

## Playbook Requirements

### Guidelines:

- The playbook should not exceed 10 pages (8 ½ x 11), and should use 12 point font.
- The playbook will be accepted in Microsoft Word (.doc, .docx) or Adobe Acrobat (.pdf) format ONLY. The playbook should be created in a word processing program ONLY, and not in PowerPoint or other presentation software. Playbooks submitted as presentations will be disqualified.
- The game should be designed for play in the U.S. Destiny Lab (18.5 meters long, 9.2 meters wide; volume: 117 cubic meters when empty; usable volume: 35 cubic meters)
- The playbook should include these components:
  - General Overview: Briefly describe the game in 2-4 sentences.
  - Game Objects (See List of Game Objects available on the ISS.)
  - Definition of Terms unique to your game in space. (1 sentence per definition)
  - Rules of the Game in space. Include scoring, game periods/timelines, fouls/penalties/violations, and objects used.
  - Safety Plan: Guidelines/Precautions, Gear/Equipment Needed, Personal Protective Equipment. (Keep in mind SAFETY for playing the game on Earth and in the microgravity environment of the ISS.)
  - Game Diagrams that demonstrate how the game is played in space, and explain the science of the game in relation to Newton's 3 Laws of Motion. These diagrams may be used in the video demonstration. (See Example Playbook for Basketball, Page 5)
  - Explain if your game can be played on earth. Why/Why not?

## Game Objects:

Choose up to 5 different objects from this list. Multiple items of the same object can count as 1 object. Games that use more than 5 objects will be disqualified.

### Cloth

- Athletic headband (184.2mm x 16.5mm x 50.8mm; 0.045 kg)
- Nylon running shorts (0.15 kg)
- Cotton handkerchief (104.9mm x 101.6mm x 11.2mm; 0.02 kg)
- T-shirts (0.30 kg)
- Socks (0.10 kg)
- Washcloth (0.045 kg)
- Towel (0.155 kg)

### Crew Miscellaneous

- Exercise putty (0.09 kg)
- Athletic Exercise Band (disposable) (914.4mm x 152.4mm x 0.51mm; 0.05 kg)
- Ponytail holders (0.005 kg)
- Bungees

### Hygiene

- Cotton swabs
- Dental floss (50m roll)
- Vinyl gloves
- Empty tubes/bottles (0.75 oz tube - 0.05 kg; 12 oz bottle - 0.36 kg)

### Office Supply Pantry

- Bungee cords (0.23 kg)
- Alligator clips
- Velcro straps (203.2 mm x 12.7mm x 2.5mm; 0.02 kg)
- Velcro patches (1" square, 2" square, or 0.5" dots)
- Red, yellow, green, and blue Chart Tape (0.5" wide; 0.02 kg for roll)
- Scotch tape
- Duct tape (1" or 2" wide)
- Masking tape (1" wide)
- Kapton tape (1" wide)
- Double-sided tape (1" wide)
- Colored pencils
- Pens
- Pencils
- Paper
- Markers: Sharpies (some colored) and highlighters (yellow)
- Flashlights

- Timer/stopwatch (0.05 kg)
- Drawing paper (14" x 17")
- Engineering pad (8.5" x 11")
- Copy paper (8.5" x 11")
- Scissors (small)
- Rulers: metal ruler in tool box, tape measure also available
- Rubber bands
- Rubber eraser (41.4mm x 31.8mm x 10.9mm; 0.017 kg)
- Post-It notes (1.5" x 2" or 3" x 3" or 3" x 5" or color Post-It flags)
- Nomex #3 and #6 thread and cord
- Zipper-top bags (2" x 2", 4" x 4", 6" x 6", 8" x 8", 12" x 12", 9" x 15", 13" x 18", 24" x 24")
- Packing foam
- AAA, AA, C, D, and 9V batteries

## Food Pantry

- Chocolate-covered candies (M&Ms & Peanut M&Ms)
- Liquid/water drink bags

## Education/Science

- Magnifying glass
- Pipets (small)
- Nomex blue backdrop with grid (48" x 60 ")
- Gyro-exerciser (76.2mm dia. x 63.5mm) and Gyro-tube (114.0mm dia. x 88.9mm)
- Soft Earth (890mm dia.), Moon (330mm dia.), and Mars (711mm dia.) scale models

## Balls

- Earth, Moon, Mars huggable planet balls: Earth = 36", Mars = 30", Moon = 14"

## Video Requirements

Videos should demonstrate how to play your *Spaced Out Sport* and the science of the game as it relates to one or more of Newton's Three Laws of Motion.

