Human Body Systems

Explore the wonders of the human body!

10 A4 Learning Cards

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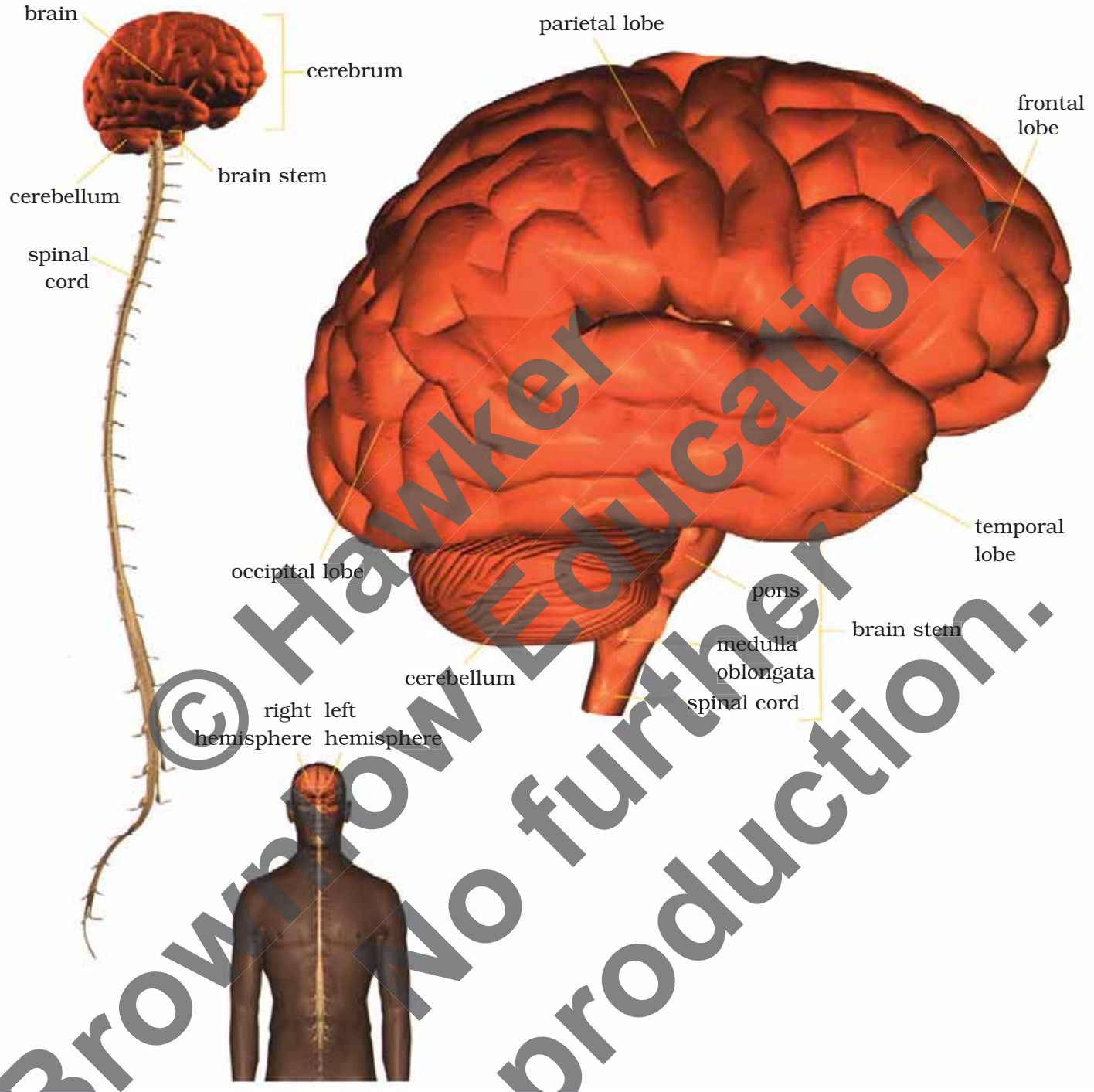
Nervous System

