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Group photograph of those attending the G20 meeting in London, Britain

## G20 MEMBERS MEET IN LONDON

The leaders of the world's wealthiest countries met in London, the capital of Britain, on 2nd April.

This group of 19 countries, plus the European Union (EU), is known as the G20. Experts estimate that members of the G20 group represent about 85% of the total world economy. Their meeting, or summit, was held to discuss solutions to the world's current economic problems.

Most experts agree that these problems first began about 18 months ago. It was then discovered that some large banks and financial companies in the U.S. and Europe were involved in many risky and complicated deals. A lot of these deals have now become worthless. This means those involved have lost huge amounts of money. To save the banks from having to close down, governments have had to support them with large sums of money to cover their losses.

Banks and financial companies are not the only problem. Some governments have also borrowed a lot of money that they are finding difficult to repay.

Trade – the buying and selling of goods and services – among most countries is slowing down. Global trade is important. When people and companies aren't buying things, the businesses that make and sell them become smaller, or even have to close down. If this happens, more and more people lose their jobs because their employers can no longer afford to pay their wages.

This year, it's predicted the total value of all the world's goods and services will get smaller. If it does, this will be the first time it's happened since the Second World War (1939-1945).

One of the main reasons world trade is slowing down is because of the banking difficulties. Many banks have greatly

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reduced the amount of money they are prepared to lend – called giving credit – to companies, businesses, and individual people. This is why the problem is often called “the credit crunch”.

The G20 summit was held because the group’s leaders urgently need to find solutions to the world’s economic and trade problems.

As well as the leaders of the 19 countries in the G20 group, senior people from important organizations, such as the World Bank, the International Monetary Fund (IMF), the World Trade Organization (WTO) and the United Nations (U.N.), also attended the summit. The leaders of Spain and The Netherlands, the two countries with the largest economies in Europe who are not G20 members, were also invited. The EU was represented by José Manuel Barroso, president of the European Commission.

The day before the talks started, those attending the summit were invited to Buckingham Palace, the London residence of Queen Elizabeth the Second. Afterwards, the leaders had dinner with Britain’s prime minister, Gordon Brown. The dinner was held at his home at 10 Downing Street, in London.

At the end of the summit on April 2, the G20 leaders announced they had agreed on a plan to help get the world economy and global trade

growing again. Over \$1 trillion will be made available. This money will be used for loans to countries that need them, development in poorer countries, and spending on world trade. Much of this money will be provided by the IMF, the EU and China.

The G20 leaders also said they would introduce new rules to control the risks banks are allowed to take. It is necessary, they say, to make sure the same banking problems are never allowed to happen again.

Most experts agree for the plan to succeed, it’s now important for the G20 to avoid protectionism. When economies start to shrink or go into recession, there is a risk countries might become protectionist.

Protectionism is when governments are tempted to support only companies in their own countries, or tell people to only buy things made by them and not from abroad. This, many experts say, was a cause of the “Great Depression” in the 1930s. During the Great Depression economic growth in many countries slowed down. World trade almost stopped and millions of people lost their jobs or were unable to find work.

Not everyone agreed with what was said at the summit. However, many believe getting the leaders of the world’s biggest economies to meet and agree on the same plan was a success. ■

## NORTH KOREAN SATELLITE LAUNCH?

North Korea has angered many other countries, including Japan and South Korea, by launching a new type of missile. North Korea said the launch on April 5 was used to put the country’s first satellite into orbit.



Launch of a Taepodong-2 missile

The U.S., and many countries say this isn’t true. They think the rocket – called Taepodong-2 – was not used to carry a satellite. Instead they say it’s a long-range missile being developed to carry a nuclear weapon, and the April 5 launch was a test to see how the missile worked. American officials said after reaching a certain height the rocket fell harmlessly into the Pacific Ocean.

North Korea is a very secretive country. North and South Korea are different countries that separated soon after the end of the Second World War in 1945. South Korea eventually became a democratic country. It now has one of the most successful economies in the world.

North Korea is a communist dictatorship. It is run by Kim Jong-il, who took over after his father – the country’s first president – died in 1994. The country is very poor and many of its people do not have enough to eat.

North Korea spends a lot on its military forces. Mr. Kim says this is

### G20 MEMBERS

|           |              |                     |
|-----------|--------------|---------------------|
| Argentina | India        | South Africa        |
| Australia | Indonesia    | South Korea         |
| Brazil    | Italy        | Turkey              |
| Canada    | Japan        | Britain             |
| China     | Mexico       | U.S.A.              |
| France    | Russia       | European Union (EU) |
| Germany   | Saudi Arabia |                     |

necessary because he believes other countries, including the U.S., are planning to invade North Korea.

In 2006, North Korea announced it had tested a nuclear bomb for the first time, in an old mine deep underground. This announcement surprised many countries. They thought it would be many years before North Korea developed the technology to make a nuclear weapon.

The following year North Korea agreed to stop developing nuclear weapons if other countries agreed to give it supplies. It wanted oil, food and fertilizer. Some of these things were handed over. However, talks among North Korea, the U.S., Russia, China, Japan and South Korea – called the “six party talks” – have recently turned to arguments.

Some people suspect North Korea wants other countries to believe it’s developing a small nuclear weapon that can be fitted to the top of a long-range missile. The new missile that was launched is thought to have a range of 4,100 miles (6,700 kilometers). This would mean it could even reach Alaska in the U.S.

Many experts believe the missile launch was a **tactic** used by North Korea to scare other countries into agreeing to give it more supplies. The launch even happened on the same day Barack Obama, the president of the U.S., made a speech about nuclear weapons. In his speech President Obama said countries should stop making nuclear weapons and begin to get rid of the ones that already exist.

North Korea claims its new satellite is now being used to broadcast music and anthems written to praise Kim Jong-il. If true, this means North Korea has successfully put a satellite into space before South Korea. ■

## EARTHQUAKE STRIKES ITALY

In the early morning on April 6, a strong earthquake struck central Italy. The earthquake measured 5.8 on the Richter scale. The quake was centered close to the mountain town of L’Aquila. Although the earthquake’s magnitude was not very high, the quake happened only six miles (ten kilometers) underground. This meant the ground shook very violently.

As the earthquake struck in the early hours of the morning, most people were asleep. Many rushed out into the streets but large numbers were trapped in fallen buildings. Rescue workers from all over Italy rushed to the area. They then began the difficult job of trying to find those who had not managed to escape.

Silvio Berlusconi, the prime minister of Italy, immediately canceled a trip he was due to make to Russia. Instead he traveled to L’Aquila by helicopter.



L’Aquila has a population of 70,000. The town has a university, so during university term time the population rises to 100,000. Mr. Berlusconi explained to newspaper and television reporters that 150 people had been rescued. Yet he also said over 200 people had been killed and 1,000 injured. Around 20,000 have lost their homes and more than 10,000 buildings were damaged.

## NewsCAST

**SPACE TOILET ARGUMENT** — Astronauts living on the International Space Station (ISS) are said to be arguing over some of the facilities in the spacecraft. A Russian astronaut claims he is not being allowed to use one of the toilets and an exercise bicycle that belong to the U.S. He says it’s not the fault of the astronauts who live on the ISS together, but the governments of the different countries from which they come. He believes the governments are being too careful over who owns what – including the toilet. The Russian astronaut says it’s against the idea that the ISS is an international project.

After the earthquake there was a series of smaller earthquakes, called aftershocks. Rescuers would not allow people back into their homes in case the aftershocks caused more buildings to collapse. Many people spent the following nights sleeping in their cars or in tents brought in by the rescue teams. The Italian government has begun to make arrangements for those affected to move into holiday hotels on the coast.

