



Mission X: Mission Handout

YOUR MISSION: **PEAKE LIFTOFF!**

You will perform an activity that is designed to promote a combination of muscular strength, agility, coordination and endurance. This activity blends together squats, pushups, and jumping in the air, so get ready for Peake Liftoff! You will comment on your activity during this physical experience in your Mission Journal.

Being physically active is an important way to keep your muscles strong and your heart and lungs healthy. To produce the complex motions we need in life, it is important to work many muscles together. As you move during the day, such as to and from class at school, your muscles, heart, and lungs benefit. They get stronger by being worked for long periods of time. Many movements also require a coordinated effort between the brain and different muscles to perform complex actions. Muscle flexibility can help reduce risk of injury and activities from jumping can help strengthen bones. Put it all together in a Peake Liftoff!!!

MISSION QUESTION: How could you perform a series of physical activities that would improve your lungs and heart, and increase muscular coordination and endurance?



Building muscular endurance and coordination is an important foundation to making complex motions. Performing a series of physical motions over time increases heart and lung health while allowing you to increase your ability to move yourself and other objects without experiencing exhaustion.

MISSION ASSIGNMENT: **Full Body Training**

- Move more than an arms-length away from others to make a safe Touchdown and Liftoff area
- Start in the standing position
- Drop to a squatting position, with your hands touching the floor in front of you, and yell “5”
- Move your feet behind you, to the beginning of a pushup position, and yell “4”
- **Once in the pushup position, pay attention to your form and keep your back straight**
- Lower your chest to the floor and yell “3”
- Raise your chest back to the beginning push up position and yell “2”
- Slide your feet back under you to a squat with your hands touching the floor and yell “1”
- Jump high in the air and yell “LIFTOFF!”
- Repeat 10 times, maintaining proper form

Record observations before and after this skill-based experience in your Mission Journal.



Strength Training:

Physical activities which use resistance to increase muscle and bone strength, and help improve overall health and fitness.

Crew (crew members):

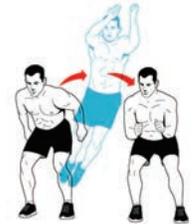
People working together on a common activity or for a common purpose; a term for astronauts who share their mission with each other.

It's a Space Fact:

There are many reasons astronauts must have strong muscles and bones. In a reduced gravity environment, muscles and bones can become weak, so astronauts must engage in strength training to counter the weakening effect of zero gravity. Also, when working on the ISS and exploring in space, astronauts have to be fit to perform spacewalks or move objects that are hundreds of kilograms! How do they do all of that? Before, during, and after living in space astronauts work closely with exercise specialists to train hard and keep their muscles and bones strong for exploration missions and discovery activities. Activities that exercise the whole body are important to prepare for the challenges involved with living and working in space.

Fitness Accelerations

- Do five burpees and for the last burpee, do a “tuck jump.” Instead of jumping straight up into the air on “LIFTOFF!” tuck your knees into your chest as you jump up. Complete three sets of five burpees with a tuck jump, rest for twenty seconds between each set.
- For this one you will need more space, so make sure you are in a wide open area, like your backyard or the school gym with your classmate or friend at least ten feet away from you. You will do one set of eight burpees, adding a lateral (sideways) jump at the end. Like the tuck jump, instead of jumping straight up into the air, you will do a different jump, called a lateral jump. When you jump and “LIFTOFF!” from the ground, jump to the side.



Repetition:

A motion (such as a body-weight squat or a push-up) that is repeated and usually counted.

Resistance:

An opposing force (through gravity, weight, including your own bodyweight or equipment).

By doing exercises that use your own body weight, you can increase the strength of your muscles and bones. Lack of physical activity can increase the chances of injury because your muscles and bones may be weak. Even easy physical tasks might seem hard!

Think Safety

- Astronauts carefully practice proper strength training on Earth so they can safely strength train in space.
- Make sure there is plenty of room around you to avoid hitting your crewmates during liftoff!
- It is important to do these activities slowly and correctly to avoid injury.
- Remember that drinking plenty of water is important before, during, and after physical activities

Mission Explorations:

- Count how many burpees you can properly do in 30 seconds.
- Teach someone else how to do a burpee.
- Jump as high as you can during the burpee and land softly, trying to make little noise as you land.
- Learn how to say, “5, 4, 3, 2, 1 Liftoff!” using another language and perform it together with others.