playing game.

For replacement paper items, please visit http://lws-set.gsfc.nasa.gov/ and download the electronic files for printing: Rules, Chance Cards, Tally Card, and Score Chart.

Rules of the Game—Player Instructions

Object
The object is to get from Earth to Mars and back along one of two pathways to accomplish a successful mission. Along the way, teams will acquire Radiation Points (RPs) that are detrimental to the mission. Teams will also acquire Mission Points (MPs) that measure the success of the mission. When the game is finished, plot the total Radiation Points and Mission Points on the Tally Card to see if the team had a successful mission and determine the game winner.

Two to four "teams" per game board may play at one time. A "team" consists of two to four people. Each team will have one astronaut figure to represent the team. Each team must select which path they will take when launching from Earth and after landing on Mars. Once a team reaches Mars, they will have to choose one of two pathways for the return trip to Earth.

Procedure
Each team represents a space mission. Each mission (team) should name themselves and place the name at the top of the "Tally Card." All decisions made about the mission are made as a team. Each team will select one astronaut figure to represent the team on the game board. Each team should only use one astronaut for the duration of the game. The designated markers (astronauts) will be used to move on the spaces on the game board by the number rolled on the die. Points (gain or loss) should be tallied according to the directions of the designated space, if any. In each turn thereafter, roll the die and proceed through the rest of the game. The game is not over until all teams are safely back on Earth (they do not need an exact roll to move to the last space on the game board).

ALL CHANCE CARDS ARE TRUE OR FALSE—If a team lands on a Chance space, one of the other teams will select a Chance Card and ask the question on the card. The team that landed on the Chance space will then answer the question. If they answer the question correctly, they will gain the MPs (points) posted on the cards. Return the card to the bottom of the deck facing up.

Scoring
Teams can gain MPs and RPs by landing on designated spaces on the board or by answering questions on the Chance Card. Additional MPs can also be gained from answering bonus questions on designated Chance Cards. Each team must record all RPs and MPs on the Tally Card. Whenever a team lands on a space that states: "Roll x a Number" that team must roll again and multiply by the number on the die by the number rolled. MPs and RPs are to be recorded, tallied, and totaled separately in designated areas on the Tally Card. Each team totals their own points and plots the two values to a single point on the Score Graph. The Score Graph should be handed out at the end of the game. The team with the point that is the highest in the upper left-hand corner of the graph is the winner (that team had the most successful mission).

Record MPs for launching, landing, etc., next to the appropriate space on your Tally Card. Points for "SAFE LANDING ON EARTH" are to be calculated by the directions on the space on the game board.