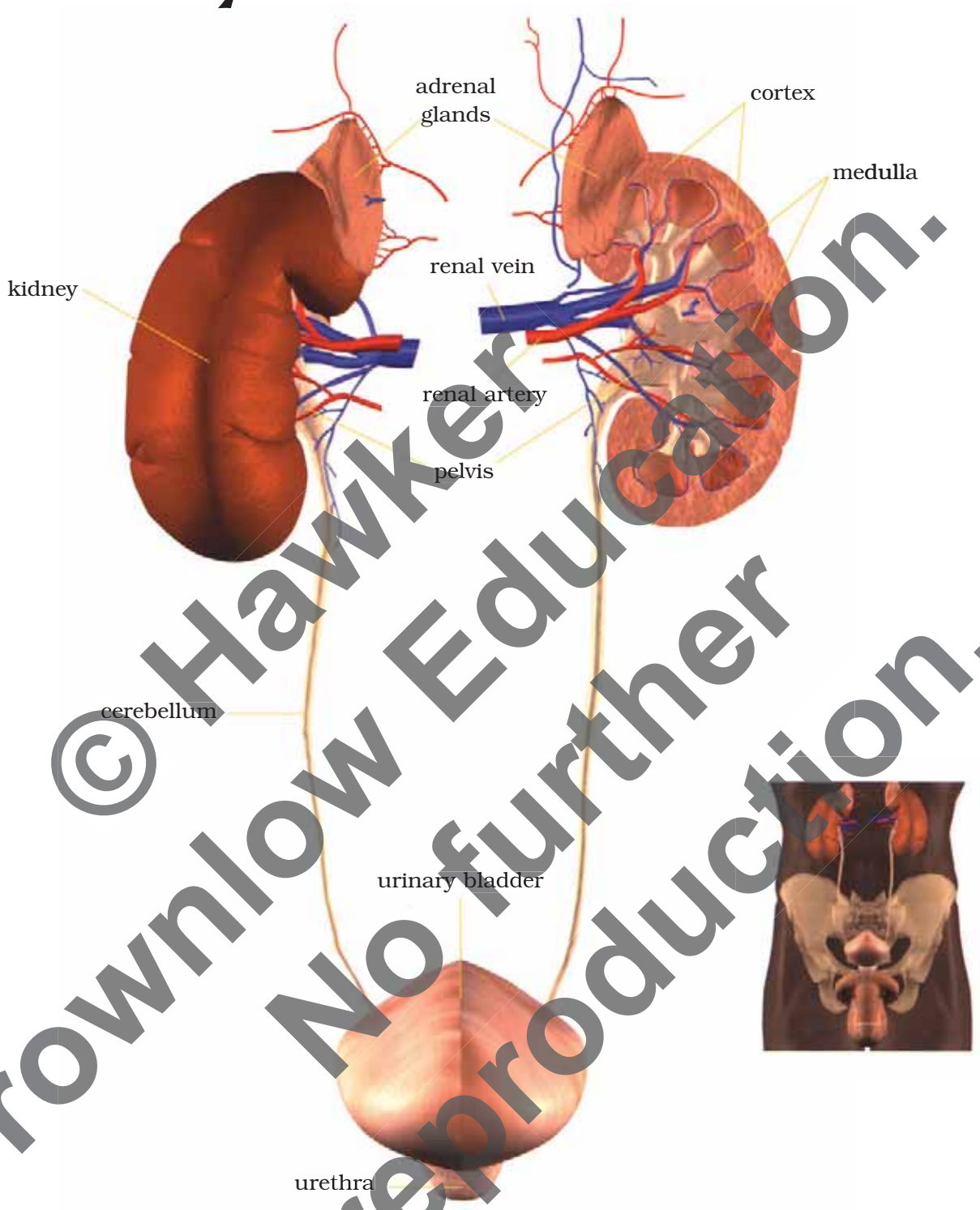


The nervous system sends information about touch, pain, temperature, pressure, vibration, and sense of position through the brain, spinal cord and nerves.

The brain weighs about 1.4 kg and requires lots of oxygen to function properly. Each of the brain's three major parts has different responsibilities. The cerebrum enables you to think, speak, sense, remember, learn, imagine and feel emotion. The cerebellum assists with balance, posture and muscle coordination. The brain stem subconsciously regulates a number of body functions, such as breathing, blood pressure, digestion and heartbeat. It also maintains body temperature and warns of hunger, thirst and fatigue. During sleep, the brain keeps working. The cerebrum and cerebellum are divided into two hemispheres, or halves. Each half of the cerebrum has four small divisions called lobes.

The spinal cord begins at the base of the brain stem and extends down the back. The brain and spinal cord connect to organs through a network of nerves, or bundled neurons. Information gathered by touch and the other senses is sent to the brain or spinal cord along sensory neurons. The information is quickly studied. Then, a message telling the body how to react is carried along motor neurons to the muscles. Most response decisions come from the brain, but reflexes are controlled by the spinal cord. For example, your hand pulls away from a hot object

