

FIGHTING FIT - A HEALTHY MIND

Everyone knows that exercise and a good diet are important to keep your body healthy. But did you know that the kinds of foods you eat also affect your brain? Eating the right foods can boost your IQ, improve your memory and help you to feel happy. Boost your brainpower by



- **Eating breakfast:** It is the most important meal of the day. Your brain needs carbohydrates and protein to work properly. Try the following breakfasts - cereal (preferably wholegrain and without added sugar), yoghurt and an apple; or scrambled eggs, wholegrain toast and a glass of orange juice to give you the kick-start you need. For a power breakfast, try beans on wholegrain toast with a glass of pomegranate juice.
- **Exercising your mind:** The mind is like a muscle. Use it or lose it. Play memory games, like 'go fish'. Crosswords and Sudokus are also fun brain activities.
- **Drinking more:** Don't wait until you feel thirsty to drink something. You should aim to drink 8 glasses of water a day, although some of this can come from juices and milk. A thirsty brain cannot think or process information accurately.

- **Eating brainy foods:** Superfoods give you more nutrients per calorie and help protect you from diseases like cancer and heart disease. Omega-3 is a fat found in oily fish, like salmon and sardines. Snack on foods like nuts, seeds, blueberries, grapes and dark chocolate and you'll think clearer and be happier.

Follow these tips and you'll feel on top of the world and ready to take on any challenge that comes your way.

NOW Exercise your brain by finding the words underlined in 'Fighting Fit - a healthy mind' and with the remaining letters reveal the hidden message.

S Y S O P R J S F N U S T
 E E A T E R E U I A D E S
 X R T C N N O A I O T I A
 E Y N A I E R T O C H T F
 R A T D R G I F E A E I K
 C C R S E D R B P I R V A
 I A A L R E Y P T E N I E
 S E O L P I I H T U W T R
 E H H U O E H A O Y N C B
 W A S T R R W T Y B L A O
 R E W O P N I A R B R I U
 S E I R R E B E U L B A O
 C H O C O L A T E E A T C

Hidden message: _____



BLOWN-UP BIOLOGY

To celebrate World Digestive Health Day 2007, 750 5th and 6th class pupils visited University College Cork for an amazing multimedia show, called "Blown-up Biology". With the use of a microscope and real-time video, students saw the wonderful world of living cells, beginning with simple, single-celled organisms called amoeba, right up to human cheek cells.



Pictured are Ian Russell with pupils from Glasheen Boys National School

The Alimentary Pharmabiotic Centre is a research centre funded by Science Foundation Ireland and is a partnership between University College Cork, Teagasc (Moorepark) and Industry.



CONTACT DETAILS:

Andrea Doolan, Alimentary Pharmabiotic Centre
 Biosciences Institute, Rm 5.12, University College Cork
 Email: apc@ucc.ie Web: <http://microbemagic.ucc.ie>

Microbe Magic



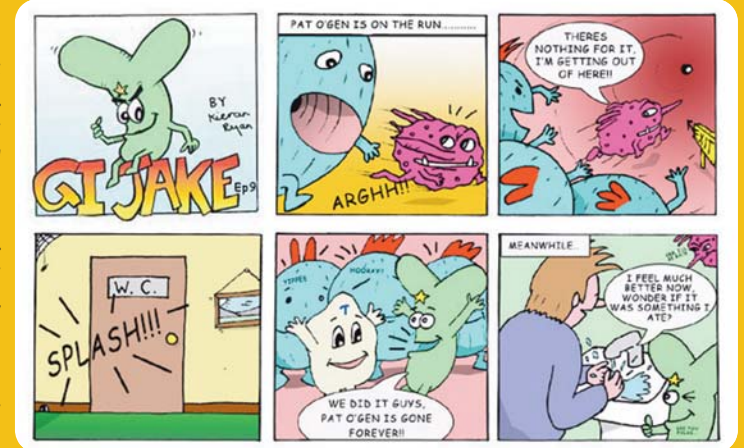
Hello!

