

BIG Science

ISSN 1920-9932 BIG Science (Print)

ISSN 1920-9940 BIG Science (Online)



From the Archives: May 1 2004: B.C. Physics Teachers Love Our Science Centre!

Thirty college and secondary school physics instructors paid a special visit to our **BIG Little Science Centre** on Saturday May 1. Members of the **British Columbia Association of Physics Teachers** were having their annual articulation meeting at **University College of the Cariboo**, but made a special side trip just to visit us. Above, **Tom McMath** of **Kwantlen University College** enjoys one of our newest physics toys.

From the Archives: These photos were taken 13 years ago, when the **BIG Little Science Centre** consisted of two rooms at **David Thompson Elementary School**: one for demonstrations and one for hands-on displays. In 2017 we have far more room and much more to offer visitors.



Left: **Eric Wiebe** (Retired Kam High Physics Teacher) prepares to demonstrate the magnetic rocket launcher.
Right: **Mike Freeman** of Capilano College puzzles over one of our many physics displays.



Student demonstrator **Dustin Anderson** of WSS observes as one of many physics demonstrations is performed by **Gordon Gore**, **Dave McKinnon** and **Eric Wiebe**. Student demonstrators are a very important part of our demonstrations, so they must be properly trained and reliable young people.*

* At David Thompson we had access to intermediate students in the school, who loved being part of the volunteer team.



*Left: **Barbara Frisken** (Simon Fraser University) shows off her magnetic personality.
Right: **Rachel Moll** (St. Thomas Aquinas High School) experiences the static generator.*



Even the big kids enjoy watching the carbon dioxide rocket, which Eric Wiebe is about to launch.

Science KIDBits Get Rich Using Inertia!



You Need:

1 large coin (loonie)

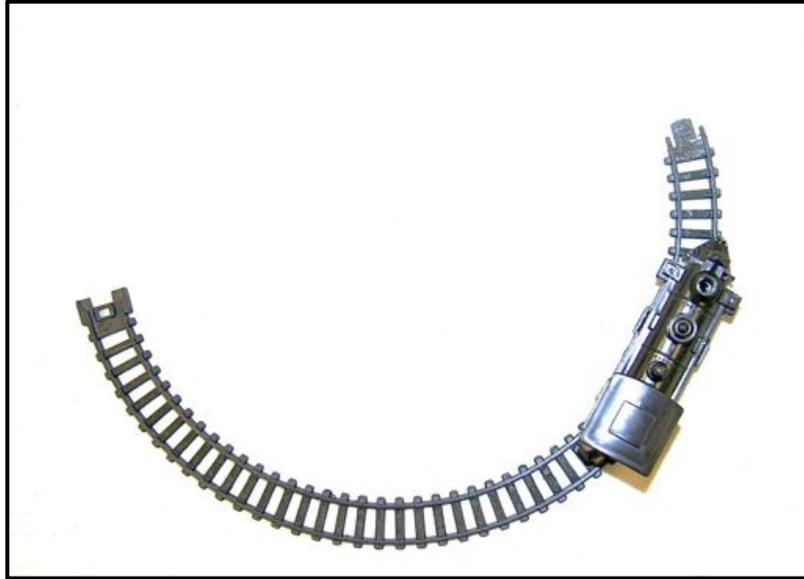
Try this:

1. Have a friend hold a coin in the middle of his or her open palm.
2. Your challenge is to get the coin out of his or her palm faster than your friend can take the hand away. Think inertia!

You may be tempted to grab the coin with your hand. A better method is to place your hand above your friend's hand and quickly knock his/her hand downward. The coin, because of its inertia, will pop right into your hand.

Dr. Gordon R. Gore
Founder, BIG Little Science Centre (retired)

Science KIDBits Getting off Track



Place a battery-powered toy train on a circular track, and let it run a few full circles.

Predict which way the train will go if one of the sections of curved track is removed, as in the above Figure.

Will the train

- (a) continue to move in a circle?
- (b) move off along a radius of the circle?
- (c) move off in a straight line tangent to the circle? or
- (d) follow some other path?

Now *test* your prediction!

Think about It!

What happens to the toy train when it leaves the track?

Galileo observed long ago that an object at rest tends to stay at rest, and a body in motion tends to stay in motion at the same speed and in the same direction, *unless acted upon by an unbalanced force*. (This is sometimes called the **Law of Inertia**.)

While on the track, the train experiences a **centripetal force**, an *unbalanced* force acting *toward the centre*, exerted by the tracks on the train wheels. Take away the track and there is no force to divert the train from a straight-line path. The train travels off in a direction *tangent to the circular track*.

Dr. Gordon R. Gore
Founder, BIG Little Science Centre (retired)

A STICKY PROBLEM

David McKinnon Ph.D.



Gordon Gore Photo

A recent *Chemical and Engineering News* has a short article on investigations into one of life's great mysteries: ***"If two competitors twist an Oreo™ cookie, and pull it apart, which wafer will end up with the cream filling?"***

This was investigated by three Princeton University graduate students, interested in the physics behind this. They took into account several variables that might affect the separation, including rates of twisting, and angles, and of course, they used many cookies (no doubt, to get statistically significant numbers).

