

# Adult Guidance

## Mighty Muscles

### Movement

Some children will believe that the bones as a result of joints enable movement. This misconception is addressed in this lesson in the unit. By themselves the bones would not move except as a result of external forces – such as wind, or being knocked in a certain direction. In fact, if there were no muscles there is a good chance we would be a heap on the floor – albeit it with a shape, protection for our organs and support for our body.

In order to enable what we think of as movement, we need to be able to control the bones and their position. This is why muscles are essential. They give us control over the skeleton and enable us to move our body.

### Muscles

All muscles in the body operate in pairs. As one contracts, the other relaxes and vice versa. This allows us to move our bodies and control the movement. Although we are still subject to external forces, we can react to them. A skeleton by itself would simply be a passive entity. Muscles enable us to be active and that is why the nutrients we need even in small amounts such as vitamins and minerals are so essential. Refer back to learning earlier in the unit to recap and remind children of the importance of certain nutrients. Ensure that children have a good understanding of why muscles are vital to movement and what the control over our movement enables us to do – such as hold a pencil which a skeleton with joints alone could not do.

### Smooth Muscle Tissue

Smooth muscle tissue can be found in the heart, lungs, digestive organs, organs that excrete and also in the blood vessels.

### Brain

Sometimes the brain is referred to as a muscle and this misconception may arise and need to be addressed in your lesson. The brain consists of brain tissue formed by brain cells. Blood vessels containing smooth tissue supply the brain with blood. While the brain controls movement of muscles it does not move anything around the body as opposed to the heart which pumps blood around the body.

### Voluntary and Involuntary Muscle Movements

Skeletal muscles – those attached to our skeleton – can be moved voluntarily while organs that contain muscle tissue are moved involuntarily. Explore the reasons why this might be the case with the children – e.g. why can't we just stop ourselves from breathing? Some children will think they do have control over breathing for example and while there is some small level of control remind the children that if they held their breath eventually the lungs would force the involuntary movement of breathing in air regardless of our conscious wish.