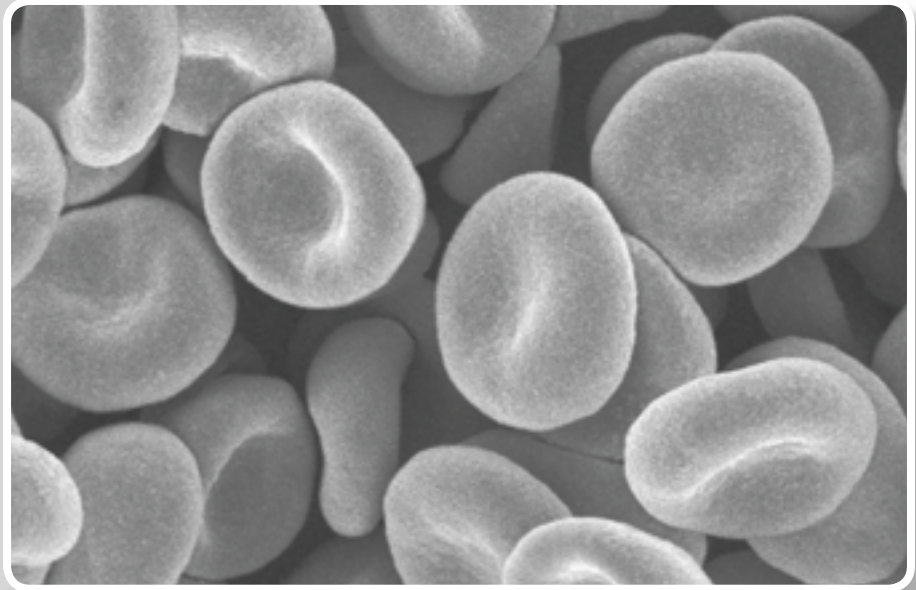


Human Body

Take a tour inside your amazing body!

This teachers' supplement should be used in conjunction with *Project Pull-out #18: The Human Body*, which is found in DMAG's issue 70, January 2008. The pull-out will inspire students to learn about the human body, its various systems and how they work.



These activities encourage students to:

- Understand how living things grow, move, breathe, take in nutrients and eliminate wastes
- Propose explanations using simple observations
- Recognise that the results of investigations can lead to more questions
- Recognise that discoveries can be made through play, exploring and experimenting
- Learn how to display data through graphs and images

Science and Technology:

A Look Inside: The Human Body

Not-so-scary skeletons

Ask the class if they've seen a skeleton. Ask who thinks bones are living or dead and take a vote on it. Write the results on the board. Now ask the class to think about when they grow taller. Do their bones

grow as well? [Yes]. Can dead things grow? [No]. And what happens when people break bones in their body – do they mend? Now take another vote on whether bones are alive.

As a class, read page 48-49 of DMAG Issue 70.

Discuss the article – it says that bones are living. What are some of the things bones do for our bodies? Brainstorm the list on the board. Here are a few things the students might answer:

- Give our bodies a framework
- Support our organs
- Increase our strength
- Determine our movement
- Protect important parts of the body e.g. heart, lungs, brain
- Make red blood cells

Do the movements described in the section 'It's connected'. Talk about the joints described. Where else do we use joints? [e.g. a door]

Extension task: Ask the students to break into pairs. Each pair of students is to model a pair of legs connected to a pelvis (hips). They don't need to include ankles. What two types of joints will they need to investigate? [Hinge and ball-and-socket joints].

Ask each pair to:

- 1) Research each of these joints
- 2) Draw each joint
- 3) Make the model of the pair of legs. They can use real hinges available from hardware stores, or toys, or make the joints themselves.

Super systems

Explain to the class that, not only do they each have a skeleton, they also have stacks of other systems working in their bodies e.g. cardiovascular, digestive, nervous, respiratory, muscular, endocrine and lymphatic systems. Break the class into small groups and assign each group one of these systems to research. In their

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research, ask each group to find out the following:

- What is the system's job?
- What parts of the body belong to their system?
- Where are the parts located?
Draw a diagram to show them in the body.
- Any interesting facts about their system?

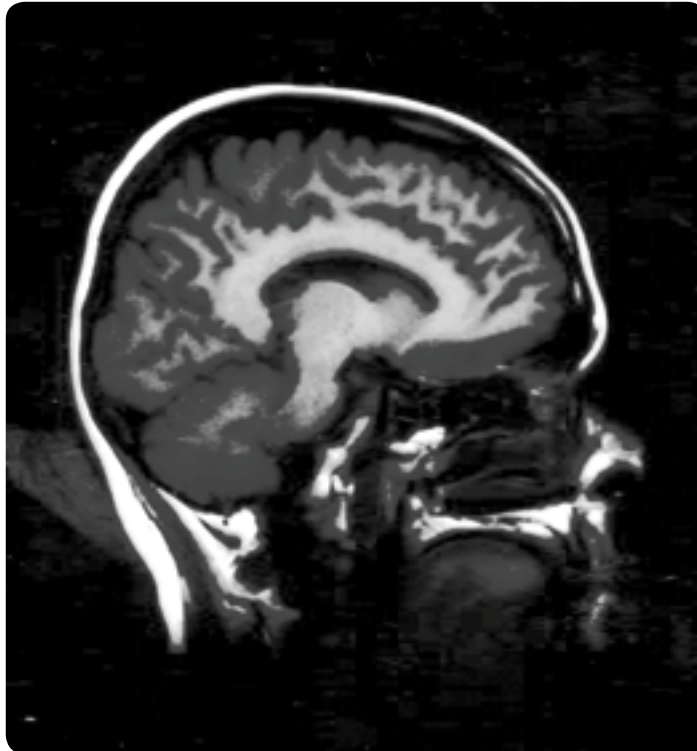
Each group is to present their findings to the class.

Mathematics: The beat of my heart

Test out how the heart is made to pump harder during exercise by getting each student to measure his or her pulse-rate at rest and after exercise. Firstly ask the students to find their pulse. There are a number of ways to do this:

- Hold your forefinger and middle finger to the right side of your neck, just under the top of your jaw. If you can't feel your pulse then...
- Turn your left hand palm-side up and place the forefinger and middle finger of your right hand just below the wrist of your left hand on the thumb side.

Once each student has found a pulse, ask them to count how many beats they feel within a timed 15-second period. Multiply this number by 4 and this is their resting pulse-rate per minute. Write this in the first column of the table. Ask the students to hypothesise what will happen to their heartbeat when they exercise.



concluded from these results?

Discuss with the class what other signs there are that the body works harder during exercise than at complete rest.

- Are they breathing harder?
- Are they sweating?
- Do their muscles hurt?
- Do they feel thirsty?

Discuss as a class why all these symptoms occur.

Read the article called *Move It!* on page 50-51 and discuss it in light of the above.

Now ask the students to test their hypotheses. Ask them to walk, jog and run for one-minute periods around the classroom or playground. After each, make sure they count their pulse rate for 15 seconds (remember to multiply this answer by 4) and fill in their results in the table below.

Using the results, each student is to draw a line graph with the type of exercise along the X-axis and the number of beats along the Y-axis. What do the graphs look like? Are they similar or different? What can be

English:

Ask the class to write a 500 word creative piece about a journey inside the human body. The story can begin with the following sentence: *I was just sitting there, minding my own business when suddenly...*

Alternatively, ask the students to imagine that the bones in their body have suddenly turned to mush, what would happen?

Visual arts:

Ask each student to illustrate the above story.

Exercise	Resting	Walking	Jogging	Running
Number of beats				