

## TOUGHEN UP

As an astronaut travels in orbit, their equilibrium is thrown off. Some astronauts get dizzy and even sick during space flight. Your ear has a small amount of liquid inside that keeps you balanced. When in orbit, your body does not have the same amount of gravity that helps keep you balanced. You can alter your equilibrium by spinning around.

**Grade Level: K - 2****Duration:** 15 minutes**Group Size:** Paired in twos**Standards:** Physical Education PE.A.3.1, Science SC.H.1.1**Material**

hula-hoops

soft rubber or foam balls

**Procedure**

1. Pair up in groups of two.
2. One partner will hold out the hoop like a basket. The other partner stands about five feet away from the hoop.
3. Toss the ball into the hoop. How easy is it to make it into the hoop each time?
4. Spin around 10 times and now toss the ball into the hoop. Can you still throw the ball into the hoop? Is it easier or harder to make a basket?
5. Switch places and let your partner try throwing the ball in the hoop.

**Evaluation**

Was it easy to throw the ball before spinning around? Were you able to put the ball in the hoop after spinning around?

**Extension**

Spin around and try to do activities you routinely do everyday like tying your shoe. Is it difficult? Imagine how it would be in outer space - you have a constant feeling like you are falling all the time.

Source - <http://www.reporter-archive.mcgill.ca/Rep/r3003/space.html>



## QUICKEN THE PACE

Astronauts go through extensive physical training before going up in space. They use their heart rate as a way to monitor whether or not everything is ok in their body. Your body needs more oxygen during exercise. Oxygen flows through the body in your blood. The heart has to pump quicker to meet the needs of a body that is exercising.

**Grade Level: K - 2****Duration:** 15 minutes**Group Size:** Class**Standards:** Science SC.H.2.1, The Arts DA.A.1.1**Material**

stopwatch

pencil

paper

**Procedure**

1. Locate your heartbeat or pulse on your neck.
2. Count the number of heartbeats in 10 seconds. If you have trouble counting, just feel the pattern of the heartbeat. Determine if it is fast, medium, or slow.
3. Record the number of beats on a piece of paper or write down if the beats are slow, medium, or fast.
4. Jog in place for 30 seconds.
5. Count the heartbeats again and write that number down or determine if the heart-beat pattern has changed.
6. Run in place as fast as you can for 30 seconds.
7. Count the number of heartbeats or determine if there was a change in the pattern.

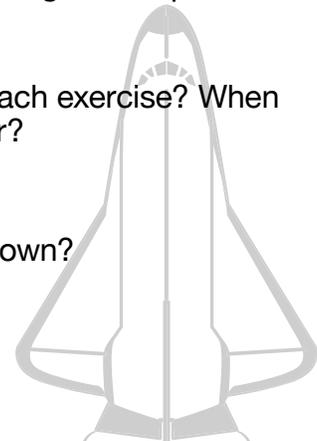
**Evaluation**

Did you feel a difference in how fast your heart was beating after each exercise? When was your heartbeat the slowest? What makes your heartbeat faster?

**Extension**

Find activities that alter your heart beat. Can you slow your heart down?

Source - <http://marsville.enoreo.on.ca/crew/training/fitness.htm>



## FIX IT IN SPACE

Have you ever noticed how astronauts in space seem to float around? This makes it difficult to do simple jobs in space. Imagine trying to turn a doorknob while floating in mid-air. You may find yourself spinning around instead. Try it!

**Grade Level: K - 2**

**Duration:** 5 minutes

**Group Size:** Paired in twos

**Standards:** Science SC.C.1.1, Physical Education PE.A.1.1

**Material**

swivel chair that spins freely

empty plastic jug or jar with a twist top lid

**Procedure**

1. Sit on a swivel chair with your feet raised off the ground.
2. Get your partner to securely hold a jar with the lid in front of you.
3. Try to unscrew the top off the jar while seated in the chair. Make sure that your partner has a tight hold on the jar, and that only the lid unscrews, not the jar. What happens? The seat begins to spin because there is no friction from your feet to hold you still. The energy used to turn the jar is now turning you.
4. Try it again, this time keep your feet on the floor.
5. Switch places with your partner and try it again.

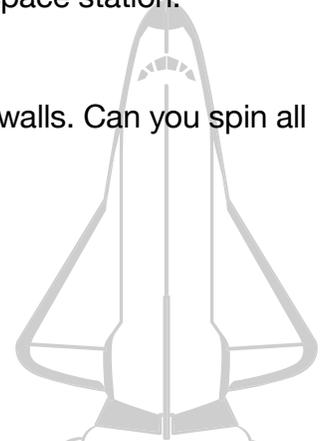
**Evaluation**

Make a list of jobs that would be difficult to do while in orbit on a space station.

**Extension**

Try to spin around in the chair without pushing off the floor or any walls. Can you spin all the way around?

Source - <http://www.spacenet.on.ca/stories/medicine/VCF/vcf.htm>



## STARS STORIES DO TELL

For many years people have looked to the stars for many reasons. They used the stars to navigate at night and some have even said they could tell the future from the stars. Most people who look to the stars tell stories for entertainment and to help them remember the names of the stars. Head out to outer space and tell a story of your own.

**Grade Level: K - 2**

**Duration:** 15 minutes

**Group Size:** Any

**Standards:** Language Arts LA.E.1.1, Science SC.E.2.1

**Material**

the night sky

styrofoam cups

toothpick

flashlight

**Procedure**

1. Look at the stars and imagine what it would be like to be in space.
2. Find shapes in the starry sky and tell a story of your own based on these shapes.
3. Make your own constellation by poking holes into the bottom of a cup.
4. Show off your constellation. Place a flashlight inside the cup and tell a story about your constellation.

**Evaluation**

Draw a picture of your favorite star formation.

**Extension**

Learn a story about a constellation. Can you share your new story with a friend?

Source - <http://clevermedia.com/arcade/const.html>