It turned out that all the cookies in the same **Oreo™** package separated in the same way; that is, the cream filling stuck to the wafer on the same side.

The students believe that this reflects the manufacturing process. That is, the cookies are made by applying hot cream filling mixture to one side of the cookie, before the other side is placed on it. The initially warm cream filling sticks to the first cookie well, by flowing into its uneven surface, but, with some subsequent cooling, not so well to the subsequently applied cookie side, so the cookie-to-cream bonds have different strengths.

This suggests more research such as varying the texture of the cookies, varying the temperature gradient in the bakery, etc.

With such an investigation completed, can solutions be far behind to other great problems such as the origin of life, the origin of the universe, and the structure of matter?

More Good Memories

Gordon Gore, Founder



Parent **Julia Wells (Aberdeen Elementary)** has a great sense of humour.



The 'moment of inertia' demonstration caused a 'moment of delight' for this young lady at the Bert Edwards site.



From the Archives: March 2003 Newsletter Number 13:"Teachers from School District 73 (and one from South Okanagan Secondary School) visited the **BIG Little Science Centre** Friday February 21 for an In-Service session with Operator Gordon Gore. Providing workshops for (and by) teachers could be a major purpose of a full-time, full-size science centre in Kamloops."
Rob Hunter Photo

Science World President Visits BIG Little Science Centre



Is this any way to treat an honoured guest?

August 8 2009: **Bryan Tisdall**, President and C.E.O. of **Science World**, came to visit on Friday August 8 2009. Several directors and volunteers were available to ‘talk shop’ and consider possible closer cooperation with British Columbia’s largest science centre. Bryan spent two hours visiting us, but after trying out the display in the photograph, decided to leave while he was still ‘a head’. Seriously, thanks to **Bryan Tisdall** for visiting our centre, and to **Jim Hebden, Adele Stapleton, Jackie Stewart, Vanessa Tonn, Ken Schroeder, Gord Stewart** and **Gordon Gore** for taking the time to meet with Bryan.

Bryan commented "*The BIG Little Science Centre should be a model for every school district in the province.*"

Saturdays at the BIG Little Science Centre

February 4: Magnetism Show

February 11: Air Pressure Show

February 18: Static Electricity Show

February 25: Forces and Motion Show

March 4: Light and Colour Show

March 11: Plate Tectonics Lab, including edible continental plates

March 18: Build a Car Day Use our materials to design a working toy car

The BUZZ about BEES



Gordon Gore Photo

According to **Kamloops This Week**, Kamloops City Council wants the city to join **Bee City Canada**, an organization that promotes habitat for bees and other pollinators. This would make Kamloops the first city in British Columbia to be a member of their organization. Perhaps if and when the BIG Little Science Centre has a permanent site, it might include a pollinator-friendly garden so that it might continue to be a true 'hive of activity'.

BIGScience

This Newsletter is a publication of **BIG Little Science Centre Society**

Mailing Address Box 882 Station Main Kamloops BC V2C 5M8

Location: 655 Holt Street Kamloops BC V2B 5G2 Website <http://blscs.org>

Executive Director: Gord Stewart Phone (250) 554 2572 or (250) 554 BLSC E-Mail: gord@blscs.org

Assistant Operator: Susan Hammond Phone (250) 554 2572 or (250) 554 BLSC E-Mail: susan@blscs.org

Newsletter Editor: Dr. Gordon R. Gore F-411, 3255 Overlander Drive, Kamloops BC V2B 0A5

Home phone 778 472 2014 EDITOR's E-Mail: gordongore0@gmail.com

Back issues of BIGScience can be viewed at <<http://web.blscs.org/newsletters>> .

The **BIG Little Science Centre** is open to the public at these times:

Tuesday to Saturday 10:00 AM to 4:00 PM

CLOSED SUNDAYS and HOLIDAYS

Phone: 250 554 2572 E-mail Gord@blscs.org or Susan@blscs.org

A family membership is \$60.00/year. An individual membership is \$45.00/year. A family membership consists of five directly related people. (This includes any combination of grandparents, parents and children). Individual day rates are:

**Adults (16 to 59) \$6 Seniors (60 plus) \$4 Youth (6 to 15 years old) \$3 Family \$15.
Children 5 years old or younger) Free**

Visit our website blscs.org for more details on the benefits of membership.

Drop-in Visit Information

What is a Drop-in Visit?

During drop-in times our hands-on rooms are open for visitors to tour at their leisure. The rooms have approximately 140 stations of hands-on activities to try. We also have an activity or show running Saturdays!

Drop-in Visiting hours

- Tuesday - Saturday 10:00 - 4:00
- Check Facebook or twitter for the latest information.

For safety purposes we require children under age 16 be accompanied by a minimum number of supervising adults:

- For children 4 years old and under, 1 adult per every 3 children is required.
- For children 5 years old to 9 years old, 1 adult per every 5 children is required.
- For children 10 years old to 16 years old, 1 adult per 10 children is required.

The BIG Little Science Centre is Closed Sundays and Holidays.