L’Aquila, which means “The Eagle”, was founded nearly 800 years ago. It has several very old churches and buildings, many of which were destroyed. More modern buildings, including a residence for university students and the town’s hospital, were also very badly damaged.

Earthquakes in Italy are quite frequent. The country is very slowly splitting apart. The last major earthquake in Italy was in 1980. The town of L’Aquila was almost completely destroyed in a strong earthquake over 300 years ago.



A week before the earthquake struck, officials in charge of emergency services in Italy met in the area. They talked about what should be done if a strong earthquake were to hit the region. This was because there had already been many earth tremors.

One expert claimed he had warned that a dangerous earthquake was about to happen. He complained his warnings had been ignored. However, most experts believe it's not yet possible to predict accurately when strong earthquakes will happen. ■

## WALL TO BE BUILT AROUND SHANTY TOWNS

Authorities in Rio de Janeiro, one of Brazil's largest cities, have begun building concrete walls around some of the biggest shanty towns on the edge of the city. The walls, the authorities say, are to stop the shanty towns from spreading further into the surrounding rainforest.



Shanty town

Shanty towns in Brazil are called favelas. A favela is a maze of make-shift houses or shacks built from pieces of wood, metal and plastic sheets. There is no street plan and many of the houses have no electricity, telephones or [sanitation](#).

Many shanty towns in Rio de Janeiro date back to the 1940s. At

that time hundreds of poorer people from the countryside moved to the city to work in newly opened factories. These people had nowhere to live, so they put up shacks on the edge of the city near their work. Most favelas have been built without the permission of the city's authorities.

Over 60 years, as more and more people arrived in Rio de Janeiro, the favelas continued to spread along hillsides overlooking the city. Some people estimate almost 25% of the city's six million people live in favelas.

The Brazilian government uses photographs taken by a satellite to check on how much of the country's rainforest is being cut down. The government says these photographs show 0.8 square miles (2.1 square kilometers) of rainforest has been lost to recently built favelas during the last three years.

The new walls around the favelas will be seven miles (11 kilometers) long and ten feet (three meters) high. The authorities insist the walls are there to protect the rainforest. Any shanty town buildings put up on the forest side of the walls will be torn down.

Many people who live in the favelas don't believe the official reason for building the walls. People claim the walls are meant to separate poorer people who live in shanty towns from the wealthier people living in the city.

Others think the walls are meant to help the city's authorities control what happens in the shanty towns. Armed criminal gangs, involved in buying and selling illegal drugs, are based in the city's favelas.

The shanty towns can be dangerous for another reason. During heavy rains it is not unusual for

some shacks built on the steep hillsides to be washed away.

The concrete walls will be built around 40 shanty towns. The walls will cost R\$39 million (\$17.7 million) to build. They are expected to be completed by the end of 2010. ■

## GHOSTNET

The Information Warfare Monitor (IWF) is an organization based in Canada. It investigates when computers and computer networks have been broken into or hacked to find out secret information. Recently, the IWF announced it had discovered hundreds of computers in government offices and embassies all over the world had been hacked.

Some hackers are computer experts who illegally use the internet to find out secret information from other people's computers. Others use wireless networks that are not protected. This is often called cyber-spying. Hackers fool computer operators into downloading programs – called malware – onto the computers of organizations they wish to spy on. This malware is specially designed to find out secret information. A computer that has had this type of malware installed is known as a [compromised](#) or infected computer.

The investigation by the IWF first started in Dharamsala in northern India. The IWF was asked by people who work for the Dalai Lama to check their computers. They suspected secret information was being illegally copied from them. The Dalai Lama is the Buddhist spiritual leader of Tibet. He and many of his followers went to live in Dharamsala in 1959 after Tibet was taken over by the Chinese.

The IWF soon discovered the malware on the computers in Dharamsala had also been placed on many computers in government offices and embassies. It estimates nearly 1,300 computers have been compromised. The IWF says some computers in NATO (North Atlantic Treaty Organization), international banks and news companies have also been infected.

The malware has been nicknamed GhostNet. The IWF says some of the countries being spied upon in this way include South Korea, Indonesia, Iran, Germany and Pakistan. The malware is thought to be spreading to at least 12 new computers every week.

The IWF claims it has traced the source of the cyber-spying to internet access companies on the island of Hainan, in China.

It did not say the cyber-spying was being organized by the Chinese government. However, Hainan Island is where the technical depart-

ment of the Chinese army has a large base. In 2007, Germany accused China of cyber-spying on some of its government workers' computers. At the time it was believed the Chinese army was responsible for these cyber attacks.

Chinese officials denied having anything to do with the cyber-spying. Hacking, they insisted, is illegal in China. One official claimed the people responsible were probably the Tibetans living in Dharamsala and that they had done it to embarrass China. ■

## INDIAN OCEAN ISLAND VOTES TO BECOME PART OF FRANCE

On March 29 a vote, called a referendum, was held on the island of Mayotte. This type of vote is open to all adults in the population.

Mayotte is one of the four main islands in a group, or archipelago, called the Comoros, in the Indian Ocean. It has been a French colony since the 1840s. In 1975, three of the islands voted to become an independent country called the Union of the Comoros. Yet Mayotte voted to continue to be ruled by France.

The March 29 referendum was held to decide if Mayotte wanted to officially become part of France. Over 95% of the people voted "Yes".

Since their independence, the leaders of the three Comoros islands have argued with each other. Many disagreements have been ended by the army taking over the government – called a coup. This has happened so often that some people have nicknamed the Comoros the "coups-coups" islands.

While the economies of the other three Comoros islands have not done well, the economy of Mayotte

has improved. It is based on tourism, and growing bananas and manioc (also called cassava), a plant with an edible root.

Some organizations were unhappy with the result of the referendum. The African Union (AU) – of which the Union of the Comoros is a member – said Mayotte should join with the other three islands. Even the United Nations (U.N.) says Mayotte is officially part of the Union of the Comoros, which is a U.N. member country.



To become part of France, Mayotte will have to change some of its laws to match French ones. At the moment it is legal in Mayotte for a man to marry more than one woman. This will no longer be allowed. Also, the age at which women are allowed to marry will go up from 15 to 18.

France is divided into 100 areas called "departments". For instance, the cities of Calais and Paris are each in separate departments. The referendum result means Mayotte will officially become the 101st department of France in 2011.

France has other small island colonies in the Caribbean and the Pacific Ocean. However, unlike Mayotte these hope to become independent countries.

Nicolas Sarkozy, the president of France, said he was very pleased with the result of the vote. He plans to visit Mayotte in May. ■

## NewsCAST

**ROBOT SCIENTIST** — A robot used in a university in Britain has become the first to make its own scientific discoveries. The robot was doing tests on the different genes of yeast cells. It discovered what 12 different genes were responsible for. The robot studied what is already known about yeast genes to work out what the unknown genes might do. It then tested its own results by removing the genes one by one to see what happened. A professor at the university said the robot can carry out simple, repetitive experiments like this. This means other scientists have more time to do other research.

## CREATING A STAR ON EARTH?

by Dr. Carol Ballard

After 12 years of building work, scientists at the National Ignition Facility (NIF) in California, in the U.S., are ready to begin an experiment. It's designed to recreate what happens inside the Sun, using a process called nuclear fusion.

Everything around us is made of tiny particles called atoms. In turn, each atom is made of even smaller particles. The largest of these are called electrons, protons and neutrons. The atoms of different elements contain different numbers of electrons, protons and neutrons.

