

The main organ of the respiratory system is the lungs. Other respiratory organs include the nose, the trachea and the breathing muscles (the diaphragm and the intercostal muscles). The nose and trachea

Breathing in through the nose warms and humidifies the air that is breathed in. Nose hairs help to trap any particles of dust. The warmed air enters the lungs through the windpipe, or trachea. The trachea is a hollow tube bolstered by rings of cartilage to prevent it from collapsing. The lungs

The lungs are inside the chest, protected by the ribcage and wrapped in a membrane called the pleura. The lungs look like giant sponges. They are filled with thousands of tubes, branching smaller and smaller. The smallest components of all are the air sacs, called 'alveoli'. Each one has a fine mesh of capillaries. This is where the exchange of oxygen and carbon dioxide takes place. The breathing muscles

To stay inflated, the lungs rely on a vacuum inside the chest. The diaphragm is a sheet of muscle slung underneath the lungs. When we breathe, the diaphragm contracts and relaxes. This change in air pressure means that air is 'sucked' into the lungs on inhalation and 'pushed' out of the lungs on exhalation. The intercostal muscles between the ribs help to change the internal pressure by lifting and relaxing the ribcage in rhythm with the diaphragm