



H. R. M A C M I L L A N

S P A C E

C E N T R E

Sticks and Stars

a program for grade 5 'at risk' boys

in partnership with the Surrey School district and SFU



How do you use hockey as the hook to engage students in space science?



Chris Hadfield would be one way



but we used Newton
and his laws of motion.

a very romantic portrait of Isaac Newton

Collisions



We use examples of 'collisions' in hockey to illustrate Newton's Laws of Motion.





We also talk about collisions in space such as the 'big whack' theory for the origin on the moon.



or colliding galaxies.
And we link movement of objects in space
back to Newton's Laws of Motion.

We then have the boys experiment with their slap shot (in the gym). They measure the speed they can shoot the puck and change aspects of how they hit the puck to see if they can increase puck speed. This is also another opportunity to talk about Newton's Laws of Motion.

We used an iPhone app "baseball speed" to measure puck speed.
<http://itunes.apple.com/us/app/baseball-speed/id321926476?mt=8>



I've noticed a great change in the boys....by the end they are more confident in asking questions.... they have more love and interest towards science. They all want to learn more and are disappointed when the sessions are over.... that is one of the most rewarding parts, I love to know that perhaps I've helped a student spark an interest towards science or engineering.

Raminder Samra, Space Centre Astronomer



The first day of the program, the question that was asked by the students was “when do we start hockey?”

Jesse, classroom teacher and program facilitator

By week 3 of the 10 week program the students were no longer asking when they were going to play hockey as they were excited by the science.



The students design, build and launch bottle rockets - more examples of Newton's Laws of Motion

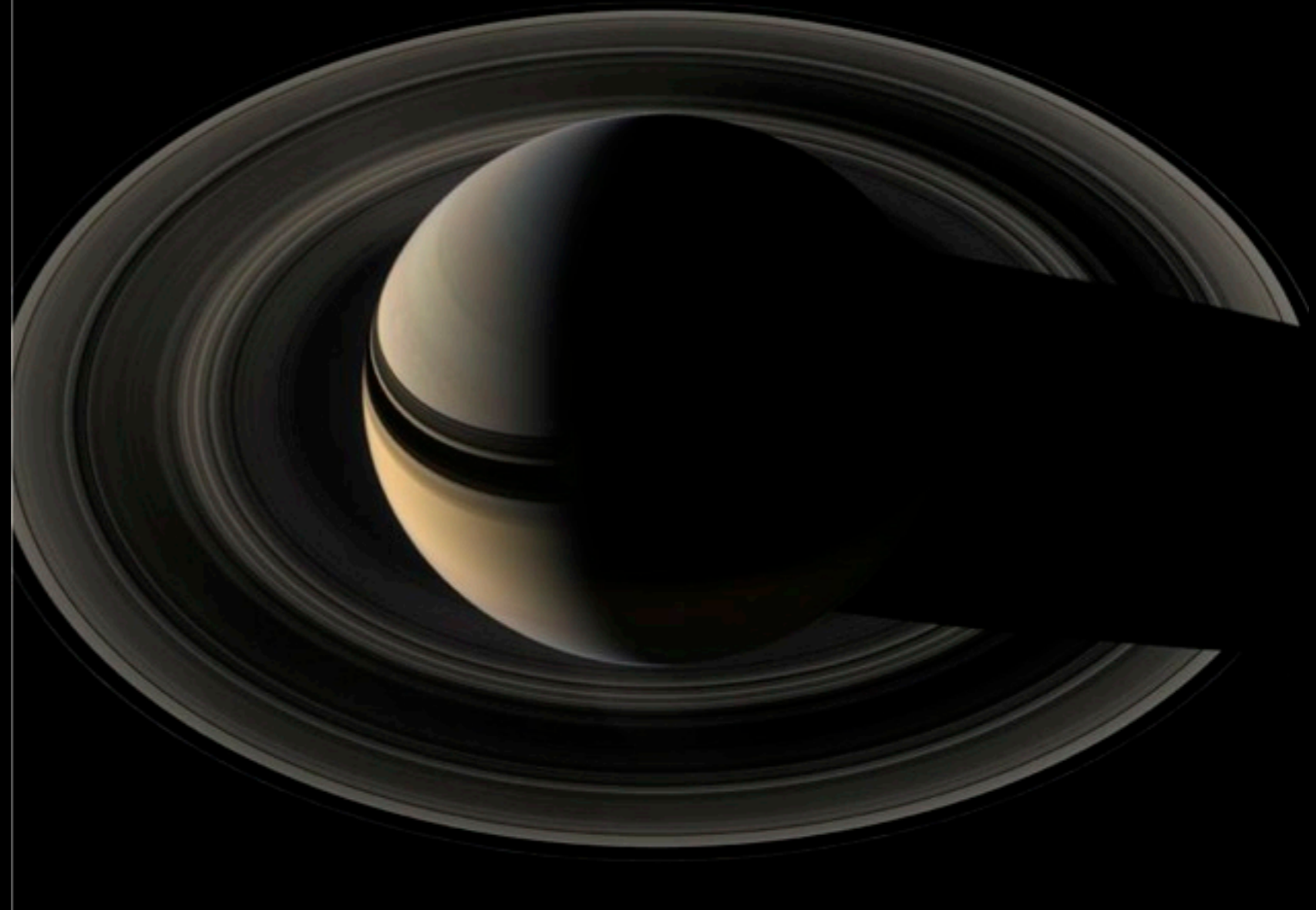


The energy that the students had during the science experiments was equal to, if not greater, than they had when they played hockey.

Jesse, classroom teacher and program facilitator

Their cheers during the finale's of each science activity was just as loud as their cheers when they scored a goal.

Jesse, classroom teacher and program facilitator



There was no doubt in my mind that this program would benefit the students, but I never thought it would impact my teaching.

Jesse, classroom teacher and program facilitator

Science of Hockey Resources

Science of NHL Hockey - videos produced by NSF, NBC and the NHL

The Science of Hockey - online exhibit by the Exploratorium

Hockeyphysics.com