

Science & Technology Magazine

Mearns Castle High School

NEW MAGAZINE

Hello and welcome to the first edition of the Science and Technology magazine.

In this edition we have a taster of some of the things we hope to bring you in future editions.

All articles have been written by a small group of pupils in S1-S4. We have tried to create a festive edition, so you will see that the majority of the articles will follow this theme.

In this edition you will see the eagerly anticipated results of the recent Christmas wish list questionnaire you completed in citizenship classes.

We also have an article on technology in sport that we hope to be a regular column in future editions.

Please let us know your thoughts on this edition and we would love to hear any ideas you may have for future articles.

We would like to cover stories that you are interested in and include the odd competition so have a think and send your ideas to Mr Phillips, Mr McGarry or Mr McLean. If anyone has a suggestion for a new name for the magazine or would like to get involved, please let us know.

We would like to take this opportunity to wish all staff and pupils at Mearns Castle a Merry Christmas and a Happy New Year.

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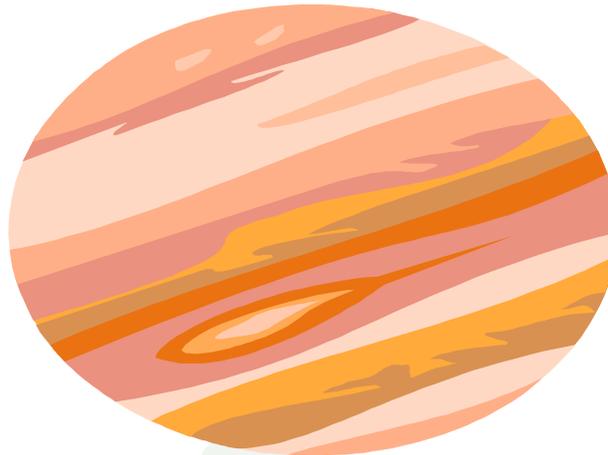
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JUPITER

On July 16th 1994 a comet—a giant ball of ice— was on an impact course for Jupiter. The eyes of the world were on Jupiter and it was possible it would be the last time they saw anything like it. Loads of people were watching and when it hit, the picture was fuzzy but the explosion was colossal. It was a new step in finding out how the world started in the first place. Scientists now believe that comets collided with the early earth and created our oceans.



Jupiter

Cameron James S1

21.12.12

NASA has denied rumours that doomsday would be on the 21st December 2012. They released a video that was meant to be released on the 22nd, the day after. It was released about 5 or 6 days before December 21st 2012. The video explained how the world was not going to end on the 21st. Here is the story— The Mayans were a civilisation

that lived a long time ago. They made up their own calendar which ends on December 21st 2012 but scientists think their calendar was cyclical like our own. Scientists have studied the artwork and remains of things from the Mayans but nothing suggests the end of the world. There are still buildings and remains from the Mayan

civilisation that some believe act as “bunkers” to act as protection from the apocalyptic event. Some people thought there was a rogue planet on a crash course for earth but if there was, it would be the brightest object in the sky.

Cameron James S1

“NASA deny DOOMSDAY rumours”

RIVERS ON TITAN? EXPLORING SATURN

For one, I think, Saturn is definitely the most beautiful and exciting planet in the solar system. However, scientists have revealed that there may be liquid methane flowing on the surface of Saturn’s moon Titan.

Scientists with NASA's Cassini mission have spotted what appears to be a miniature, extraterrestrial likeness of Earth's Nile River: a river valley on Saturn's moon Titan that stretches more than 200 miles (400 kilometres) from its "headwaters" to a large sea. It is the first time images have revealed a river system this vast and in such high resolution

anywhere other than Earth.

"Though there are some short, local meanders, the relative straightness of the river valley suggests it follows the trace of at least one fault, similar to other large rivers running into the southern margin of this same Titan sea," said Jani Rade-

baugh, a Cassini radar team associate at Brigham Young University, "Such faults - fractures in Titan's bedrock -- may not imply plate tectonics, like on Earth, but still lead to the opening of basins and perhaps to the formation of the giant seas themselves."

