

**COMPETITION TIME:** Answer these 10 questions and email your answers to [apc@ucc.ie](mailto:apc@ucc.ie) or mail your answers to the address below, by **October 28th 2005**. All correct entries will be put into a box and three winners picked. Prizewinners will receive a science kit, full of fun experiments. All the answers can be found in this issue of Microbe Magic or on the website <http://microbemagic.ucc.ie>

1. What does GI stand for in GI Jake?
2. What type of cell is a Leukocyte?
3. Where can Leukocytes be found?
4. In the GI Jake cartoon, who are Luke O'Cyte and GI Jake battling?
5. What is a probiotic?
6. What does APC mean?
7. In the new food pyramid, which colour represents milk and dairy products?
8. Why is it important that food is well cooked or heated before eating?
9. What is the objective of the Gut Reaction 3D video game?
10. Name 3 diseases of the gastrointestinal tract.

Check out the website for the correct answers soon after the closing date.



## Under attack - how to protect yourself from food poisoning bugs



Eating the right food is important, but equally important is making sure that the food we eat is safe. It is not unusual to find nasty germs (bacteria, viruses and parasites) living in unclean environments such as soil in the garden, and without knowing it we can sometimes bring these germs into the kitchen where they look for food to poison.

Under the right conditions these germs can grow quickly in some foods making you sick if you eat them. Sometimes this sickness is mild (tummy cramps and fever), but can also be very serious leading to vomiting, diarrhoea, chills and headaches.

This is why it is so important to protect ourselves from these harmful bugs by keeping the following thoughts in mind:

- 1) Always wash your hands with warm soapy water before you handle or eat food.  
Why? Germs are washed down the plughole and can't get near your food!
- 2) Make sure food is well cooked or heated before eating.  
Why? Germs can't survive very high temperatures and won't be able to harm you.
- 3) Never leave leftovers in the kitchen overnight - put them in a cold fridge.  
Why? At room temperature germs will grow quickly and poison the food, but in the fridge they are too cold to grow.
- 4) Handle raw meat and eggs carefully - never touch cooked foods afterwards without washing your hands.  
Why? Raw meat and eggs can be hijacked by germs before you buy them, and stick to your fingers or hands.



(by Jim O'Mahony)

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



### CONTACT DETAILS:

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

# Microbe Magic

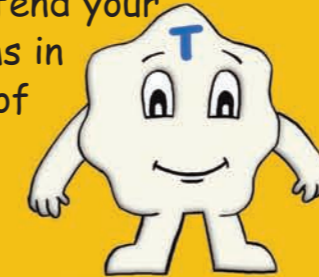
ISSUE TWO 2005



Welcome back! This is our 4th edition of Microbe Magic and it's bigger and better than ever before. There's lots to learn and competitions to enter.

Remember my buddy Luke O'Cyte in the last issue, well, he's back and he's helping to defend your body against germs in the next episode of the GI Jake cartoon.

Check it out!



Please circulate to your friends



## 'Capital of Cultures' Petri Art Winners

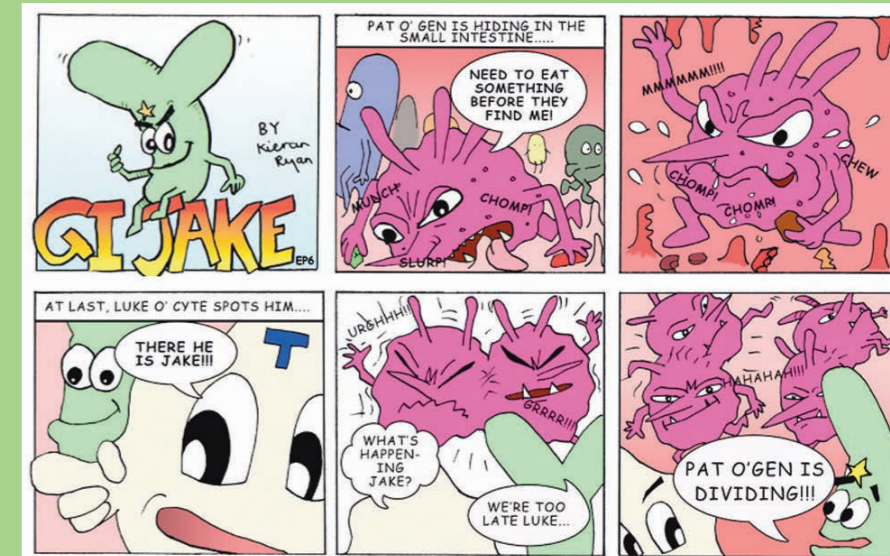
WINNER



Winner, Bill Whelan 3rd class, Bishop Ahern National School, Leamlara receiving the prize from Sheila Morgan, APC.

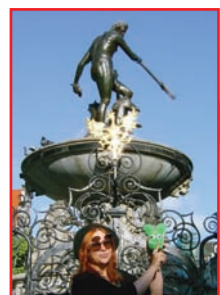
Congratulations to all the winners for their fantastic pictures of microbes in petri dishes. We had an amazing response and would love to display them all, but check out our website (<http://microbemagic.ucc.ie>) for some of the best. First prize winners, Lydia Palmer 1st year, Colaiste na Toirbhirte, Bandon, Katie Donovan 6th class, Maria Assumpta Ballypnehane and Bill Whelan 3rd class, Bishop Ahern National School each received an art pack and a cuddly GI Jake!