In ordinary nuclear power plants, atoms are split using a process called nuclear fission. Uranium atoms are bombarded with neutrons, causing the uranium atoms to split. This releases more neutrons, along with huge amounts of energy.

Nuclear fusion is the opposite of nuclear fission. It is the process by which stars like the Sun release energy. In fusion, atoms join together rather than split.

Inside the Sun, hydrogen atoms join to make a gas called helium. This releases a lot of energy. At the NIF, scientists will use two forms of hydrogen for fusion. One, called deuterium, is found in seawater. The other, tritium, can be made from lithium, which is found in soil. Deuterium and tritium can combine to make helium.

Scientists have been trying to achieve nuclear fusion for many years. So far nobody has managed to build the equipment needed. The Sun's nuclear fusion happens at extremely high pressure and at temperatures of more than 18 million°F (10 million°C). Scientists can increase the pressure in their experiments, but cannot match that of the Sun.

Instead, the NIF scientists will increase the temperature to more than 180 million°F (100 million°C)! To do this, they will use very powerful lasers. NIF is a ten story building the size of three football fields. It contains the most powerful lasers in the world.

Because of the extreme pressure and temperature, the fusion will have to take place inside a very strong specially built concrete chamber.

To start the reaction, beams from 192 lasers will be focussed on a capsule the size of a pea. This capsule contains a mixture of deuterium and tritium. For a tiny fraction of a second, the lasers will emit 500 trillion watts of energy – more energy than the total electrical power generation of the whole of the U.S.! This will be enough to trigger a nuclear fusion reaction.

Although it requires huge amounts of energy to get started, scientists calculate that the nuclear fusion process will release 10 to 100 times more energy than this.

The experiments will begin in two months' time. The first important results are expected between 2010 and 2012.

Other similar projects are planned. One is a European project known as HIPER (High Power Laser Energy Research) – although the place where this will be built has yet to be decided. It's hoped that the construction on HIPER will begin within ten years.

Another nuclear fusion experiment, the International Thermonuclear Experimental Reactor (ITER), will take place in the south of France. However, the facility needed for the experiment will not be finished until 2019. ITER will use a different method from NIF to trigger fusion.

NIF itself will not produce energy for people to use. It's a research laboratory, set up to find out if it's possible to use and control the process of nuclear fusion safely.

One advantage of nuclear fusion is that it does not produce carbon dioxide or other greenhouse gas emissions. Scientists estimate 0.2 gallons (one liter) of seawater could generate the same amount of energy as 66 gallons (300 liters) of gasoline. If it can be done safely, nuclear fusion could provide all the energy the world needs without damaging the environment.



National Ignition Facility (NIF)



## DESERT ISLAND DOG

A pet Australian cattle dog has been rescued from a small island and reunited with its owners.

Last November, Dave and Jan Griffith went on a sailing holiday off the coast of Queensland, in Australia. They took their dog, called Sophie Tucker, with them. The dog was named after a well known American singer and entertainer who died in 1966.

During the sailing trip the boat hit bad weather and rough seas. Sophie Tucker fell overboard. When the owners realized what had happened they turned around to look for their dog. Despite searching for an hour they were unable to find her. They gave up, believing Sophie Tucker had drowned.



*Sophie Tucker*

At the beginning of April, the Griffiths heard from friends that some park rangers had found a wild Australian cattle dog on a small island called St. Bees. Part of the job of the park rangers is to visit small islands off the coast of Queensland. The rangers' description of the dog was similar to Sophie Tucker.

The Griffiths worked out that their dog had fallen off the boat about 5.8 miles (9.3 kilometers) from the island of St. Bees. They decided to ask the rangers if they could see the wild dog, to find out if it was Sophie Tucker.

As the dog was so wild the rangers had put her in a cage. Yet the dog's behavior changed as soon as the Griffiths arrived. She obviously recognized her owners. The Griffiths confirmed the dog was Sophie Tucker and took her home with them.

The rangers said the dog must have swum to the island after falling overboard. The island is home to wild goats, and Sophie Tucker had been catching baby goats and eating them for over four months. The few people who live on the island had been unable to get near the dog because it appeared to be so vicious.

The Griffiths say Sophie Tucker quickly changed back from being a wild dog to a house pet. Animal experts say it is not unusual for dogs to turn "wild", or feral, if they find themselves in a situation where they have to survive. ■

## LENIN STATUE BOMBED IN RUSSIA

A large statue of Vladimir Lenin has been badly damaged by a bomb. The statue stands in a square outside the Finland railway station in St. Petersburg. Once called Leningrad, St. Petersburg is Russia's second most important city.

Vladimir Lenin became the first **communist** leader of Russia soon after the Russian Revolution in 1917. Before the revolution Russia was ruled by the head of its royal family, the Tsar.

During the First World War (1914-1918), Russia fought alongside France and Britain against Germany and the Austro-Hungarian Empire. At this time there were many large demonstrations against the Tsar. In 1917, the protest leaders imprisoned the Tsar and other

members of his family in one of their royal palaces. Soon afterwards the Tsar agreed to resign, or **abdicate**.

For many years, Lenin had been complaining about how the Tsar ruled Russia. Lenin had been arrested for this, so it wasn't safe for him to stay in Russia. He moved to Switzerland. There, he carried on writing articles that said Russia should have a new form of government called communism.



*Statue of Vladimir Lenin in St. Petersburg*

Once the Tsar had stepped down, Lenin returned to Russia. He arrived by train at the Finland station in April 1917. He was met by large cheering crowds. Six months later, Lenin and his followers seized control of Russia and turned it into a communist state – later to be called the Soviet Union.

The members of the Russian royal family imprisoned in 1917 were all shot the following year. Nobody knows if Lenin was one of the people who gave the order for their execution.

The Communist Party continued to run the Soviet Union until 1991. By that time it had expanded to include many countries in Eastern Europe. Communist leaders arranged for statues of Lenin to be put up in these countries.

Since the Soviet Union's collapse, most of its member countries have become independent. Nearly all of them have moved, destroyed or even

buried the statues of Lenin that once stood in their cities. Most did not want to be reminded of the time they were under communist control.

At the beginning of the First World War in 1914, St. Petersburg was renamed Petrograd. When Lenin died in 1924 the city's name was changed to Leningrad. The newly-elected Russian government changed the city's name back to St. Petersburg again in 1991.

Local officials in St. Petersburg were angry about the damage the bomb had caused. They said the statue, which now has a large hole in it, is unsafe and will have to be taken down to be repaired. No group or person has admitted to placing the bomb. As it exploded on April 1 many believe it was supposed to have been an April Fools' Day joke.

After Lenin died in 1924, his body was [embalmed](#). It can still be seen in a specially built [mausoleum](#) in the center of Moscow, the capital of Russia. ■

## CAN BABY CHICKS COUNT?

A professor working at an Italian university has completed a simple experiment with a surprising result. It seems to show newly hatched chicks are able to do simple math.

The professor, Rosa Rugani, got the idea for the experiment from tests usually done on human babies. She noticed chicks like to stay together in groups. A single chick will quickly join up with a group of other chicks rather than stay on its own.

At first, the professor put a single chick in a cage with bits of colored paper. In one part of the cage was a piece of paper cut into three pieces. In another part was a piece of paper the same size, cut in two. The chick

rushed to join the “group” of three pieces of paper. The experiment was repeated and the two bits of paper were replaced by one – again, the same size as the piece that had been cut into three. Most chicks joined the three pieces. This showed the chicks were attracted by the number of items, not the overall size or shape.



