

12 Respiration and energy – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Respiration	呼吸作用	_____	_____	_____
energy	能量	_____	_____	_____
muscle	肌肉	_____	_____	_____
proteins	蛋白质	_____	_____	_____
cell division	细胞分裂	_____	_____	_____
active transport	主动运输	_____	_____	_____
temperature	温度	_____	_____	_____
Aerobic respiration	有氧呼吸	_____	_____	_____
oxygen	氧气	_____	_____	_____
glucose	葡萄糖	_____	_____	_____

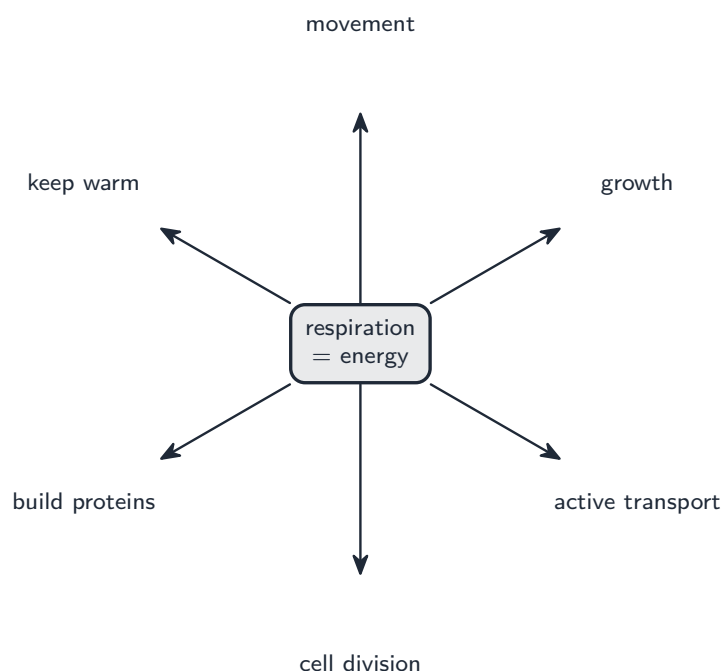
Recall

Respiration 呼吸作用 is the release of **energy** 能量 from food. It happens in **every** living cell, all the time. (It is **not** the same as breathing.)

New ideas

Read these first, then do the Practice.

■ 1 What the energy is for



Cells use the energy for **muscle** 肌肉 contraction, building **proteins** 蛋白质, **cell division** 细胞分裂, **active transport** 主动运输, growth, and keeping a steady body **temperature** 温度.

■ 2 Aerobic respiration

Aerobic respiration 有氧呼吸 uses **oxygen** 氧气 to break down **glucose** 葡萄糖, releasing a **lot** of energy:



Watch out: respiration releases energy *inside cells* — it is **not** the same as breathing (which just moves air). **Aerobic** respiration uses oxygen and releases a **lot** of energy: $\text{glucose} + \text{oxygen} \rightarrow \text{carbon dioxide} + \text{water}$.

Practice

Try these in order.

12.1 What is *respiration*? [1]

12.2 Give two jobs the body uses respiration energy for. [2]

12.3 Is respiration the same as breathing? [1]

12.4 Write the word equation for aerobic respiration. [2]

12.5 Which gas does aerobic respiration use? [1]

12.6 Challenge. A muscle cell and a root cell both respire all the time. Suggest one use of the energy in each. [2]