### **Guidelines:**

- Demonstrate one or more of Newton's Three Laws of Motion in space/micro-gravity
- Use the Game Diagrams OR use a different format
- Animation can be used
- Time should be 4-8 minutes

### **How to Submit Your Video:**

In order to be reviewed by the judges, video submissions must be uploaded to YouTube at: <http://www.youtube.com>.

Each team must use the following script to introduce their game on the video:

"This is team (unique identifier) and the name of our game is \_\_\_\_\_."

Submissions that do not follow this exact script will be disqualified. Do not identify the name of any student, teacher, school, group or city/region in your playbook or video.

In order for your team to qualify for awards, both your playbook and the URL to your YouTube video must be received by March 16, 2012.

For information on how to upload a video to YouTube, visit the YouTube Help website (<http://www.google.com/support/youtube>). If you do not already have one, you will need to create a YouTube account and then upload your video. After the upload, YouTube will display a link (url) to your video. You must include your YouTube video's link when you email your playbook for the contest. We strongly recommend that you read the directions on the YouTube Help website before beginning to shoot your video.

## Selection Criteria and Awards

Playbooks and videos will be judged and scored by NASA using the rubric provided on the last page of this document. An independent safety review of the candidate winning game will be conducted.

## Example Playbook for Basketball

### General Overview:

Basketball consists of 2 teams of 5 players, who dribble and pass a ball down a court. The object is to toss the ball into the opposing team's basket to score points.

### Definition of Terms:

Dribbling: player pushes/taps the ball toward the floor.

Dunking: player strongly throws ball down into basket.

Traveling: taking more than 1 ½ steps without dribbling the ball.

### Rules of the Game:

Scoring: 2 points for basket; 3 points for outside arc; 1 point for free throw.

Game Period: 8 minute quarters.

Violations: Traveling, Double Dribbling, and Carrying.

Fouls: Blocking, pushing, tripping, or holding a player in possession of ball.

### Safety Plan:

Guidelines/Precautions:

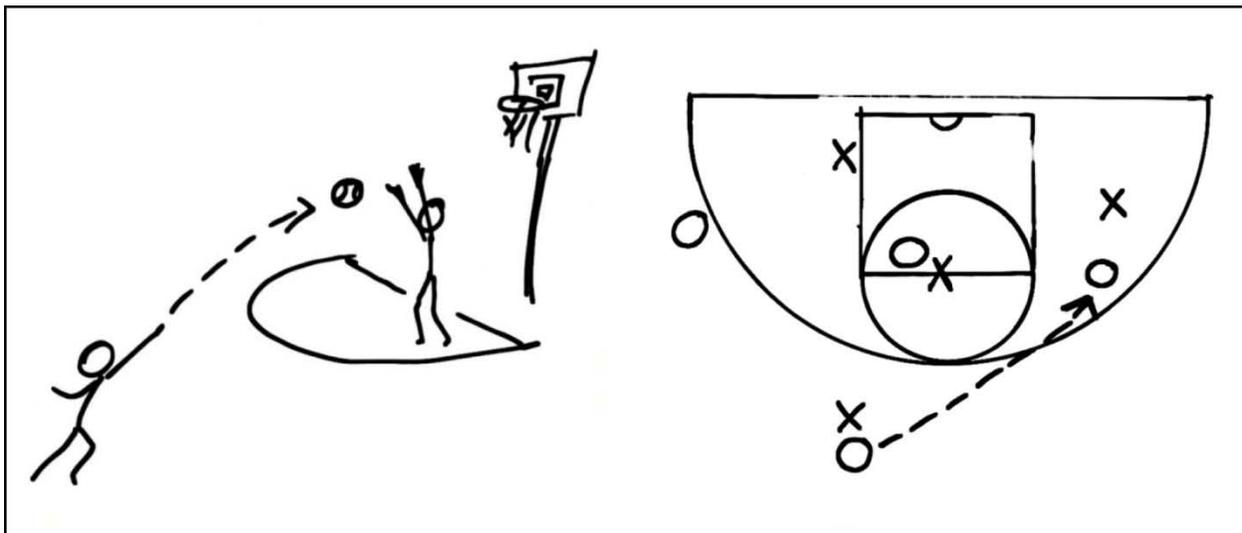
- Maintain a clean playing area

- Keep floor surface free of spills or sweat

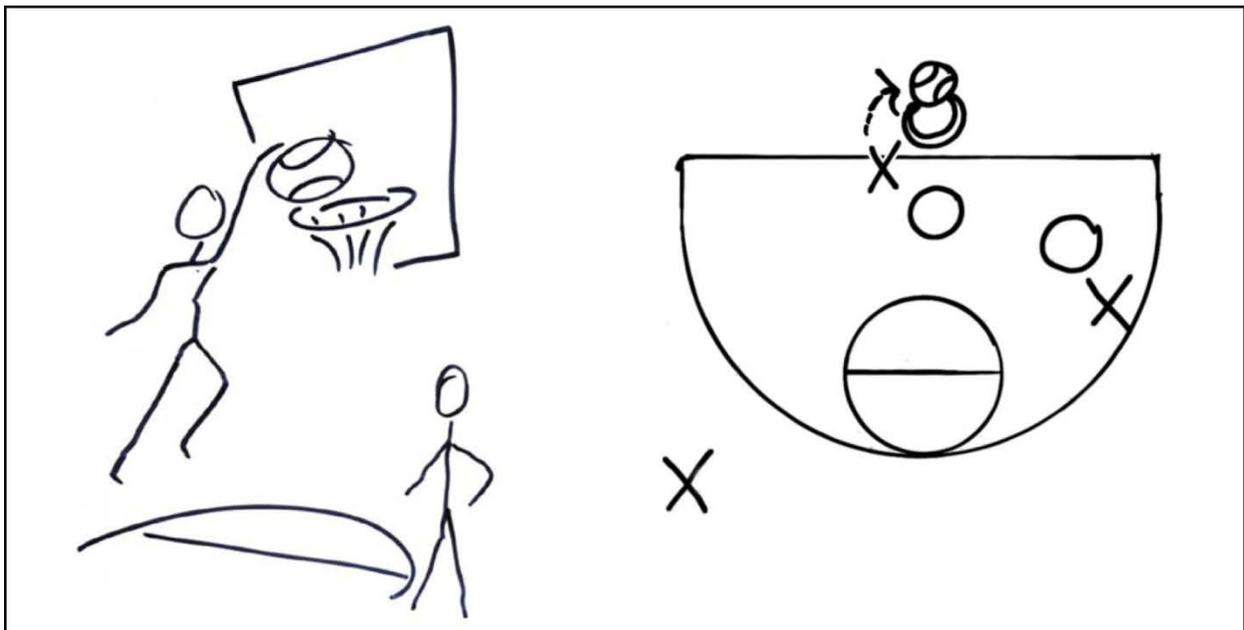
- No charging/hard-hitting

- Wear appropriate shoes and clothing

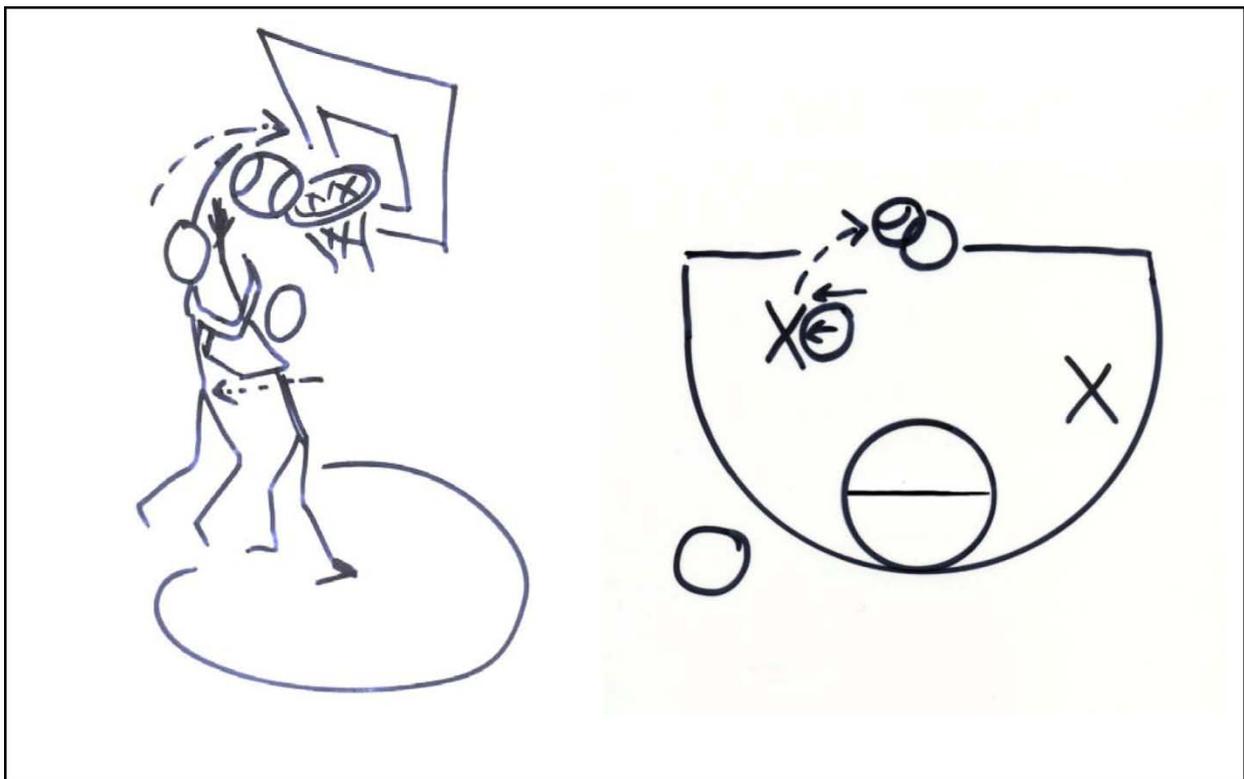
### Game Diagrams:



Player throws basketball to teammate



Teammate dunks basketball into hoop



Defensive player pushes offensive player as he dunks ball.

## Spaced Out Sports Playbook and Video Evaluation Rubric

	4	3	2	1
<b>Design/Execution of Game</b>	All components (objects, terms, rules, diagrams/demonstrations) are exemplary and exceed requirements.	Most (3 of 4) components are included and most rule and game requirements are met.	Half (2 of 4) components - and rule and game requirements are met.	1 or less components and 1 or less rule and game requirements are met.
<b>Demonstration of Newton's Laws of Motion</b>	The game design rules, terms and demonstrations exhibit clear understanding and application of 1 or more of Newton's Laws of Motion.	Game design, rules, terms and demonstrations exhibit moderate understanding and application of 1 or more of Newton's Laws of Motion.	Game design, rules, terms and demonstrations exhibit basic understanding of 1 of Newton's Laws of Motion.	The game does not exhibit an understanding of Newton's Laws of Motion.
<b>Clarity</b>	Game design, rules, terms and demonstrations are clearly expressed and easy to understand.	Game design, rules, terms and demonstrations are somewhat clearly expressed and easy to understand.	Parts of the game design, rules, terms and demonstrations are understandable.	Game design, rules, terms and demonstrations are not clearly expressed and are difficult to understand.
<b>Creativity/Uniqueness</b>	Game components (design, terms, rules and use of objects) are highly creative and unique.	Most (3 of 4) of the game components are creative and unique.	1-2 game components are creative and/or unique.	Game lacks creativity and uniqueness.
<b>Safety</b>	Demonstration of safety throughout the game. Safety plan and considerations included.	Demonstration of safety in most of game. Some safety plan and considerations included.	Minor demonstration of safety in parts of the game. Few safety considerations included.	No safety considerations. Potential for danger and/or accidents when playing the game.