*Chick in math experiment*

The next experiment used small orange plastic items. Two small screens were made, and caged chicks were allowed to watch a different number of items being placed behind each one. Most chicks, when released, ran to the screen that had the most items behind it. The chicks were then put back into their cages.

While the chicks watched, some items were moved from behind one screen to another. For example, one screen had four items behind it, and the other had two. Then two items were moved from behind the first screen to behind the other. To go to the screen with the highest number, the chick had to do some simple arithmetic to work out which screen now had the most items.

Over three quarters of the chicks in the experiment went to the screen with the higher number of items, even if it had fewer items before the switch.

In other words, the chicks seemed to be able to understand that  $4 - 2 = 2$  and that  $2 + 2 = 4$ . This also worked in experiments where

the chicks had to figure out that  $1 + 2 = 3$  and  $3 - 2 = 1$ .

Scientists know that some animals, such as adult apes and dogs, have an understanding of numbers. However, the experiment with the chicks may show that they have evolved with an ability to do simple adding and subtracting rather than learning it as they grow older. ■

## RED RIVER FLOODS

On March 28, the water level of the Red River, in the U.S., had risen by 41 feet (12.4 meters). This was a new record. People began worrying the river would flood. The last time the water had risen close to this height was over 100 years ago in 1897.

The Red River forms the boundary between the states of Minnesota and North Dakota. It then flows across the border with Canada and into Lake Winnipeg. In spring, the river often floods.

To stop this, high sloping walls, called levees have been built along the riverbanks.



In this part of the U.S., the Red River is unusual as it flows north – nearly all the others flow south. In winter, the area is very cold and the river often freezes. In spring, the thaw starts in the south and gradually moves northwards. This means the southern parts of the river may



have melted while the northern parts are still frozen.

When this happens, water flowing downriver has nowhere to go because the ice acts as a dam. This causes the river to rise.

The Red River also flows through a wide flat plain. This means the flood water can spread over huge distances if it breaks through the levees. As the plain is mostly clay any flood water takes a very long time to soak into the ground.



Volunteers filling sandbags in Fargo, U.S.

Last autumn, the ground around the upper part of the river froze before the first snows arrived. Then heavy snow fell during the winter.

When the snow and ice began to melt in the spring, it couldn't soak into the frozen ground. Most of the melt flowed into the river. Heavy rain and snow fall in the middle of March and weather experts predicted the river would rise dramatically.

The Red River last had a big flood in 1997. Then the town of Grand Forks was almost totally submerged. After this disaster large amounts of money were spent on specially designed concrete flood walls and a channel to divert flood waters away from the town.

In the 1997 floods the town of Fargo, 81 miles (130 kilometers) upriver from Grand Forks, was not affected. Its flood defences were not improved. The levees protecting Fargo are mostly made of earth. Experts predicted the heavy rain and

snow during the spring melt would mean the river would rise higher than the earth levees in Fargo.

In the days before the river level rose, thousands of people in Fargo helped army engineers fill sandbags to build up the levees. Over three million sandbags were used. Although surrounding areas of farmland were flooded, Fargo was saved.

Town officials are now asking the American government to provide money to improve Fargo's levees. By the time the next floods arrive, people want Fargo's defences to be as good as those of Grand Forks. ■

## CELL PHONE PROTEST

Students in a school in Canada walked out of lessons to protest about the action of their principal. They said the principal had broken the law and violated their rights.

The principal had installed a cell phone jammer which covered the whole school. The jammer stops signals from reaching cell phones, so it stopped all the students' cell phones from working.

Teachers at the school claim that students using cell phones in lessons – especially for texting – have



become a major problem. In 2007, the school banned students from taking phones into the classroom. Students were allowed to bring cell phones to school, but had to leave them in their lockers.

Yet teachers say they were each still having to confiscate two or three phones a day because students were ignoring the rule and texting in class. The teachers say this was very annoying because it was disrupting lessons.

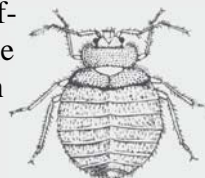
The principal says he installed the phone jammer after one of the parents suggested it. He ordered the jammer online from a company in China.

It took two days for pupils to work out that a jammer was the reason their phones weren't working. A group of the students used the internet to find out about the use of cell phone jammers. They found a reference to a law called the Canada Radiocommunications Act. This law says it's illegal to use any device that blocks people's cell phone signals.

The students then held a protest against the use of the jammer. As soon as the principal learned it was illegal, he switched the jamming device off. He said he was impressed by the way the pupils had done their research into the Radiocommunications Act.

## NewsCAST

**DON'T LET THE BEDBUGS BITE** — Scientists say bedbugs might bug you – but evidence now suggests they don't spread any diseases. Bedbugs are small wingless insects. As bedbugs bite humans and feed on human blood, people thought the insects could transmit diseases in the same way as mosquitoes can. Yet research says while bedbug bites are itchy and annoying, the creatures don't seem to spread diseases from one person to another. Yet scientists warn bedbugs could become more common and difficult to get rid of. This is because more and more people are traveling to different parts of the world and can bring bedbugs back with them.



Cell phones in school classrooms cause a lot of arguments. Many students say it is their right to have them wherever they want. Some parents say they want to be able to contact their children. However, many teachers say they can't teach lessons when there are so many disruptions from using cell phones.

Not all teachers think cell phones should be banned, though. Many say the best action would be to educate students on when it's appropriate to use cell phones. ■

## ILLNESS STRIKES PACIFIC ISLANDS

People living on three small Pacific coral islands, or **atolls**, called Tokelau, have all been vaccinated against flu for the first time. This was necessary after a flu **epidemic** broke out on one of the islands.

Influenza, known as flu, is a disease caused by a virus. Symptoms are coughing, chills, dizziness, fever, headaches and muscle pain. The flu virus can be transmitted by coughing and sneezing.



*Aerial photograph of one of Tokelau's atolls*

Only 1,500 people live in Tokelau. They reported the first cases of flu in the middle of March. Soon, over 150 people had been affected – 10% of the population. Four people were taken to the hospital. Many who had caught the virus were children.

Flu is not always a very serious illness, but it can be fatal for people

who are very old, very young, or those who have other diseases. It can be especially dangerous if a person has never been exposed to any type of flu virus before, because his or her body hasn't ever had to fight it.

The chief medical officer for Tokelau decided everyone would need a vaccination to try to stop the virus from spreading. This was because the people on Tokelau had not been exposed to the flu virus before.

A vaccination is an injection of a tiny amount of a virus. It is meant to prepare a person's body to fight a virus if necessary. The injection introduces such a small amount of a virus that the body can fight and destroy it. Then, if the body comes in contact with the virus again in the future, it will have the ability to fight it again.

Tokelau is a very remote group of islands. It doesn't have an airport, and can only be reached by boat. The nearest group of larger islands is Samoa. It takes 26 hours to reach Tokelau from Samoa.

Tokelau is dependent on New Zealand for many things. Therefore, the medical director asked medical authorities in New Zealand for help. Medics from New Zealand then traveled to Tokelau and took vaccinations with them. The medical director said arrangements will now be made for people living on Tokelau's islands to be vaccinated against flu each year. ■

## CANADIAN TERRITORY'S ANNIVERSARY

On April 1, Canada officially celebrated the tenth anniversary of its newest territory.

Canada is divided into ten provinces and three territories. The newest

and largest territory, Nunavut, was officially created on April 1, 1999. It is an area of over 770,000 square miles (two million square kilometers) in the far north of Canada.



