

**8Ba – Energy for life**

| Word                | Pronunciation                           | Meaning  |
|---------------------|---|--|
| aerobic respiration | <i>air-rO-bick<br/>ress-per-ay-shun</i> | Process that releases energy from glucose. Needs oxygen from the air. Carbon dioxide and water are produced as wastes. |
| carbohydrate        | <i>car-bO-high-drate</i>                | Nutrient that is used as the main source of energy.  |
| digested            |   | When food has been broken down into smaller pieces.  |
| glucose             |   | A type of sugar.   |
| product             |   | New chemical formed in a chemical reaction.  |
| reactant            |   | Chemical that is used up in a chemical reaction.   |
| respiration         | <i>ress-per-ay-shun</i>                 | Process that releases energy in living things.   |
| word equation       |   | A way of writing out what happens in a chemical reaction.  |

**8Bb – Round and round**

| Word               | Pronunciation          | Meaning   |
|--------------------|------------------------|---|
| absorb             |                        | To take in (e.g. when soluble substances pass through the wall of the small intestine and into the blood).                        |
| artery             |                        | Blood vessel that carries blood away from the heart.  |
| blood vessel       |                        | Tube that carries blood.  |
| capillaries        | <i>cap-ill-arr-ees</i> | The smallest blood vessels. Substances enter and leave the blood through the thin walls of capillaries.                           |
| chamber            |                        | The heart contains four compartments called chambers.   |
| circulatory system |                        | Organ system containing the heart and blood vessels.  |
| heartbeat          |                        | One pump of the heart.  |
| heart              |                        | Organ that pumps blood around the body.   |
| model              |                        | A scientific way of thinking about how or why things happen. Allows you to more easily think about how a complicated thing works. |
| plasma             |                        | Part of the blood. A liquid that surrounds the blood cells.   |
| pulse              |                        | The feel of your blood being pumped.  |
| pulse rate         |                        | The number of times you can feel your blood being pumped in one minute.   |
| red blood cells    |                        | Cells in the blood that carry oxygen.   |
| theory             | <i>theer-ree</i>       | A scientific idea that can be tested.   |
| tissue fluid       |                        | The liquid formed when plasma leaks out of capillaries, carrying oxygen and food to cells.  |
| vein               | <i>vane</i>            | Blood vessel that carries blood to the heart.   |

**8Bb – Focus on: Ideas about circulation**

| Word   | Pronunciation | Meaning   |
|--------|---------------|---|
| septum |               | The part of the heart that separates the chambers on the right from the chambers on the left. |

**8Bc – Into thin air/What's your poison?**

| Word           | Pronunciation       | Meaning  |
|----------------|---------------------|--|
| aerobic        | <i>air-ro-bick</i>  | Means 'requiring air' – or, more properly, 'requiring oxygen from the air'.  |
| breathing rate |                     | The number of breaths you take in a minute.  |
| carbon dioxide |                     | A product of respiration.  |
| concentrated   |                     | Something that has a large amount of the substance in it and very little water or other impurities.  |
| emphysema      | <i>em-fe-see-ma</i> | A disease in which the lungs cannot take much oxygen out of the air because the alveoli join together, reducing the surface area. Caused by breathing in dust and smoke. |
| excreted       |                     | When waste materials are removed from the body they are excreted.  |
| heart attack   |                     | When heart muscle tissue starts to die.  |
| heart disease  |                     | When blood vessels taking blood to the heart muscle become blocked.  |

**8Bc – Focus on: Anaerobic respiration**

| Word                  | Pronunciation         | Meaning  |
|-----------------------|-----------------------|--|
| anaerobic             | <i>an-air-ro-bick</i> | Means 'not requiring air' – or, more properly, 'not requiring oxygen from the air'.      |
| anaerobic respiration | <i>an-air-ro-bick</i> | A form of respiration that does not use oxygen.  |
| oxygen debt           | <i>ox-ee-jen det</i>  | The amount of oxygen needed to break down all the extra lactic acid after hard exercise. |

**8Bd – Exchange rates**

| Word             | Pronunciation       | Meaning  |
|------------------|---------------------|--|
| air sacs         |                     | Groups of alveoli in the lungs. Gas exchange occurs here.  |
| alveolus         | <i>al-vee-O-lus</i> | Small, round pocket that is grouped with other alveoli to form air sacs in the lungs. Plural = alveoli.                              |
| breathing        |                     | Moving muscles in order to make air flow into and out of the lungs.  |
| breathing system |                     | Set of organs (lungs, windpipe, diaphragm) that allows air to be taken into and out of the body. Also called the respiratory system. |

**8Bd – Exchange rates (continued)**

| Word                     | Pronunciation                                      | Meaning  |
|--------------------------|--|--|
| bronchus                 | <i>brank-us</i>                                    | Tube that connects the windpipe to smaller tubes in the lung that lead to the air sacs. Plural = bronchi.                          |
| cilia                    | <i>sil-lee-a</i>                                   | Small hairs on the surface of some cells.  |
| ciliated epithelial cell | <i>sil-lee-ay-ted</i><br><i>ep-pee-theel-ee-al</i> | Cells with cilia that are found in the lungs.  |
| diaphragm                | <i>dye-aff-ram</i>                                 | Sheet of muscle under the lungs. When it moves down your lungs get bigger.   |
| diffusion                | <i>diff-you-shun</i>                               | The natural movement of particles from a place where there are a lot of them to a place where there are fewer of them.             |
| digestive system         |  | Set of organs that carry out digestion.  |
| exhale                   |  | To breathe out.  |
| gas exchange             |  | Taking oxygen into the blood and getting rid of carbon dioxide into the lungs.   |
| inhale                   |  | To breathe in.   |
| mucus                    |  | Slimy substance that traps dirt and microbes and is moved out of the lungs by cilia.   |
| respiratory system       |  | Set of organs (lungs, windpipe, diaphragm) that allows air to be taken into and out of the body. Also called the breathing system. |
| trachea                  | <i>trak-ee-a</i>                                   | Tube carrying air into and out of the lungs. Also called the windpipe.   |
| ventilation              |  | Air moving into and out of the lungs.  |
| windpipe                 |  | Tube carrying air into and out of the lungs. Also called the trachea.  |

**8Be – Respiration detection/Cheat!**

| Word                        | Pronunciation | Meaning   |
|-----------------------------|---------------|---|
| behaviour                   |               | The way an organism acts, or reacts to things around it.  |
| environmental factor        |               | Something in an environment that can change something about an organism.  |
| exhaled air                 |               | Air that you breathe out.   |
| gill                        |               | A series of flaps of tissue with a good blood supply just behind the head of an organism that is used to take oxygen out of water. Fish have gills. |
| hydrogencarbonate indicator |               | An indicator that can be used to show how much carbon dioxide there is in something.  |
| indicator                   |               | A chemical that changes colour depending on how acidic or alkaline a liquid is.   |
| inhaled air                 |               | Air that you breathe in.  |
| inherited variation         |               | Differences between organisms passed on by their parents in reproduction.   |