

Teachers' favourite

Twinkies are the stuff of science class. Yes, seriously

The possible death of the Twinkie would be a loss to the world of junk food. But science may also rue its passing – science in the classroom, that is.

My husband has used Twinkies for years to teach high school science. The sweets have helped him explore scientific methods with his after-school chemistry club. He got some of his ideas from a series of classic Twinkie experiments dreamed up at Rice University in 1995. Now for some Twinkie facts:

Do Twinkies burn?

No. They toast like a marshmallow. They do not burn unless you first dry out the eerily moist golden sponge cake by soaking it in alcohol. Then a Twinkie will indeed catch fire. We don't want to say what becomes of the "creamy" filling as you may be reading this over lunch.

Do Twinkies dissolve?

Sort of. In water, they swell up, turn pale, ooze and then fall apart if you touch them.

How do you measure the density of a Twinkie?

It involves a blender and a



These sponge cakes are wonders of science. Sort of. Photo: AP

beaker. It yields the discovery that a Twinkie is 68 per cent air.

How does gravity affect them (say, if they are dropped out of a classroom window)?

They hold up a lot better than you might expect.

What happens if you microwave them?

Don't even try.

What's the Twinkie diet?

Two years ago, an overweight nutrition professor at Kansas State University went on a diet. It was low in calories but consisted mostly of Twinkies and other junk food. In two months, he lost 12kg, lowered his bad cholesterol and raised his good cholesterol. His

point was that for weight loss, calories mattered more than the actual content of the diet. Twinkie lovers rejoiced, but the nutrition world put its collective head in its hands.

How long do Twinkies last?

As far as we know, Twinkies, with their 37 ingredients, seem to last forever without spoiling. But who would want to see if they indeed do? Well, you can always stock up on Twinkies for doomsday.

Twinkies have unique properties. Class experiments will never be the same without them. Tastykakes and Krispy Kremes will not do. Science teachers should mourn their loss.

Denise Grady,
The New York Times

Clear the air

Studies suggest that people today spend more than 80 per cent of their time indoors. This makes good quality air in homes and offices very important.

Indoor air poisons, such as "volatile organic compounds" (VOCs), namely formaldehyde and toluene, can be harmful.

People may experience headaches, tiredness, sneezing and coughing.

Such symptoms, sometimes known as Sick Building Syndrome, clear up when people leave the building. But exposure over a long time can lead to serious health issues, such as asthma, allergies, pneumonia, and even cancer.

Engineering control is a good way of making sure there is enough clean air to weaken the poisons indoors.

There are three main ways to clean air: filtration, adsorption and catalytic oxidation.

Filtration and adsorption are relatively simple methods that physically glue pollutants to a surface layer.

The most common adsorbing materials, known as adsorbents, are activated carbon and zeolite. But once the adsorbents are full, they stop working and might even let the poisons back into the environment.

In contrast, catalytic oxidation is a promising way to control



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pollution. It uses catalysts to convert the poisons into non-harmful substances, such as water and carbon dioxide. The catalysts are put on the surface of adsorbents. To really improve the way this system works, small amounts of ozone can be used at the same time.

This new technology is known as ozone-assisted catalytic oxidation. It is one of the best ways to clean indoor air.

Good indoor air quality is important. It means people can work better indoors and they are healthy.

Look, here's a fact!

NEW YORK – If everyone in the world who needed glasses got them, the benefits would outweigh the costs.

A study published in last month's *Bulletin of the World Health Organisation* estimates that it would cost US\$28 billion to give glasses to all the needy people in the world. Scientists said the move would add more than US\$200 billion to the global economy. The US\$28 billion

would train 65,000 optometrists and equip clinics to prescribe the mass-produced glasses which could cost as little as US\$2 each.

Scientists believe 703 million people in the world needing glasses cannot work properly. Big improvements would be seen in moderately poor nations, where more people work in factories, as drivers or with sewing machines.

Cheap glasses could be a boost for about 80 per cent of these workers.

"Lots of skilled crafts become very difficult after the age of 40 or 45," says scientist Kevin Frick, who co-wrote the study.

The study also says that if millions of schoolchildren in need of glasses were to get them, the return would be even greater.

Associated Press



say it

alcohol (n)
酒精
optometrists (n)
視光師

swell up (v)
發漲
pollutants (n)
污染物

unique (adj)
獨有的
important (adj)
重要