Only around 30,000 people live in the territory. "Nunavut" means "our land" in Inuktitut, the language spoken by most Inuit people in Canada. Officially Nunavut has four languages – Inuktitut, Inuinnaqtun, English and French.

The Inuit are a group of Aboriginal people who mostly live in Arctic areas. Many Inuit live in the northern parts of Canada, while some live in Greenland. Those living in

## NewsCast

**DOG RUINS TEA PARTY** — Vladimir Putin, the prime minister of Russia, arranged for a meeting for members of the Russian government on 1st April. The meeting was held to talk about ideas on how to help local companies produce and sell more food. The prime minister had a special tea prepared for his visitors. However, while they were talking, Mr. Putin's dog got into the room that was being used for the tea. The dog then ate most of the food laid out for Mr. Putin's visitors – including biscuits, pastries and jellies.

Greenland are citizens of Denmark, as Greenland is part of the Kingdom of Denmark.

The Inuit are **indigenous** to the area now known as Nunavut. Historians know people have lived in this part of the Arctic for over 4,000 years.

European explorers and settlers began traveling to Canada from the early 1500s. The settlers started making agreements, or **treaties**, with indigenous people. This was because the Europeans wanted to own land in the new country.

Yet for many indigenous people at the time, the idea of “owning” land was new. People couldn’t own land as anyone could use it – so it really belonged to everyone. However, the settlers began taking over land and dividing it up into what is now Canada.



*Iqaluit, capital of Nunavut*

The European style of government traditionally took land and rights away from Aboriginal people. The northern part of Canada was labelled as one area, known as the Northwest Territories, and run by the central government of Canada.

In 1976, a group representing the Inuit people – the Inuit Tapiriit Kanatami – began holding discussions with Canada’s government. They talked about dividing up the Northwest Territory so the Inuit could have their own land within Canada, with their own government.

This would be part of a repayment for having the land taken away in the past.

The government formally agreed to this in 1993. Nunavut now has its own territorial government, called an Assembly. Nunavut also has a youth parliament for high school students. The youth parliament members learn about how the territory is run from the members of the Assembly.

The tenth anniversary celebrations were held in Nunavut communities and in the capital, Iqaluit. Just over 6,000 people live in Iqaluit, which is on the south side of Baffin Island. At many of the celebrations special dinners were served, with caribou and seal meat, fish, and whale skin – called maqtaq. ■

## APRIL FOOL!

Traditionally, in many countries, April Fools’ Day is celebrated on April 1.

April Fools’ Day is marked by playing practical jokes and tricks on friends, or by trying to get others to believe something that’s not true.

Nobody quite knows where the celebration of April Fools’ Day comes from or why April 1 is its date. Some believe it may come from an Iranian festival. Called Sizdah Be-dar, the festival is held on the 13th day of the New Year in the Persian calendar. It falls on April 1 or 2.

As it is a festival of joy and laughter, one of the many Sizdah Be-dar traditions is to play jokes on people. It’s known as one of the oldest joke-playing traditions in the world, which is why some people think this festival is the reason for April Fools’ Day.

In France, an April 1 tradition is the “poisson d’Avril” – the “April fish.” As a prank, people try to pin a paper fish on other people’s backs without them noticing – so they walk around with a fish pinned to them all day.

| SUNDAY     | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|------------|--------|---------|-----------|----------|--------|----------|
| APRIL 2009 |        |         | X         | 2        | 3      | 4        |
| 5          | 6      | 7       | 8         | 9        | 10     | 11       |
| 12         | 13     | 14      | 15        | 16       | 17     | 18       |
| 19         | 20     | 21      | 22        | 23       | 24     | 25       |
| 26         | 27     | 28      | 29        | 30       |        |          |

*April Fools’ Day*

Many newspapers, and television and radio broadcasters, use April Fools’ Day to write about or broadcast funny or strange stories. They do this to try to trick people into thinking the stories are true.

This year, in Britain, the British Broadcasting Company (BBC) reported it had designed an iToaster – a toaster with a display screen for watching television and downloading broadcasts while eating breakfast. The toaster was even said to toast the BBC logo into slices of bread!

In Taiwan one newspaper reported the two pandas recently given to the country by the Chinese government were fakes. The report said the pandas were really brown bears whose fur had been dyed black and white. The official in charge of the zoo where the pandas are kept was not amused. He demanded the newspaper apologize for the report.

One of the most famous April Fools’ **hoaxes** was broadcast by the BBC in 1957. It reported on harvesting spaghetti from trees in Peru. Many British people believed the



report was real – even though it was filmed in a British town.

In some countries, tradition says April Fools' jokes can only be played until noon on April 1. Otherwise, the person playing the joke will bring bad luck upon him or herself! ■

## EUROPEAN SNAIL HUNT

People in Europe have been asked to take part in an evolution study – by searching their back gardens for snails.

The six-month study, called the Evolution Megalab, is led by a British university. It asks people to submit the information they find out about the snails online.

To join in the Evolution Megalab, people are asked to look for banded snails. These snails have shells patterned with stripes. They are quite

common in various areas of Europe, and can be found in woodland, gardens and fields – in fact, most places where plants grow.

Banded snails have different shell patterns depending on where they live. Professor Jonathan Silvertown, the leader of the study, says those that live in woodland tend to have darker shells, while snails that live mostly in the grass have lighter shells.

The shell color also depends on temperature. It seems snails with darker shells tend to live where it's colder, while lighter-shelled snails live in warmer climates.

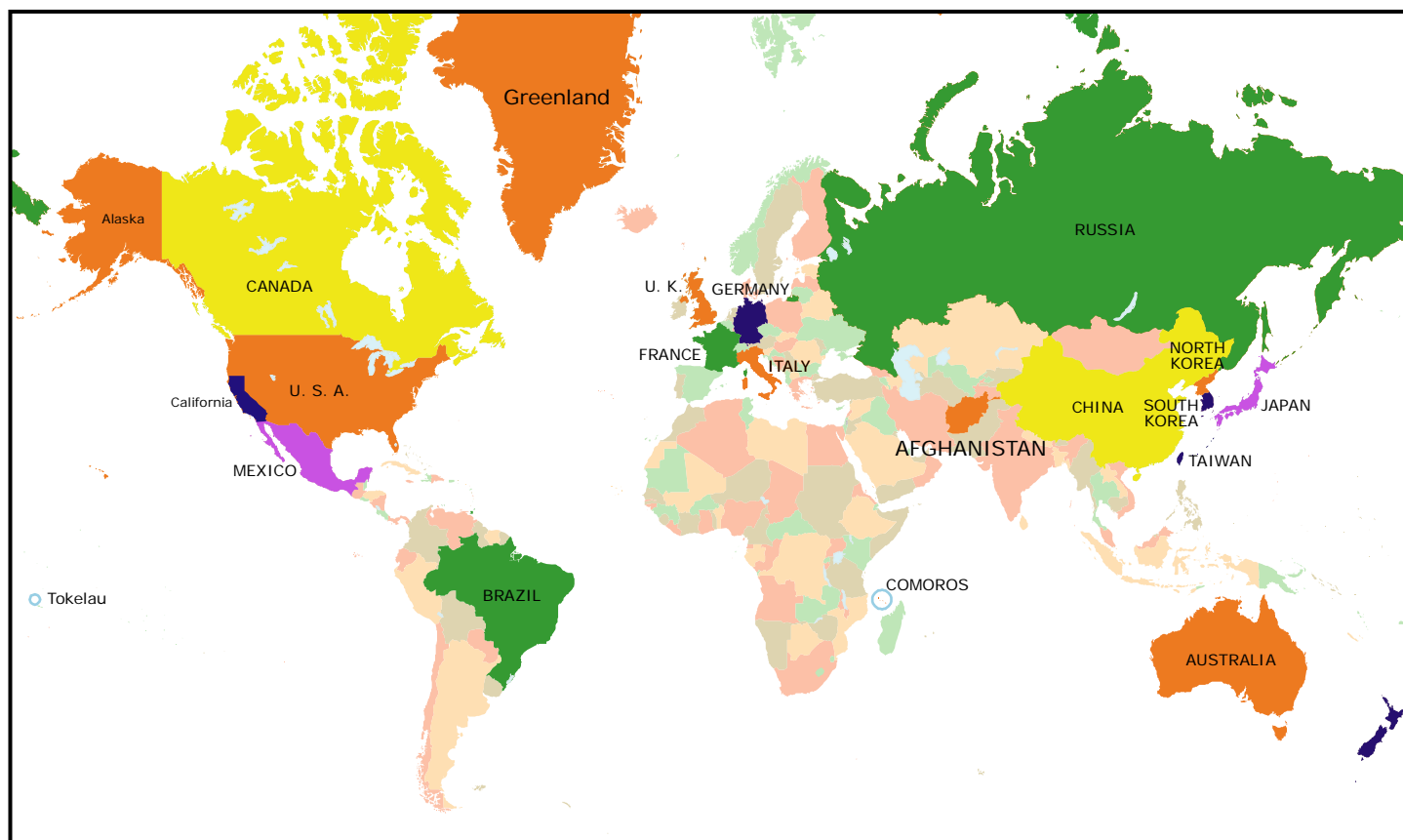
The snail's main predator is a bird called the song thrush. The shell patterns provide camouflage so the snail can hide from thrushes. The two colors of snail shell, says Professor Silvertown, are likely to have evolved because of the kinds