Technology in Sport

This issue's Technology in Sport is

Football

!Goal line technology!

Goal line technology is used to prove or check a goal has been scored. It has not been tried in British football yet BUT is predicted to be in the Premiership by 2014. There two main types of the technology: Hawk-Eye and GoalRef!

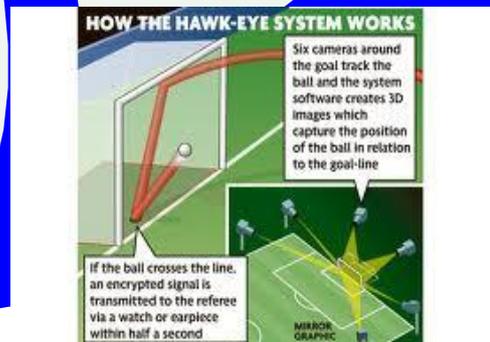
Hawk-eye is a type of technology made and designed in Great Britain. This has been used in tennis, cricket and snooker before and is just getting tried in football. There are a number of cameras placed around the stadium so that it covers all angles of the goal. When the ball crosses the line, the pictures taken get placed together to see the path of the ball. This can detect if the whole ball crosses the line. If the ball crosses the line, the cameras send a message, "goal" to the referee's watch which vibrates and tells him the team have scored. This message can get sent to the referee within a second of the goal being scored. And don't think the referee is giving the goal against your team because Hawk-Eye can give a TV replay to prove that a goal has been scored.



Sensor inside ball (GoalRef)

GoalRef

GoalRef is a German-Danish designed technology. There is a sensor inside the ball and a magnetic field on the goal line which uses sensors on the goal posts and cross-bar that can then detect the ball crossing the line. When the magnetic field is broken by the whole ball crossing the line a message, "goal" gets sent to the referee's watch which vibrates when the goal has been scored. This is great because say the referee cannot see the ball, the message will get sent to him and he will then know its a goal. The technologies get sent to labs to get checked. For example placing the watches in different environments to see if they can withstand the temperatures, climates and most of all the rain.



TABLET WARS

Samasug galaxy note 2:

It hasn't even been a year since the original Samsung Galaxy Note launched. It was a work of genius for old Samsung. Many (including us, we admit) were not convinced. Who on earth would want something so big to make their calls and surf the internet, even with a glorified stylus?

Cue awkward silence.

Millions of you, it would appear. The Samsung Galaxy Note has sold by the bucket load. And while it is most definitely a niche device, it's done wonders for Samsung's balance sheet. How do you follow that up? With something better, of course - the Samsung Galaxy Note 2.

Ipad:

The new iPad, the iPad 3, the new iPad 3... call it what you want, but it's a device that from the outside looks remarkably like the iPad 2 but with an overhaul on the in-nards.

The question most people ask us when it comes to the new iPad is: what's different from the old one? Well, in this case it's pretty easy: there's a Retina Display that makes everything look superbly crisp, an updated A5X processor bringing quad-core graphics and a 5MP camera on the rear with a VGA sensor on the front

Amazon kindle Fire HD:

You wait a year for an Amazon Kindle Fire to make its way to the UK, then two come along at once, with the greatly enhanced Amazon Kindle Fire HD arriving at the same time as its predecessor.

We'll say this from the off: now that the Amazon Kindle Fire HD is here, the original Kindle Fire seems somewhat surplus to requirement

Blackberry Playbook:

It's probably fair to say that the BlackBerry Playbook had something of a rocky start to life. Hailed by many as the first worthy successor to the iPad when it was announced, it eventually arrived with a bit of a crash landing, pulling in average reviews and failing to really attract customers. In no small part, the problem was that it didn't come across as the kind of complete package that the iPad 2 - released about the same time - did. Its lack of third-party apps was a shame, but the fact that it lacked its own email and calendar apps, relying on a BlackBerry phone to provide this functionality, really dragged it down.