Autumn 2007

Welcome back to another issue of my newsletter, Microbe Magic. I can't wait to tell you everything that has happened.

During the summer, Luke and I travelled to China and met Jing Jing, the giant panda.

In October, I'm getting a brand new website, with lots of new games, quizzes and competitions. My new friend, Mike, will teach you all about your body and have some cool experiments that you can do at home.



Please circulate to your friends

SCIENCE WEEK IRELAND 2007



Science week is beginning on November 11th. My name is Mike and I hope to see you, when I visit your school with an APC scientist. This year we'll tell you all about your digestive system and how the food you eat is broken down to give you energy and nutrients. We'll do some fun experiments and quizzes and have more prizes to give away.

COMPETITION TIME

Scientist @ Work Art Competition

What to do: Draw a picture of a scientist doing their his/her job. Pictures should be A4 size, with a title and short description of what the scientist is doing, on the back.
Prize: The winning student will receive an MP3 Player and a cuddly GI Jake. The school will receive a copy of Science Magic: Fun Guaranteed! An imaginative new experiment filled book, guaranteed to bring a bit of science magic to students and teachers alike.

Submit your entries: with your name, class, teacher's name and school by October 26th 2007 to:
 Andrea Doolan,
 5.12 BSI,
 Alimentary Pharmabiotic Centre,
 University College Cork



What is in your poo?



Your poo (also called faeces) contains a mixture of water and fibre from your diet, mucous and cells from your own body, and bacterial cells. Water and mucous help to keep poo moist, which makes it easier for it to travel along the large intestine (colon). Fibre in your diet comes from foods like fruit, cereals and vegetables, and it helps to bulk up poo making it easier for the muscles in the wall of the colon to push against. When these muscles contract they move poo along the gut - this is called peristalsis.

There are millions of different bacterial cells in poo, such as Bifidobacteria like GI Jake. In fact there are 1Kg of bacteria living in your large intestine. They help your immune (defence) system, by preventing bad bacteria from over growing in your colon and causing illness such as diarrhoea. The bacteria also help to make food for colon cells, and provide some vitamins that we cannot make ourselves.

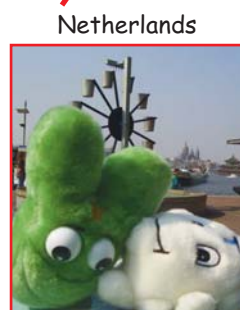
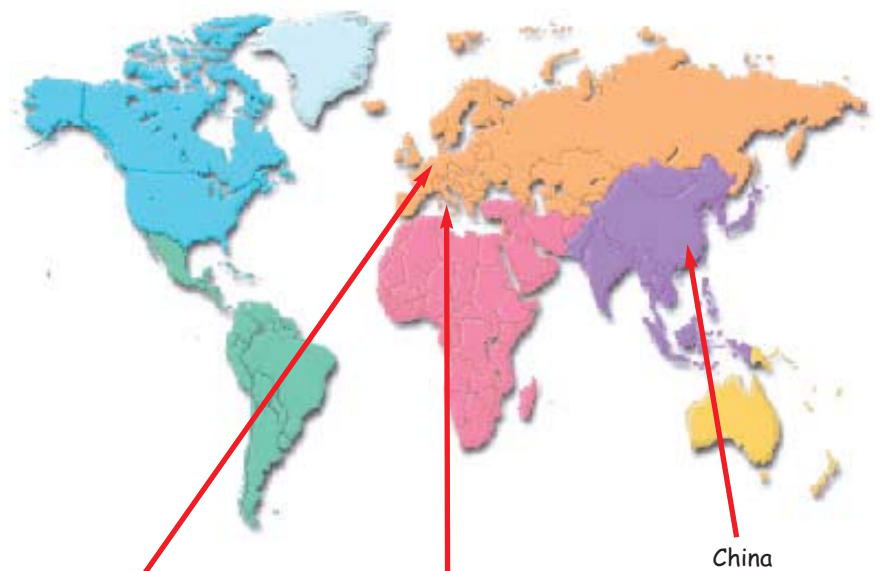
Q Why is poo brown? It is this colour because it contains bilirubin and biliverdin. These are substances from old broken down red blood cells. Sometimes things you eat can also affect the colour of poo. If you eat lots of beetroot it can make your poo (and wee) red!

