National Aeronautics and Space Administration
FIT EXPLORER MISSION HANDOUT
YOUR MISSION: Mission: Control!
You will perform throwing and catching techniques on one foot to
improve balance and spatial awareness. You will also record observations about improvements in balance and spatial awareness
during this physical experience in your Mission Journal.
All people need to have well-developed balance and spatial awareness.
If not, we would all fall over constantly and have trouble walking around
corners. Seeing our surroundings and being able to move around them is
important so we do not bump into things and get hurt.
When you are participating in athletics, especially sports such as dancing,
skateboarding, bowling, diving, and skiing, balance and spatial awareness
are very important. Even jumping on a trampoline or riding a bicycle
requires both!
MISSION QUESTION: How could you perform a physical activity that
would improve balance and spatial awareness?
MISSION ASSIGNMENT: Balance Training
Practice:

Choose a smooth-surfaced solid wall, approved by an adult for use.

Bounce a tennis ball off the wall and try to catch it while balancing on one foot. Raise your
foot up behind you, level with your knee.

Count how many seconds you can stand on one foot while throwing the tennis ball against
the wall. Try not to let the ball or your foot touch the floor. Try to balance for at least
30 seconds without falling.
Continue to practice this activity over time until you can keep your balance for 60 seconds
without having to start over.

Game:

Divide into groups, each forming a circle. Each circle should contain at least 6 players.

In your circle:

Space a distance more than arms length apart.
Try to balance on one foot while gently tossing a gym ball to a player across from you.
If a player loses balance and both feet touch the floor, he or she must hop on one foot,
around the outside of the circle before rejoining the game.

Record observations before and after this physical experience in your Mission Journal.

Follow these instructions to train like an astronaut.

MISSION: CONTROL!

Spatial Awareness:

Knowing where you It's a NASA Fact:
are in your space
compared to your During the first few days of space flight and after returning to Earth,
surroundings. astronauts experience a change in spatial awareness and may lose some
sense of balance when they return to Earth. Research scientists from
Agile: NASA's Neurosciences Laboratory closely monitor the

crew members,
Being ready and able who often report difficulty walking around corners and feeling like they are
to move quickly and “tumbling” when they move their heads from side-to-side. Their brain has
easily. to relearn how to use information from their eyes, tiny balance organs in
Coordination: their inner ear, and their muscles to help control body movement. These
Using your muscles problems are usually corrected after several weeks have passed and
together to move balance exercises are added to their fitness routine. Until then, they have
your body the way to be extra careful; which means they may not be able to do some physical
you want it to. activities like fly a plane or drive a car.
MISSION COMPLETE: Test Yourself!
Complete the practice of throwing and catching the tennis ball for 60 seconds
without reaching your hand out to an object or touching your other foot down.
Look in a mirror, or have another student watch you to check for accuracy as
you practice this activity for improving balance and spatial awareness.
Complete the balance game without losing your balance.
While exploring, astronauts must watch out
for rocks and craters in their paths to avoid tripping!
Improving your The area under your feet should be clear of all obstacles.
balance and Stay at least an arms distance from the wall and from others while
doing this activity.

spatial awareness

Do not throw the ball too hard, nor use a ball that is too heavy.

will make you

Remember that drinking plenty of water is important before, during,

more coordinated and after physical activities.

and agile. It will

decrease the

chances of being Mission Explorations:

hurt, or hurting

someone else, While standing still, stand on a soft surface and balance on one foot.

due to a fall. Examples: towel, pillow, or cushion.

Time yourself while trying to balance on two feet with your eyes closed.

Open your eyes if you start to lose your balance.

While practicing simple balance activities, you can also lift one foot

to increase the difficulty.

Status Check: Have you updated your Mission Journal?

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Think Safety!