

**LEVEL 3**

# **SEVENTH AND EIGHTH GRADE NEWS**

**FRIDAY, NOVEMBER 9, 2018**

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## **Grandparents & Special Friends Day: Our Annual Multicultural Potluck**

**Friday, November 16 11:45-1 PM**

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### **Grandparents & Special Friends Day: Our Annual Multicultural Potluck**

Twelve years ago, a Level 3 student proposed the idea of a multicultural potluck, and it was approved overwhelmingly by the Level 3 students. Little did we know it would become a tradition in Level 3, as we now prepare for our 12<sup>th</sup> Multicultural Potluck.

If you are new to Level 3, you're probably wondering what this event is. Each year students bring in a dish from their family heritage to share at the potluck. Alternatively, students may also bring in a dish from a world cuisine of which their family is fond. The dishes will be shared on Grandparents and Special Friends Day with grandparents, special friends, parents, and the Level 3 community.

We ask two things:

1. That the student make or have a hand in making the dish, and
2. Each dish come with a label, telling what it is and listing the ingredients (for those with allergies)

Our potluck lunch will begin at 11:45 on Friday, November 16. Parents are of course invited! We look forward to seeing you then!

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### **Academics**

Another science-filled week has passed. Students continued to work on electron configurations and completing orbital diagrams. They also learned about how the filling of atomic orbitals (derived from the quantum mechanical model of the atom) coincides with the layout of the periodic table. Students also took part in a lab activity where we performed flame tests on various metal salts.

Seventh and eighth grade students are currently working in small groups to prepare presentations on 1.) fullerenes, carbon nanotubes, and nanochemistry, 2.) alcohols and carboxylic acids, and 3) ionic crystals. Each group is researching their topic and preparing a powerpoint presentation, building models, and planning a science demonstration relevant to their topic.

**Our science test will be next Thursday. Students received study notes on Wednesday.**

As part of Personal World, we are learning about brain changes during adolescence. This week we read and discussed an article, “My Limbic System Made Me Do It,” which inspired a lengthy and substantial discussion in our class. The article addresses adolescents’ propensity for risky behaviors as part of the rapid changes in the brain’s limbic system, the seat of emotions. A copy of the article is posted at the end of this newsletter, and it is definitely worth a read.

Students also worked on math, vocabulary, literature responses, their weekly apprentice sentence, and their mentor author projects..

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### **Land Lab Trip Rescheduled for Morning of Wednesday, November 14**

We have rescheduled our trip to the land lab for this coming Wednesday, November 14. We will be departing around 8:45 AM, and we will return around 11:45 AM.

**We are looking for drivers. If you are interested in driving and chaperoning next Wednesday morning, let Robin know.**

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### **OUTREACH 360 Trip to the Dominican Republic, May 4-11: PASSPORTS**

At this time, we are checking the status of passports for all those planning to go on the big trip. Please let us know if your daughter or son has a current passport. We urge all attendees to have passports by the end of January.

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### **Questions?**

PARENTS AND STUDENTS: We encourage you to contact us with any questions and concerns. The best time to call us is in the evening; alternatively, you can email or text us any time:

Robin	<a href="mailto:redidin@gmail.com">redidin@gmail.com</a> 941-544-5617 (cell)	Beronica	<a href="mailto:charvero.14@gmail.com">charvero.14@gmail.com</a> 941-586-9024 (cell)
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### *Thank You to...*

- Kelly Mclemore, Kris Fleddermann, and Ivano Tirapelle, for hours of help setting up the haunted house, and for bringing urgently needed supplies just in the nick of time,
- Joe Zejavac, for picking up the dry ice for our parade and haunted house

•Kerrie and Mackenzie Rupprecht, Kris Fleddermann, and Zoe and Sara Najmy, for their substantial contribution to our haunted house clean up, and

•Kris Fleddermann, for shopping for our store and hot lunch business.

*Level 3 Families, we are always grateful for all that you do!*

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## Mark Your Calendars

Grandparents Day.....Friday, November 16  
Thanksgiving Week Break.....November 19-23  
Level 3 Dance.....November 30  
7th and 8th Grade Physics Day Field Trip.....Friday, December 7   Holiday  
Music Program.....Saturday, December 8  
Winter Break.....December 22-January 6

**Regularly Scheduled:** Tuesday Tutorials.....3:15 - 4:30 PM

MATHCOUNTS: Wednesdays ..3:15 - 4 PM

**OUTREACH 360 Trip to the Dominican Republic: May 4-May 11**

*-The Level 3 Team (Robin, Deana, Erica, and Beronica)*

**Please** send any email address changes and updates to [redidin@gmail.com](mailto:redidin@gmail.com)

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## My Limbic System Made Me Do It

Any sensible teenager clearly understands the dangers associated with risky behaviours such as impaired driving or unprotected sex. Yet teens seem to have trouble putting this knowledge to use.

In Canada, the leading cause of teenage death is car crashes, followed by suicide. Although teenage pregnancy rates are declining, every year in Canada 33,000 teenagers become pregnant, and 18,000 of them have abortions. Rates of reported sexually transmitted infections rose every year from 1998 to 2002. Teens often seem to go out and do exactly what they know could be bad for them. What parent has not wondered why?