Q Why does poo smell? Because the bacteria in your large intestine make sulphur containing gases, which smell bad. Some spicy foods can make this smell worse. When this gas escapes, this is a fart!

Q Why is bird poo white? Birds don't wee (urinate) and so the uric acid they build up comes out as a white paste



GI Jake World Traveller!!!



Jake and Luke at the Science centre NEMO in The Netherlands



GI Jake at the Roman Colosseum in Rome, Italy



Luke and I went to Sichuan province, the south west of China where we visited Jing Jing, the giant panda. Jing Jing was born on 30th August 2005 and is one of Beijing's Olympic mascots.

You Are What You Eat

Eating well, together with exercise, helps us to be healthier, stay fit and have lots more energy. When people talk about balanced meals, they mean meals that include a mix of food groups: some grains, fruits, vegetables, meat or protein foods, and dairy foods such as milk and cheese. The Food Pyramid tells us how much of each type of food we should eat. We also need to balance our food with how much energy we use taking exercise. You need extra carbohydrate when you play sports. Eating different kinds of food gives your body a variety of nutrients. Here are some helpful guidelines:

1. Choose fruits and vegetables. Eat at least five servings of fruits and vegetables every day, as they are rich in vitamins and fibre.

2. Let whole grains reign. Grains include breads, cereals, rice, and pasta. Whole grains are better than refined grains, as they are high in fibre. What's the difference? Brown rice is a whole grain, but white rice is not.



3. It's not just about what you eat — drinks count, too! Milk is a good nutritious drink. Choose juices and water, instead of sugary and fizzy drinks.

4. Steer clear of junk food such as cakes, biscuits, crisps, chocolate and sweets, which are often high in sugar and saturated fat, and low in vitamins and minerals. One or two treats per week is OK, but for a healthy snack try a smoothie, some dried fruit, like apricots or pineapple or some frozen grapes.

5. Know the facts about fat. You need some fat in your diet to stay healthy and it also helps you feel full, however some fats are better than others. Unsaturated fats like those found in nuts, olive oil and fish are the best kind.

6. Feeling full? Try to listen to what your body is telling you. If you feel full, you have eaten enough.



Teacher's Task

How Long is the Digestive System

Cut 4 pieces of wool, different colours, the following lengths.

Oesophagus	25 cms
Stomach	20 cm
Small Intestine	700 cm
Large Intestine	150 cm

Each colour represents a different organ. Tie the pieces together to get the full length of your alimentary canal.

FAMOUS SCIENTIST COMPETITION

Congratulations to Meghan O'Donnell, Burnfort National School, Mallow, Co. Cork who received first prize in the Microbe Magic Famous Scientist competition. Meghan's project on Leonardo da Vinci detailed his inventions, sculptors, paintings and writings and how these have changed the world. Meghan's 25 page project is available to download at <http://microbemagic.ucc.ie/>

Rachel Buckley and Máire O'Callaghan, Burnfort National School and Thérèse O'Donoghue, Ballinspittle National School, Kinsale were highly commended for their essays and projects.



Winner, Meghan O'Donnell, Burnfort National School, Mallow, Co. Cork receiving her prize from Andrea Doolan, APC.



Discovery 2007

Come and see GI Jake and Luke O'Cyte at the APC stand at Discovery 2007, in City Hall Cork, from November 18th to 21st. Play Gut Reaction, the action packed 3D video game, where you destroy the bad pathogens and cancers in the gut. Also, enter our fun competition, with a chance to win an MP3 Player. A great way to spend an afternoon and learn loads of science.



The APC are organising a special careers event for secondary school students and their parents in University College Cork on Wednesday, November 14th at 7.30pm. Tell your parents to check out our website (<http://apc.ucc.ie>) for more details.