

The NASA SCI Files™
The Case of the Physical Fitness Challenge

Segment 4

As the tree house detectives start to pull all the pieces together, they are beginning to realize that being physically fit involves more than they thought and that they need to make lifestyle changes. For some advice on how to be physically active for life, they visit Mr. Lynn Swann, former NFL football player and ABC Commentator, who also just happens to have been the Chairman for the President's Council on Physical Fitness and Sports. Mr. Swann helps the detectives learn that physical activity should be fun and something you enjoy doing so that you continue to be active. Meanwhile, the kids back in Scotland have been doing some more research of their own, and they head to the RRS *Discovery* to meet astronaut Alvin Drew to learn what NASA is doing to help keep astronauts healthy during long-duration space travel. Finally, the detectives are ready to put all the pieces together to help RJ get in shape, and they meet Dr. D for a wrap-up explanation that a healthy lifestyle includes many things, but especially proper nutrition and daily physical activity.

Objectives

Students will

- demonstrate the importance of stretching activities before and after exercise.
- simulate the effect of a reduced gravity environment on the human body.
- measure the effects of gravity on the spine.
- make a model of a spine.
- demonstrate the importance of flexibility to movement.
- learn the benefits of an active lifestyle.

Vocabulary

aerobic endurance – ability to do moderately strenuous activity over a period of time; reflects how well your heart and lungs work together to supply oxygen to the body during exertion

flexibility – ability to move a joint through its full range of motion

healthy body composition – proper balance of fat in your body compared to your bone and muscle

muscle endurance – ability of muscles to hold a particular position for a sustained period or repeat a movement many times

muscle strength – ability of muscles to exert maximum force, such as lifting the heaviest weight you can, one time