Peer pressure is one popular theory. At this developmental stage, teenagers are often in conflict with their parents, spending more time with peers and increasingly influenced by them. Peer influence, though, is at best a partial explanation for the poor decisions teenagers make.

A recent review paper proposes an interesting neurobiological model to account for the risky behaviours and poor decisions that plague adolescence. Using evidence from animal and human studies of brain development, Casey and colleagues at the Medical College of Cornell University and the California Institute of Technology show how the model is plausible from an evolutionary perspective, and demonstrate how it can account for the vexing paradox of teenagers doing things they know better than to do.

Ross Hetherington, neuropsychologist at The Hospital for Sick Children and Director of AboutKidsHealth, said, "The authors have made a compelling argument for the neurobiological model of adolescence, summoning converging evidence from a range of studies and fields of inquiry."

To understand the problems of teenage behaviour, it is important to look at development over a long period instead of examining cross-sectional 'snapshots' of teenage decision-making. When you take this developmental view, behaviour does not change in a straight line or linear manner from childhood through adulthood. Risky behaviour does not improve consistently and evenly from childhood through adulthood, but rather peaks in the teenage years, revealing an issue that is unique to adolescence. In some cases, teenagers make significantly poorer decisions than children half their age.

## Two behaviours, two brain systems

The peak of inappropriate behaviour and emotional reactivity during adolescence is described as risky and impulsive. However, impulsivity, or lack of cognitive control, should not be treated as the same phenomenon as the act of taking a risk. In fact, separate regions in the brain mediate each behaviour, and each region matures according to a different timetable.

At the front of the brain is a region called the prefrontal cortex, which is associated with cognitive control and managing emotion. The prefrontal cortex is the last brain region to fully develop, with maturation continuing through the teen years. As the frontal lobes mature, the ability to regulate impulsivity and make better goal-oriented choices improves. As a result, some researchers have proposed that the immaturity of the prefrontal cortex explains the poor judgment of adolescents. But if this neurobiological model of teenage behaviour was correct, it would follow that children, whose frontal lobes are even less developed, would make poorer decisions than teenagers do. This is not the case. So what else could be going on?

Risk-taking is linked to an older part of the brain: the limbic system. This set of structures, deep in the brain below the cortex, is involved with judging incentives and emotional information. Unlike the prefrontal cortex, which develops slowly into adulthood, these subcortical limbic systems are almost completely developed by adolescence. Brain imaging shows that risk-taking and processing emotional information intensifies the activation of the limbic system, and that this intensification is exaggerated during the teen years. This means that when a risky choice has a strong emotional incentive, such as winning the admiration of peers, the limbic system is strongly activated by the emotional heft of the situation. The emotional, incentive-driven limbic system wins over the immature prefrontal control system - and a risky choice is made.

There is evidence from animal studies to support this model, with structures of the limbic system maturing earlier than those of the frontal cortex in many species. During adolescence, many animal species become more socially active with peers, fight with their parents, and are more likely to engage in novelty-seeking and risk-taking behaviours. At the same time, sexual hormones increase. The authors suggest that this developmental pattern, which is consistent with adolescents seeking sexual partners, may have evolved to promote leaving family and village to

find a mate. Heightened emotional reactivity during this period could give some protection from the dangers in a novel environment by enhancing vigilance and awareness of threats. The authors review studies of human brain development that have used three modern neuroimaging techniques: magnetic resonance imaging (MRI), which reveals structural differences in the developing brain; diffusion tensor imaging (DTI), a special MRI method used to study white matter tracts that act as communication pathways between brain regions; and functional magnetic resonance imaging (fMRI), used to measure activity in regions of the brain associated with behaviours such as risky decision-making. These three techniques provide evidence for Casey and colleagues' neurobiological model of adolescence.

## **There's more to behaviour than just the brain**

In the final sections of the paper, the authors discuss individual differences among teenagers in the likelihood of making risky choices. Teenagers as a whole are more likely than children or adults to engage in risky behaviours, but individual teenagers may be at even greater risk because of factors such as more highly reactive limbic systems.

"Understanding the neurobiological basis of this disconnection between knowing what is right and doing what is wrong should help parents be patient with the foibles of the typical teenager," says Hetherington.

"However, as the authors of this paper note, there are teenagers who may be more at risk on a biological basis. But behaviour does not arise from the brain alone. Far from it."

"Behaviour arises in the context of an individual developmental trajectory with many social and environmental influences. Furthermore, we know from other research that patterns of brain activity can be changed by behaviourally based interventions. So for the teenager who consistently places himself or others at risk through poor decisions and impulse control, parents should seek the help of a qualified health or mental health professional with a view to putting an evidence-based intervention in place."

6/22/2010

Casey BJ, Jones RM, Todd AH. The adolescent brain. *Annals of the New York Academy of Sciences*. 2008;1124:111-126.

[www.aboutkidshealth.ca](http://www.aboutkidshealth.ca)