of camouflage the snails need in different places. The two colors of snail shell therefore match the different conditions in which the snails live.



*Different types of banded snails*

Recently, the population of song thrushes has decreased. Therefore, the scientists think people might find more snails in areas where there are now fewer thrushes. The study also hopes to find out if the Earth's changing temperature has had an effect on where dark- and light-shelled snails now live.



This map shows countries to which news stories refer in this issue. Visit [www.newsademic.com](http://www.newsademic.com) for more detailed world maps.

Scientists already have a lot of information on banded snails. People have been studying the snails for many years. This means it will be easy to make comparisons between the information people gather now, and what the scientists already know.

If you live in Europe, you can take part in the Evolution Megalab project too! To learn how to get involved and register what you find visit [www.evolutionmegalab.org](http://www.evolutionmegalab.org). ■

## NATO's 60TH ANNIVERSARY

This year marks the 60th anniversary of NATO (North Atlantic Treaty Organization), which was founded in 1949. To celebrate this, the leaders of NATO's 28 member countries met for a summit – or series of talks – on April 3 and 4, in the towns of Strasbourg and Kehl.



NATO leaders crossing the bridge over the River Rhine, between Kehl and Strasbourg

This was the first time a NATO summit had been held in two separate places. The towns of Strasbourg and Kehl face each other across the River Rhine. Strasbourg is in France and Kehl in Germany. The two towns were chosen as a symbol of the peace among European countries since the end of the Second World War in 1945. In the past there have been many wars among European countries. Often, during these wars invading armies crossed the River Rhine.

### NATO MEMBER COUNTRIES

|                |         |            |                 |
|----------------|---------|------------|-----------------|
| Albania*       | Estonia | Latvia     | Slovakia        |
| Belgium        | France  | Lithuania  | Slovenia        |
| Bulgaria       | Germany | Luxembourg | Spain           |
| Canada         | Greece  | Norway     | The Netherlands |
| Croatia*       | Hungary | Poland     | Turkey          |
| Czech Republic | Iceland | Portugal   | Britain         |
| Denmark        | Italy   | Romania    | U.S.A.          |

\* Joined on April 1, 2009

The Chancellor of Germany, Angela Merkel, met the leaders of the other NATO countries as they arrived in Kehl. The group then crossed a [pedestrian](#) bridge over the River Rhine to be met on the French side by Nicolas Sarkozy, the president of France.

Members of NATO sign a treaty saying they agree to send military forces to help if another member country is attacked. NATO first started with seven members. This has grown to 28. During the 60th anniversary summit the two newest members – Albania and Croatia – were welcomed. Both countries officially became NATO members on April 1.

Since 2003, NATO has been fighting a war in Afghanistan against a political group called the Taliban. The U.S. was attacked by a militant group called al-Qaeda in 2001. Al-Qaeda is based in Afghanistan and has been supported by the Taliban. As the U.S. had been attacked it led an invasion of Afghanistan to try to capture the leaders of al-Qaeda. Later, in 2003, NATO member countries agreed to send troops to Afghanistan to help the U.S. and the new Afghan government.

However, the war against al-Qaeda and the Taliban in Afghanistan has caused disagreements among NATO members. Troops from the U.S.,

Britain, Canada, The Netherlands, Denmark and Estonia have been involved in fierce fighting in the south of Afghanistan. Yet other countries, such as France, Italy and Germany, have refused to send their soldiers to the most dangerous parts of the country. Currently troops from these countries are helping to train a new Afghan army and police force.

Most of the summit was spent talking about the war in Afghanistan. The U.S. and Britain want other NATO countries to send more troops to the country. Other members agreed to send an extra 5,000 soldiers. Yet most of these will only stay long enough to help with the elections due to be held in the summer.



60th anniversary summit logo

NATO is led by a Secretary-General. The current Secretary-General is Jaap de Hoop Scheffer, a Dutch politician. He has been the Secretary-General since 2004 but will soon be retiring. During the summit NATO members confirmed that Anders Fogh Rasmussen, a

former prime minister of Denmark, will officially take over as the new NATO Secretary-General on August 1. ■

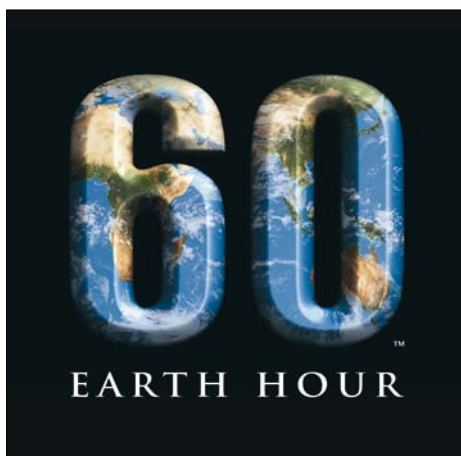
## CITY BLACKOUT

The city of Sydney, in Australia, went very dark for two different reasons at the end of March and the beginning of April.

Many people around the world celebrated Earth Hour between 8:30 p.m. and 9:30 p.m. on 28th March. This annual event was first started in Sydney in 2007. It's meant to make people more aware of how much energy we use. For one hour on the night of March 28th, people are encouraged to turn off all the lights and electrical equipment in their houses.

The organizers of Earth Hour say it isn't really about trying to save the electricity we use in that hour. They believe Earth Hour is more of a symbol that we use too much

electricity, and could use less if we were all more careful about things such as turning off lights.



*Earth Hour poster*

Whole cities now participate in Earth Hour by switching off street lights and the lights in many buildings. In Sydney, this is quite noticeable, especially because the lights illuminating the famous Sydney Opera House and Harbour Bridge are turned off. Organizers think around half of the people in Sydney switched off their lights to mark Earth Hour.

