SPACE CAMP

Objective: Students will perform six stations that simulate life in outer space and tasks of an astronaut.

Grade level: 4-6

Materials: SIM Kit
Masking tape
Scissors
Small balloons (one for each student)
String
1 straw
2 plastic containers
water
10 pair of matching nuts and bolts
stop watch
paper towels
plates
mini-marshmallows
rope
metal hanger or hoop
ball or bean bag
pole or somewhere to hang the rope (basketball hoop in a gym)
blindfold (bandana)
"Control panel" 2 red, 2 black, 1 green
paper (one piece each student)
workseet

Preparation:
See individual stations for set up instructions

Procedure:
1. This can be done with 6 different stations with a leader/adult at each station. It can be done with 3 stations, each one doing 2 tasks.

2. Three stations: Have groups rotate to stations with leaders doing stations #1, #2, #3. Then students can rotate again to the stations with leaders doing stations #4, #5, and #6, so that all students complete stations 1-3 before moving on to stations 4-6.
3. After students have rotated through each station, have students assemble together with their worksheets.

4. Have students look at their worksheet so that points can be given for the stations.
   a. Station #1: Who went the farthest? They get 10 points. Who went the 2nd farthest? They get 5 points
   b. Station #2: Who was the fastest? They get 10 points Who was the 2nd fastest? They get 5 points
   c. Station #3: They should have written one point for each marshmallow.
   d. Station #4: They should have written 10 pts if they docked but did not hit the hanger, 5 pts if they docked but hit the hanger.
   e. Station #5: They should have written 10 if they hit the green, 5 if they hit the black, and 0 if they hit the red.
   f. Station #6: They had 3 attempts so they should have written their total. (10 for landing inside, 5 for landing partly touching)

5. Have students add up their totals. Prizes can be awarded for the top astronauts.
1: BALLOON ME TO THE MOON
The biggest obstacle in getting into space is overcoming gravity. A rocket produces a pushing force, called thrust, to overcome gravity.

Materials:
- Balloons (1 for each student)
- String
- 2 chairs
- Masking tape
- 1 straw
- Scissors

Preparation:
1. Thread 1/2 of a straw onto a light-weight string.
2. Tie the string between two chairs and place the chairs the length of the room. Make sure the string is taut.
3. Slide the straw to one end of the string.

Procedure:
1. Give each student a balloon. In turn, each team blows up the balloon, keeping the opening securely pinched (do not tie).
2. The student holds the balloon under the straw wherever they want it to be taped. Make sure the opening faces the nearest chair.
3. Tape a 5 inch piece of tape over the straw and onto the balloon.
4. When ready, countdown 5-4-3-2-1 BLAST OFF!! Student will let go of the balloon.
5. Measure how far the balloon traveled down the string. Student will record the distance.
6. Each student/team will get a turn.
2. COORDINATION STATION

Astronauts train for weightlessness by carrying out operations in a gigantic water tank.

Materials:
Stop watch
2 containers of water
5 nuts and bolts for each container
paper towels

Preparation:
1. Fill containers with water.

2. Remove nuts from the bolts. Place 5 pair in each container.

Procedure:
1. Explain that students will be timed to match 2 nuts with its corresponding bolt using ONE HAND ONLY.

2. Have students roll up their sleeves. Have 1 student at each container.

3. Time students. When they have finished, they will stay STOP. Tell them the time. Have them record their time on their worksheet.
3. LITE FOOD

Have you ever imagined eating food as it floats around due to weightlessness from having no gravity? Here's your chance.

Materials:
Plates
Mini-marshmallows (10 each student)
Trash can

Procedure:
1. Give each student a plate and have them count out 10 marshmallows.

2. Instruct them to toss one marshmallow at a time in the air above their head and try to catch it in their mouth. If it hits the floor, do not eat.

3. Count how many you catch. Record on worksheet.
4: DOCKING IN SPACE

In space, astronauts must meet up with satellites moving at high speeds in orbit. How well can you pilot your spacecraft?

Materials:
Rope
Metal hanger or hoop
Ball
Pole

Preparation:
1. Tie the rope to the hanger/hoop.
2. Tie the other end to a pole.
3. Place piece of tape on the floor a short distance away from where the hoop will be.

Procedure:
1. Explain that students will get three attempts to dock the aircraft. They will throw the ball and try to get it to go through the hoop. They will stand behind the line.
2. Hold the pole up so that the hoop dangles a short distance from the line. Have another student gently swing the hoop. Give each student 3 turns.
3. If they dock without hitting the hoop, 10 points. If they dock but hit the hanger, 5 points. (docking is getting it through the hoop) Have them record their attempts on their worksheet.
5: EMERGENCY

Astronauts are trained to respond quickly in any emergency. Suppose there was a power failure on board or the spacecraft began to spin out of control. Both of these emergencies have happened during spaceflights!

Materials:
Blindfold
Control panel- paper with buttons (2 red, 2 black, 1 green)
Tape

Preparation:
1. Tape or tack the Control panel to the wall.
2. Tape a line on the floor.

Procedure:
1. Tell students that the spacecraft is spinning out of control. They must press the "altitude control" (green) button in order to stabilize the craft.

2. Each student will have a turn. Blind fold and spin the student several times. Stop him or her facing the wall.

3. Student then must try to hit the correct button.

4. Green button scores 10 points, black five, and red zero.

5. Have students record their scores.
6: ON TARGET

The space shuttle lands with no engine power, much like a glider. How are you at flying?

Materials:
Tape
Meter stick
Paper

Preparation:
1. Use tape to make a 1m x 2m rectangle on the floor to represent the landing strip.

Procedure:
1. Explain that students will make a plane and land it on the landing strip.
2. Pass out paper and give students time to make a paper airplane. Assist students who do not know how.
3. When students are ready, have them stand behind a line some distance away from the landing strip. They can glide the plane trying to get it to land in the rectangle.
4. Record score: 10 points for landing entirely inside the rectangle. 5 points if the plane lands partly inside the rectangle. 0 points for not landing near the rectangle.
5. Give students 3 attempts with the same airplane.