"iPad : what's different from the old one?"



MICROSOFT PRICES SURFACE WITH WINDOWS PRO TABLETS

Kyle Lambie S3

Microsoft has announced that it will charge £560 for the new basic version of its Surface with Windows Pro tablet. The new Surface will be released in January 2013. The newest feature is an Intel chip allowing it to run the full version of the Windows 8 operating system.

The new price is about £248 more than the existing Surface tablet with Windows RT tablet, which is less powerful and does not run programs such as Photoshop. This only just came out at the end of October.

The new version with windows 8 is intended to challenge the iPad and Android-based tablets.

Microsoft's chief executive, Steve Ballmer, told shareholders this week that the fact his firm was releasing its tablets more than two years later than Apple might have contributed to its share price being outpaced by its rival.

He had early stated that he was certain sales of the original Surface would grow. However this happen when the new Surface tablet will cost just under £250 more than the original and it will come out just about 3 months after Surface was first released.

The Windows Pro version is heavier in part because it features a higher capacity battery to run its more power-hungry processor. It will be offered in 64GB of storage for £561.43 or 128GB of storage for £623.88. Neither price includes one of Microsoft's keyboards, which add at least another £99.

So what I think is why Microsoft they released the first Surface tablet when they could have and had just make us wait a little while longer to release the windows Pro Surface before Christmas and a lot more people might just decide to get it even though the cost is a wee bit too high.

I suggest that you sit back and wait for other products which may be even more compelling or cheaper and not become too fixated on what is a first-generation Microsoft device.

THE DIAMOND PLANET

The 'Super earth' exoplanet

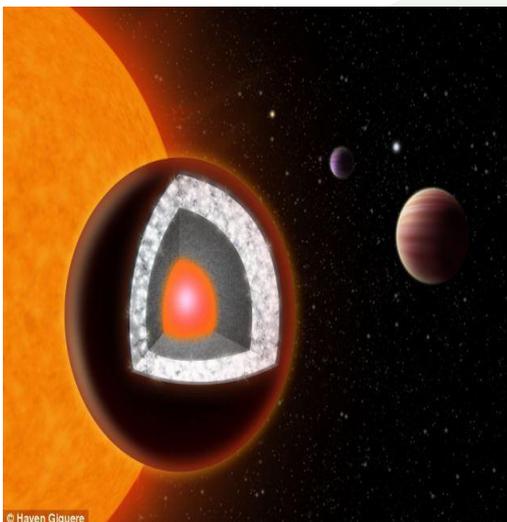
The planet's radius is twice that of Earth's, but its mass is eight times greater, making it a "super earth". It orbits its own star at hyper speed, with a year lasting just 18 hours, and surface temperatures reaching a blistering 2,150C with no possibility of liquid water and therefore life.

Why diamond?

'Its outer crust is largely composed of solid carbon crystals.' This means the planet is mostly made up of compacted carbon atoms which are usually either diamond or graphite.

Where is this planet?

The diamond planet is one of five "exoplanets" orbiting a distant star called 55 Cancri, some 40 light years away from our own Solar System but still visible to the naked eye in the constellation of Cancer.



IF YOU COULD HAVE ANY GADGET FOR XMAS WHAT WOULD IT BE?

Here are the results of the recent survey carried out during citizenship classes. The votes were collated from all S1—S4 pupils. As you can see, Apple products once again appear to be the most desired gifts this Christmas.

GADGET	% of votes
iPhone 5	37.14
iPad mini	21.42
Macbook	17.14
Beats headphones	4.28
Go-pro	3.33
laptop	6.19
iPod	4.76
Kindle	5.71



Thanks to Mrs Thompson for helping gather the data.