This year, over 4,000 cities took part in Earth Hour. This was ten times more than 12 months ago. In London and Paris, the lights that illuminate Big Ben and the Eiffel Tower were turned off. In New York, in the U.S., all the lights in the huge United Nations (U.N.) headquarters building were also switched off.

On March 31, the city of Sydney went dark again. This time, though, it was because of a large power failure. The city's power company said there had been faults on four major electric cables.

The blackout hit parts of the city just before 5:00 p.m. About 70,000 homes and businesses are thought to have lost electricity for over two hours. The Sydney Opera House had to cancel its performance that

night. More than 100 sets of traffic lights were affected.

On the morning of April 4, another blackout happened. This time more than 50,000 buildings had their electricity cut for about one hour. Several people called the fire brigade because they were stuck in elevators and had to be rescued.

The energy company says the blackout happened as it was carrying out fire protection work on its cables. It will investigate why the backup supply of electricity failed both times during the power cuts. ■

## TB RESEARCH DONATION

On April 1, Bill Gates announced his foundation would make a donation to help fight tuberculosis (TB).

Bill Gates is one of the world's wealthiest people. He is the chairman of the Microsoft Company, which he co-founded with a school friend in 1975. The Microsoft company designs and makes computer software. It's estimated Microsoft software is used on 95% of the world's computers.

Mr. Gates and his wife, Melinda, wanted to be able to use their money to help people who need it. They decided to set up the Bill and Melinda Gates Foundation in 2000. It's the largest private charitable foundation in the world. The aim of the Foundation is to improve healthcare and reduce poverty.

The money donated by the Foundation is used directly to provide healthcare to people who need it. It is also used to pay for scientific research. For example, the Foundation has given around \$290 million to different groups of scientists around the world who are trying to find a cure for HIV/AIDS.

## NEWSCAST

**JAIL FOR CHEATING** — Eight parents and teachers in China have been caught helping children cheat in school exams. Students in China take exams to get into university. A teacher faxed the test questions to the parents once the exam had started. The parents paid several university students to quickly write answers to the questions. The parents then transmitted the answers by cell phones to their children taking the exam. The children were wearing tiny earpieces to receive the answers. The Chinese authorities have now sent the parents and teachers to jail for periods between six months and three years.



The scientists were given the money on the condition they share their information with all the others. The Foundation has also given large amounts of money to pay for research into treating TB.

On April 1, Mr. Gates attended a meeting in Beijing, the capital of China. Health experts and ministers from around the world were there. Mr. Gates announced his Foundation would work with the Chinese government to improve treatment of TB in China. The Foundation will give a grant of \$33 million over the next five years.



Bill and Melinda Gates

Experts from the World Health Organization (WHO) say China is one of the countries worst-affected by TB. TB is an infectious disease that usually attacks the lungs. People in some parts of China have caught a drug-resistant type of TB. This means the version of the disease they have is not affected by the two drugs that most successfully treat TB in other parts of the world.

Most of the Foundation's new grant will be used for researching and treating this drug-resistant type of the disease. China says it will start new ways of testing people for TB as well as monitoring those who already have the illness. For example, to make sure people keep taking the medicine given to them, doctors will send text messages to patients' cell phones as a reminder. ■

## WHY MONARCH BUTTERFLIES MIGRATE

A new study has begun to solve the mystery of one of the world's biggest migrations.

The monarch butterfly is an insect that lives mostly in Canada and the U.S. Every autumn millions of monarch butterflies migrate south. Many travel almost 2,500 miles (4,000 kilometers) to Mexico. Most of these butterflies go to one place – an area called Angangueo. This place is known as the Monarch Butterfly Biosphere Reserve. It is a protected area.

Butterflies only live for a few weeks or months. Therefore, the monarch butterflies that make this very long trip have never done it before. Scientists have different ideas on how the butterflies manage to find their way to the same place year after year.



Monarch butterflies

How long the monarch butterflies live depends on when they breed and lay eggs. If a butterfly lays eggs early in the summer, it only lives a few weeks. The butterflies that don't breed are the ones that are still alive as autumn approaches. It is these butterflies that live longest and migrate south.

Scientists at a university in the U.S. wondered if the reason for the migration could be something to do with the butterflies' genes.

Living things are made up of millions of microscopic building blocks called cells. Cells each contain an even smaller part called the nucleus. This carries a set of coded information called the genome. Even tinier sections, called genes, carry the coded information that gives living things different features.

The scientists began studying groups of genes in the summer and autumn butterflies to see if there were any differences. They wondered if there could be a "migration" gene in the autumn butterflies that somehow made them all gather and migrate.

The study didn't find a single "migration" gene, but it did show a group of genes that acted differently depending on whether the insect was a summer or autumn butterfly. It's possible a change in the environment for the longer-living butterfly could make the genes act differently.

The scientists plan to carry on studying the ways in which the butterflies' genes act, to see if they can find out how so many monarch butterflies manage to find their way to Mexico. ■

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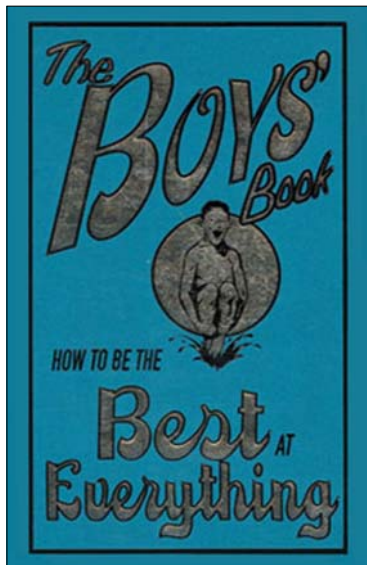
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## B O O K R E V I E W

### HAVE YOU READ ...?



This book's cover has a retro 1950s look – but it's not a reprint of a boys' book from over 55 years ago. It's actually a fascinating how-to book that's sometimes also a survival guide.

A lot of us don't get outdoors very much. Some of us spend hours in front of computers instead of outside. Yet this book shows you what you can do to get out into the wild: make your own campfire, climb a palm

tree, read a compass, escape from a crocodile attack... even survive a volcanic eruption! It really also tells you how to do these things – it's not a "joke" guide. How to give mouth-to-mouth resuscitation is one of the most serious skills in this book (though it's still best to learn this in a first aid class).

Not all the tips here are serious survival tips. Some are fun tricks and skills that show you how to impress others with very little at hand. Playing a blade of grass or showing you're a VIP might be fun ways to show off to your friends. How to juggle is easy to read, but you could spend lots of time practicing this tricky skill. One of my favorites is how to tie a knot with one hand – I just tried that one, and it worked after several failed attempts. How to write a hidden message is something you can use in secret, while hooting with your hands could annoy just about everyone near you.

One page shows how to get an egg into a bottle. This is something I never did as a kid! Yet it tells you how to do it step-by-step, showing you everything you need (including the egg, which you'll have to boil first). There's a real mix of things – you'll get some great advice on how to do a jump-shot in basketball (if you don't do it already) and how to teach a [parakeet](#) to speak. A part I thought was fun was how to make a tumbler out of paper – it's a paper shape with lots of folds and angles, which can tumble with a gentle push.

You might be able to use this book for school too. "How to see through your hand" could be a nice one to demonstrate in science class. You will not ever want to attempt "How to Mummify an Ancient Egyptian" – but it would make for an interesting history report.