Urinary System

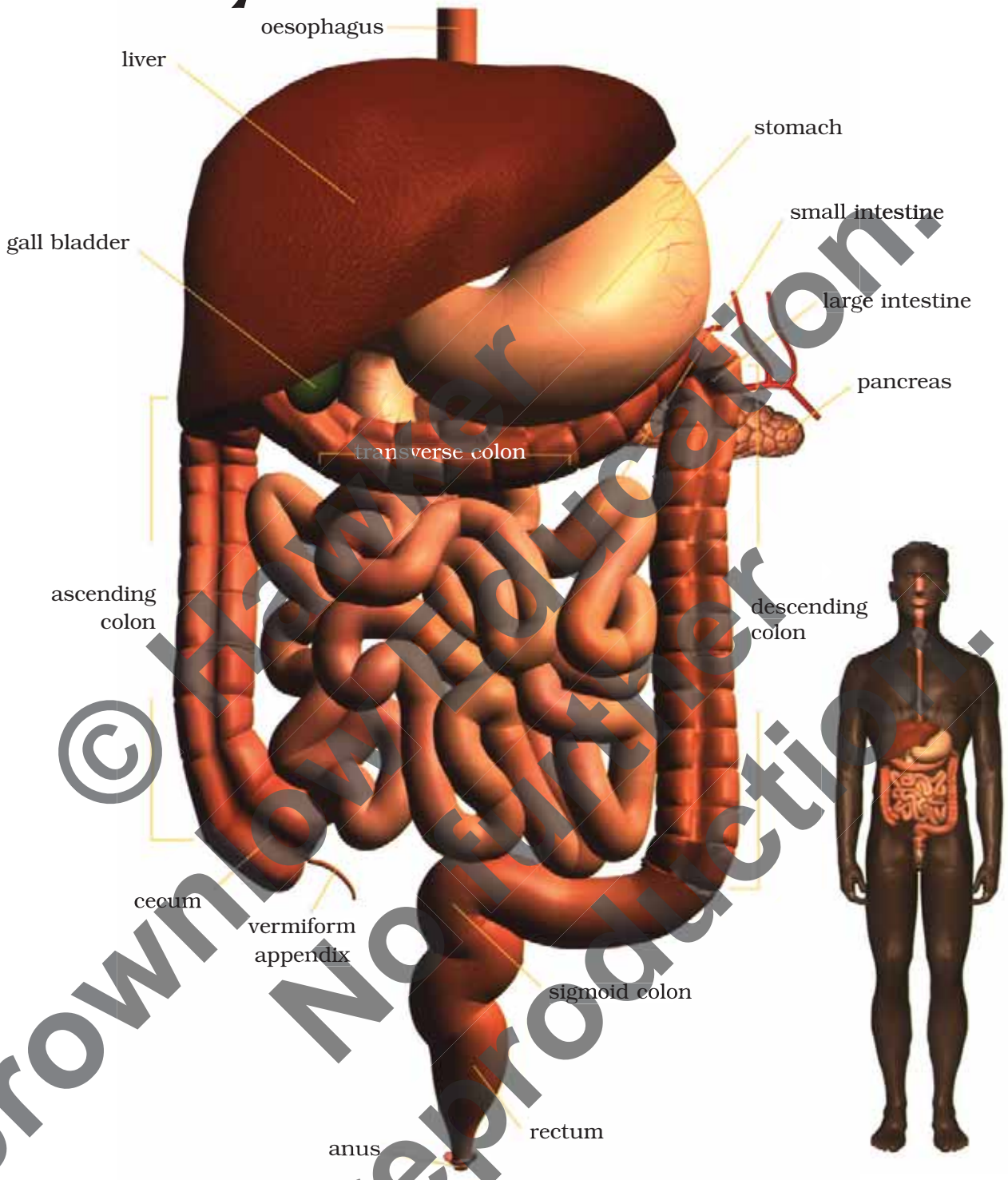


The urinary system is the body's main excretory system. The central organs are the two kidneys, which work to filter waste out of the blood and produce urine.

Blood enters a kidney through the renal artery and flows through smaller arteries into the medulla. Each blood vessel leads to a glomerulus, a tiny looping, twisting tube with small holes in it. Water and other substances leak out of the glomeruli and are collected in nephrons, or filtering tubes. Substances used by the body, including amino acids, glucose, and almost all of the water, are reabsorbed by blood cells. Waste and salts like ammonia and sodium, are gathered by small tubes called collecting tubules. From the tubules, urine passes into the kidney's pelvis, through a ureter, and into the urinary bladder. Urine exits the body through the urethra when the bladder is full. Each day, the kidneys filter about 190 litres of blood to produce about 1–2 litres of urine. Your kidneys create less urine when you perspire and more when you drink lots of liquids.

Besides urine production, your kidneys control red blood cell production, make vitamin D for bone development, and help maintain blood pressure.

Digestive System



The digestive system breaks down food to give our body cells energy. Digestion begins in the mouth when the teeth break down food and mix it with saliva. Swallowed food moves down the oesophagus, through a tight opening, and into the stomach. Here, food mixes with acid and is digested further to form a semi-liquid called chyme. When ready, the chyme is squirted, bit by bit, through the pylorus – a valve at the bottom of the stomach – to the small intestine.

The small intestine is about 6 metres long and does most of the digestion. Here, chyme mixes with bile, as well as pancreatic and intestinal juices. The passes them on to the blood cells. This blood travels to the liver, where useful substances are removed and then recombined to meet the needs of the body's cells. The liver also transforms nutrients into glucose, produces the clotting substance in blood, aids in red blood cell production, and filters poisonous materials from blood. Unused substances in the small intestine move to the large intestine, where water and minerals are absorbed. Any remaining waste product, called faeces, leaves the body through the anus.

The stomach churns constantly. Hunger pangs occur when gas and acid squeeze against the wall of an empty stomach.