**Bigger and better! Science Week Ireland 2005** will take place from the 13th -20th of November. Were you one of the lucky schools that we visited last year during Science Week? We will visit schools again this year to talk about your body's defence system. Teachers, please complete the enclosed acceptance form or email ([apc@ucc.ie](mailto:apc@ucc.ie)) the school name, contact person, phone number, email address and preferred date/time.



## GI Jake World Traveller!!!

I have had the best Summer Holidays ever! I went to Iceland, which as you can see is really beautiful. I travelled to China in July with my colleagues Yin Li and Funing Sun and visited Gdansk in Poland. I met loads of great friends and took some awesome holiday photos.



Neptune's Fountain in Gdansk, Poland



Tiananmen Square, Beijing, China



On the sulphur fields near the krafla, in the area of Mivatn, Iceland



## A-Z of the gut

**Eating disorders:** These are abnormal eating habits. Some common eating diseases are anorexia nervosa, bulimia nervosa and binge eating disorder.

**Flatulence (farting):** A natural process that forces gas out of the stomach or intestines.

**Food poisoning:** This is a short illness that is caused by poisons produced by bacteria and viruses.

**Functional food:** Most foods have some nutritional value, however functional foods have added ingredients that keep you extra healthy and help fight sicknesses. For example, milk with added calcium and vitamins or probiotic yoghurts.



## 'Live the Good Life - You Are What You Eat And What You Do'

was the theme of our fun filled event to celebrate World Digestive Health Day, which took place at UCC's Mardyke Arena, Cork in May 2005. Family members from all generations came along and enjoyed the lectures and activities like the Bouncing Castle, Trampet, Soccer, Basketball and Relay Races. The moral of the day: **eat well and exercise, you'll feel much better.**

Watch out for next year's event, more fun and games for all the family.

## SHOMIK SIBARTIE The Doctor by Rachel Buckley (Burnfort National School)

### What is your name and where are you from?

My name is Shomik Sibartie. I'm from Mauritius, an island in the Indian Ocean. Have you heard of it?

### I think so! When did you come to Ireland?

I started Medical school in 1996 and graduated in 2001. I started my research masters in the Alimentary Pharmabiotic Centre in 2004.

### Why did you become a doctor?

I always enjoyed working with people, and I liked the idea of making them better when they're sick.

### This lab is great! I have never seen anything like it before. What research are you doing?

I am looking for a cure for ulcerative colitis and Crohn's disease. They are inflammatory diseases of the GI tract. It's great! I love my job.

### Sounds interesting! What are your hobbies?

I enjoy fishing for mackerel in Crosshaven. I also like to fly my kite in Ballynamona.

Shomik, thank you very much for your time. I really enjoyed hearing what you do and would love to come back some day and learn more.



## New food pyramid released in US

The USDA (United States Department of Agriculture) has recently built a new improved Food Pyramid, a rainbow of vertical stripes, each colour representing a different food group:

## THE NEW FOOD GUIDE PYRAMID



**Orange** is for grains - like cereals, rice, pasta and bread, where possible choose wholegrains.

**Green** is for vegetables - eat more dark green (like broccoli & spinach) and orange (carrots & sweetpotatoes) vegetables. Beans, peas and lentils are also a good choice.

**Red** is for fruits - eat a variety of fruits, choose fresh, frozen, canned or dried, but limit the amount of fruit juice you drink.

**Blue** is for milk and dairy products - choose low-fat and fat-free milk, yoghurt and cheese.

**Purple** is for meat, beans, fish, and nuts - eat low-fat or lean meats and poultry. Bake it, grill it or boil it! Vary your proteins by choosing more fish, beans, peas, nuts and seeds.

**Yellow** is for fats and oils - Oils are fats that are liquid at room temperature, like the vegetable oils used in cooking. Oils from plant sources do not contain any cholesterol. Solid fats are fats that are solid at room temperature, like butter.

Notice the staircase up the side of the pyramid? It's telling us that it's important to exercise and be active, so play some games and have lots of fun.



## Teacher's Task:

### Yeast Air Balloons

Yeasts are single-celled fungi. They feed on sugar and release carbon dioxide in the process. Yeasts are tiny, just one gram holds about 25 billion cells.

#### Ingredients:

1 packet of active dry yeast	A large rubber balloon
1 cup of warm water (approx 30°C)	An empty 1L water bottle
2 tablespoons sugar	

#### Method:

1. Stretch out the balloon by blowing it up a few times.
2. Add the packet of yeast and the sugar to the cup of warm water and stir.
3. Pour the mixture into the bottle. You'll notice the water bubbling as the yeast produces carbon dioxide.
4. Attach the balloon to the mouth of the bottle.
5. After several minutes, you'll notice the balloon inflating.

#### Result:

As the yeast feeds on the sugar, it produces carbon dioxide. With no place to go but up, this gas slowly fills the balloon. A very similar process happens as bread rises. Carbon dioxide from yeast fills thousands of balloon-like bubbles in the dough. Once the bread has baked, this is what gives the loaf its airy texture.

