YOUR MISSION: Get on Your Space Cycle!

One exercise device that has been used by astronauts on the International Space Station since it was manned ten years ago is the cycle ergometer. As astronauts do, you will train with a cycle to improve leg muscles, cardio-vascular fitness and endurance. As astronauts care for the Earth, you will also contribute to the safeguard of our planet by trying to avoid the use of motorized vehicles for transportation.

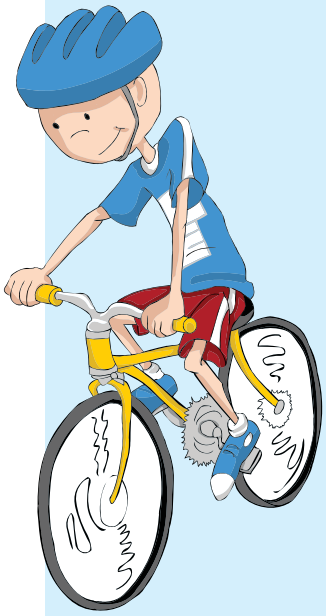
Cycling helps to strengthen heart, vessels and lungs for endurance, as well as legs muscles. Cycle training will get you used to long-distance cycling and you will be able to spend your time visiting new places with your friends and family without needing a car. You will also improve your coordination, balance and focus on the environment around you. A stronger heart and more muscular endurance will allow you to play and run for a much longer time.

MISSION QUESTION:
How could you perform a physical activity that will strengthen your leg muscles, cardiovascular system and contribute to a less polluted environment?

MISSION ASSIGNMENT: Cycle Training

- ◯ To perform the exercise, you will need a cycle.
- ◯ This exercise is a homework activity.
  - To perform the activity you have to ride your bike 1 day from home to school back and forth and report the activity to your teacher.
  - If for any reason your family cannot accompany you to school by cycle or you live too far from school, you can cycle during your free time for 3 km (1.8 miles) and report the activity to your teacher (where you went, how long, when…)
- ◯ You will record observations about improvements in this cycling training in your Mission Journal.

Follow these instructions to train like an astronaut.



Cycling improves endurance fitness, as well as body coordination, which supports posture and balance. These things help you to have a good posture, and stability, move in good balance in all situations. This also helps you to participate in most kinds of sport. It will also exercise your circulation and strengthen your leg muscles (so that you can better run and play). Last but not least, you will give your contribution to use the cycle as an ecologically friendly means of transportation.

It's a Space Fact

Physical exercise is part of the daily routine of astronauts on the International Space Station (ISS). Muscle and bone carry less load in weightlessness and get weaker; about 2 hours of daily exercise slows down muscle loss and loads the bones in the skeleton. The ISS has an exercise cycle which provides bone strength exercise for the legs. When the large leg muscles work they need more blood. Working muscles stimulate the heart to pump more blood, and you breathe faster to get more oxygen in.
Cycle training on the ISS also maintains endurance and cardio-vascular fitness of the astronaut. The ISS has an exercise cycle which is used for endurance training. The exercise cycle used by European astronauts on the space station is called the Cycle Ergometer with Vibration Isolation and Stabilization, or CEVIS. Cosmonauts, the Russian astronauts, also have a cycle called VELO.

Coordination:
Using your muscles together to move your body the way you want it to.

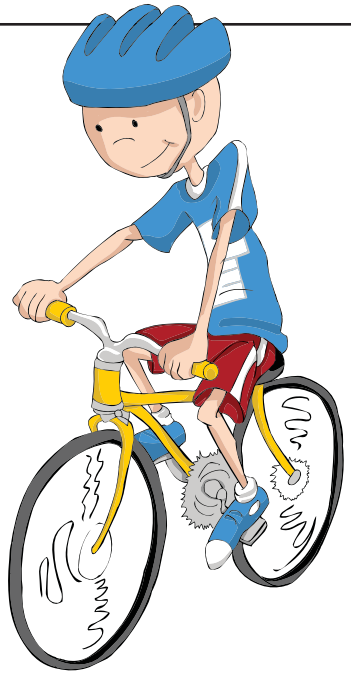
Muscle strength:
Ability to use your muscles to move or lift things, and yourself.

Endurance:
Ability to withstand physical fatigue during extended physical activity, like cycling or running fast over a long distance.

Cardiovascular System:
Part of the body where blood flows, i.e. heart and blood vessels. It is the body system for transport and use of oxygen to provide the 'fuel' to muscles and organs.

Fitness Acceleration

- ◯ Ride your cycle to school for two days.
- ◯ Involve you family , pick two different days to ride your cycle to school with two members of your family (in two different occasions)
- ◯ Ride your bicycle to school four days out of the week.



Think Safety!

Scientists and Astronaut Strength, Conditioning & Rehabilitation (ASCR) Specialists working with the astronauts must make sure they have a safe environment in which to practice, so that the astronauts can't get injured. Therefore, make sure:

- ▭ To wear appropriate attire for cycling such as a helmet and knee and elbow pads.
- ▭ To follow all cycle safety rules and follow all traffic rules: http://kidshealth.org/parent/firstaid_safe/outdoor/bike_safety.html
- ▭ To listen to the advice of the adult who is cycling with you

Mission Explorations

- ◯ On the weekend, take a cycle ride to explore your neighbourhood.
- ◯ Ride your cycle to school or to visit your friends more often than you usually do.
- ◯ Find a location close to home and plan a cycle day trip with your family.

Status Check: Have you updated your Mission Journal?