



Views You Can Use

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Education Trends

Your Assignment Is on Your Wrist

Instead of lugging home extra books and worksheets, students who miss a day of school may soon be wearing their makeup work on a small plastic bracelet that contains the day's lesson. Macedonia Middle School in rural school South Carolina is one of the first schools to pilot test the product. The school has purchased 10 of the SMART Notebook SE bracelets for about \$300 a piece. A teacher or student can download a lesson from an interactive whiteboard onto the bracelet. Students can then access the lesson from their home computers. The bracelet uses the same software as the electronic whiteboards and runs automatically from the bracelet. In addition to catching up on work they missed, students can use the bracelets for remedial work and extra academic practice.

Source: <http://en.sourcews.com/smart-notebook-available-wearable-usb>

Brain Research Trends

Protein Controls the Process of Long-Term Memory

As most good students realize, repeated studying produces good memory. Some students may also realize that what they learn tends to be preserved longer in their memory if they space out studying sessions between rest intervals. Neuroscientists at Cold Spring Harbor Laboratory in Long Island have discovered that this so-called "spacing effect" is controlled in the brain by a molecular timer — a protein called SHP-2 that determines how long rest intervals need to be in order for long-term memory to form. The discovery could lead to new learning strategies for students with special needs.

Derived from a fruit fly model, the finding is based on research that focused on genes which, when mutated, trigger learning and memory disorders, such as Noonan's syndrome. Many people who have the syndrome have mutations in a gene called PTP11, which encodes the SHP-2 protein. These gene mutations boost the activity levels of the protein. To understand how this change impedes long-term memory formation, researchers engineered these mutations into a gene in fruit flies which is the functional equivalent of the human PTP11. They found that as each learning period ends, SHP-2 protein activity inside stimulated neurons triggers a wave of biochemical signals, which have to peak and decay before the next learning session can begin to induce long-term memory. In normal flies, these signal waves took 15 minutes to peak and decay. In the mutants that had excess protein activity, however, the signaling wave took 40 minutes to decay. It is crucial, therefore, that the period of rest lasts as long as it takes for a signal wave to form and reset.

Source: www.lifesciencesworld.com/life-science-news/view/120096

Technology Trends

Deposit a Check by Phone

USAA, a private bank and insurance company, has introduced an iPhone feature that allows customers to deposit checks electronically. Customers snap a picture of both sides of a signed check and then send the images directly to the electronic banking site. Once they hit the "send" button, the deposit is instant. To allay fraud concerns, only customers who have insurance through the bank are permitted to use the application.

Source: www.nytimes.com/2009/08/10/technology/10check.html?_r=1

Modeling Robots to Think Like a Child

Robotics researchers from across the globe are discovering the best way to model a human mind: create a humanoid that is allowed to explore the world like a real child. Consider CB2, a humanoid created by researchers at Osaka University in Japan that is designed to learn like a human infant. The idea is for the robot to think like a human baby, who evaluates a mother's facial expressions and groups them into basic categories — happiness, sadness, etc. With nearly 200 film-like pressure sensors, CB2 can recognize human touch, such as stroking of its head. Over the past two years, CB2, about four-and-a-half feet tall, has learned to walk with the aid of a human using 51 "muscles" driven by air pressure. The robot can record emotional expressions using eye-cameras, then memorize and match them with physical sensations and cluster them on its circuit boards.

Then there is iCub, which originated at the Italian Institute of Technology in Geneva. Scientists are working on several versions of the three-foot robot in laboratories throughout Europe, attempting to perfect its brain. In a recent experiment in Lyon, France, iCub demonstrated that it could change roles in a game. iCub watched two people play a game in which one lifted up a box to reveal a toy and the second lifted up the toy and put it down again. The first person then replaced the box over the toy. Having watched the game, iCub could take part as either player.

Sources: www.physorg.com/news158151870.html
www.physorg.com/news171703166.html

Biotechnology Trends

Running on — Chocolate

At the University of Warwick in the United Kingdom, an engineering team has designed and built the world's first fully sustainable Formula 3 racing car that runs on chocolate-based fuel. The car is made from woven flax, recycled carbon fiber, and recycled resin, as well as carrot pulp for the steering wheel. It runs on biofuel made from chocolate and animal fats and is lubricated with plant oils. The car has a top speed of 135 mph, can achieve 0-60 mph in 2.5 seconds, and is turbo charged to give it more torque. The car was scheduled to make its first competitive debut in the Formula 3 Championship final at Brands Hatch in England on Oct. 17.

Source: www.eurekalert.org/pub_releases/2009-10/eaps-wsr100509.php

Gene Therapy to Keep the Heart Going

Scientists from the universities of Michigan and Minnesota have shown that gene therapy has the potential to reverse the course of heart failure. More than 285,000 people in the United States die each year of heart failure. The research team treated heart muscle cells from the failing hearts of rabbits and humans with a virus modified to carry a gene. The gene produces a protein that triggers heart cells to contract normally.

Heart failure is a condition in which the heart cannot pump enough blood to meet the oxygen needs of other body organs, according to the U.S. Centers for Disease Control and Prevention. The most common causes of heart failure are coronary artery disease, hypertension or high blood pressure, and diabetes.

Source: www2.med.umich.edu/prmc/media/newsroom/details.cfm?ID=1324

By the Numbers

It is expected that people will rely increasingly on their cell phones to conduct banking transactions.

- Nearly half of people with cell phones have access to mobile banking today.
- By 2014, 45% of mobile-phone users will use mobile banking.
- About 99 million U.S. adults will conduct mobile banking transactions at least once a year by 2014, with 52% of mobile-phone users relying on smartphones.
- Mobile banking will rival online banking, with the former used as a “remote control” and the latter as a detailed form of control panel for more complex transactions.
- AT&T has the highest number of mobile bankers due to the iPhone’s influence, while Verizon Wireless has the lowest penetration for mobile bankers among the top-tier U.S. wireless carriers.

Source: <http://finance.yahoo.com/news/Half-of-All-iPhone-Users-Do-bw-1273734143.html?x=0&.v=1>