We live in an age of computers, and certain skills may be forgotten and left behind by many computer users. Most people send e-mail these days, but learning how to write a letter is still very important, and this book shows you how to do it properly.

Do you know how to send a message by semaphore? There's a chart in this book showing semaphore codes of every letter in the English alphabet. I tried "How to Test Your Telepathic Powers" repeatedly, but couldn't learn that skill, so I guess I'm no psychic. However, the book does show you how to tell if someone is lying to you...

Maybe you think some of these skills and tricks seem silly, but there's nothing silly about knowledge of the outside world. I also like how the authors make all these skills and activities seem highly possible – even probable. You really feel as if you could do these things.

There is also *The Girls' Book: How to Be the Best at Everything*. Read it, follow its directions, get outside and get physical!

*The Boys' Book: How To Be The Best at Everything* by Dominique Enright and Guy Macdonald, illustrated by Nikalas Catlow. Scholastic Inc.

Reviewed by **Craig Purdon**

### WANT US TO REVIEW A BOOK THAT YOU HAVE READ AND ENJOYED?

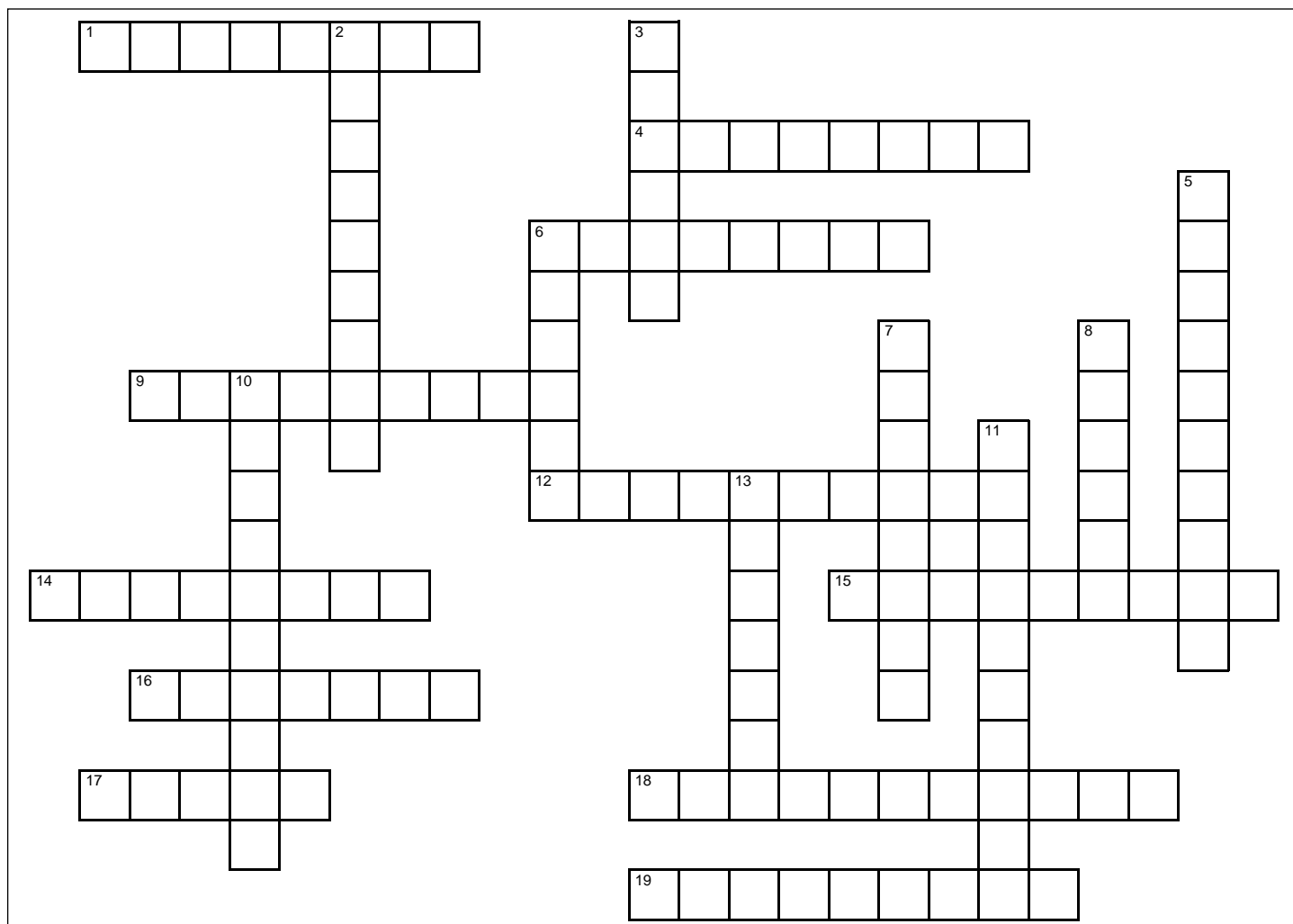
If you do, look for the "recommended book" link in your subscriber menu when you log in to our website.

Complete the form and tell us why you enjoyed the book. If we review your choice, we'll mention your name and include some of your comments.

# GLOSSARY

## PRIZE COMPETITION

**INSTRUCTIONS:** ① Complete the crossword. The answers are highlighted in orange in the news stories. There are 25 words highlighted and you need 20 of them to complete the crossword. ② Once you have solved the crossword find the 20 words in the word search on the next page ➡



### ACROSS

- 1 *Verb* Preserved a dead body (8)  
 4 *Verb* To resign from a throne (8)  
 6 *Noun (Plural)* Formal written agreements among two or more countries or groups of people, and signed by their leaders (8)  
 9 *Adjective* Describes a person who supports a political system in which only one party rules and most property is owned by the government (9)  
 12 *Noun* The way in which an animal or insect is colored to avoid being seen by attackers (10)  
 14 *Verb* Acted against the law (8)  
 15 *Noun* A reduction in a country's trade or prosperity (9)  
 16 *Verb* To cause something to start (7)  
 17 *Noun* A sum of money given to a person or organization for a special purpose (5)  
 18 *Verb* Exposed or put in danger (11)  
 19 *Verb* Directed many things at something or someone (9)

### DOWN

- 2 *Noun* A large or elaborate tomb (9)  
 3 *Noun (Plural)* Tricks played to deceive people (6)  
 5 *Noun* The systems for taking waste products and dirty water away from buildings to protect people's health (10)  
 6 *Noun* A method used to achieve something or gain an advantage (6)  
 7 *Noun* A small parrot with a long tail (8)  
 8 *Noun (Plural)* Islands consisting of circular coral reefs that surround lagoons (6)  
 10 *Noun (Plural)* The movements of animals or insects from one place to another, usually when the season changes (10)  
 11 *Adjective* Happening again and again, especially in a way that is boring (10)  
 13 *Noun* Heavy radioactive metal used in the production of nuclear power and in some types of nuclear weapons (7)



|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 2 |   | 7 |   | 1 | 3 |   |   |   |
|   |   |   |   |   |   | 5 | 3 | 6 |
|   | 4 |   | 6 | 8 |   |   |   |   |
|   | 2 |   |   |   |   |   |   | 8 |
| 4 |   |   | 2 |   |   | 9 | 7 | 1 |
| 8 | 3 |   | 1 |   |   |   | 2 |   |
| 3 |   |   | 8 | 9 |   | 2 |   | 5 |
| 6 |   |   |   | 4 |   | 1 |   | 7 |
| 1 | 8 | 5 |   | 2 |   | 4 |   |   |