

# CANADIAN YOUTH SCIENCE MONITOR

*The Canada Foundation for Innovation and Ipsos Reid present  
the first nationwide study of young Canadians attitudes towards  
science*



**Ipsos Reid**

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## CANADIAN YOUTH SCIENCE MONITOR

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**Ottawa, Ontario** – The Canada Foundation for Innovation commissioned Ipsos Reid to conduct the Canadian Youth Science Monitor, the first nationwide survey on the views of Canadian youth (aged 12 to 18) towards the sciences. It was inspired by the 2009 Wellcome Trust Monitor, a study of youth in the United Kingdom. Both studies were designed to accomplish similar objectives: understanding how young people relate to the sciences, both in terms of how interested they are in the study of science and how interested they are in pursuing scientific careers.

### **Interest in Science**

During the survey Canadian youth were asked to rate their level of interest in science. Two in three Canadian youth (68%) say that they, personally, are either very (28%) or fairly interested (40%) in science (31% say they are either not very, 22%, or not at all interested, 9%, in science).

Interest in science is greater among younger respondents than among older respondents (78% of 12 to 13-year-olds are very or somewhat interested in science compared to 67% among 14 to 16-year-olds and 58% among 17 to 18-year-olds). This coincides with a general decline of interest in school as young people grow older. While 49% of young Canadians overall agree (rating as a 7 to 10 on a scale of zero to 10) that they like school, the proportion



of younger respondents who like school is greater than that of older respondents (58% among those 12 to 13 years of age compared to 45% among those 17 to 18 years).

### **Science as a Career**

While two in three young Canadians express an interest in science, just over half (52%) think studying science will be at least somewhat important to the career they eventually pursue, while two in five (39%) say studying science will not be important to their future career. Furthermore, when asked how interested they would be in working in a scientific field, about two in five Canadian youth (38%) say they would be very or fairly interested, while the majority (53%) says they would not be interested. Those who say they are not at all interested in working in a scientific field (21%) significantly outweigh those who say they are very interested in doing so (15%).

As with interest in science generally, interest in pursuing a scientific career also declines with age, from a high of 43% among 12 to 13-year-olds to 32% among those 17 to 18 years of age. This coincides with an increase in certainty with regard to their future career. Overall 47% of Canadian youth agree (rating as 7 to 10 on a scale of zero to 10) that they are "fairly certain of the career I want to pursue." Among 17 to 18-year-olds, the proportion who say they are certain of their future career grows to 56%, as compared to 39% among 12 to 13-year-olds.

The low interest in pursuing a scientific career is not surprising in light of the 2009 Scorecard issued by the Organization for Economic Co-operation and Development which shows that Canada ranks 24th out of 35 nations in the percentage of students graduating from university with a science or engineering degree.



Nevertheless, while they themselves may not be interested in a scientific career, the majority of Canadian youth (62%) do acknowledge that science would be a good field for young people to go into as a career.

### **Views on the Meaning of Science**

Putting aside their personal interest in science either as a school subject or a future career choice, nearly four in five (78%) consider it to be either very (24%) or fairly important (54%) to have an understanding of science. When asked whether or not several terms describe science, over two in three (68%) agree that the word “important” describes science, while three in five (59%) say “interesting” describes science. Majorities also say the terms “complicated” (59%) and “difficult” (52%) describe science, yet only one in five (22%) say the term “boring” describes science. Fewer than half say the terms “fun” (46%), “cool” (46%) or “inspiring” (39%) describe science.

When asked, using their own words, what they think science means, Canadian youth most often make reference to study, learning or knowledge (43%). One in five says that science has something to do with how things work (21%). Others associate science with the world around us (16%) or with biological life (14%). One in ten mention research or experimenting (11%), while just fewer than one in ten associate science as a way of explaining or understanding why (9%).

### **Exposure to Science Outside of School**

Among several extra-curricular activities related to science, young Canadians most often say they had visited a science museum or science centre in the past 12 months (46%). Over one in



three say they had visited a zoo (37%) or nature reserve (35%). Three in ten say they attended a science fair (29%), while about one in five say they visited a working laboratory (20%) or visited a planetarium (18%). Respondents least often say they participated in a science club (11%). Those who are interested in science are more likely than those who are not interested to say they have done each of the tested extra-curricular activities related to science at least once in the past 12 months.

When asked how often they use several science-related media, a majority of respondents say they regularly watch a television show related to science (61% say they do so either daily, at least once a week or at least once a month).

When asked how many hours they spend per week doing homework in several different subject areas, Canadian youth say they spend the most time doing homework for mathematics (2.0 hours per week), followed by homework for languages or literature courses (1.6 hours), science courses (1.4 hours), and homework for history, politics and geography courses (1.3 hours). Those who are interested in science spend more time doing science homework than those not interested in science (1.7 hours per week versus 0.9 hours among those not interested).

When Canadian youth were asked how important their parents say it is for them to do well in scientific courses generally, nine in ten (90%) say their parents consider their performance in science courses to be either very (47%) or somewhat important (43%).



## Ability in Science

Canadian youth perform well in the sciences relative to young people in other countries. The 2006 Programme for International Student Assessment (PISA) study found that among 15-year-olds in 57 participating countries, only two countries (Finland and Hong Kong) performed better than Canadian youth on scientific questions. Despite this, the research suggests that there are significant gaps in scientific literacy.

Young Canadians were asked to answer a series of nine, factual, multiple choice questions about the sciences, which were selected to include questions about the physical and natural sciences and to reflect a range of difficulty. Of the nine questions asked, just over one in ten (12%) were able to correctly answer six questions or more. About three in five (58%) were able to answer between three and five questions correctly. Three in ten respondents (30%) were able to correctly answer two questions or fewer. On average, across all questions, three in ten (30%) answered don't know. Don't know responses were much higher than average with respect to two questions, both dealing with physics. Three in five (61%) said they don't know when asked about the difference between radio waves and visible light. A similar proportion, 58%, said they don't know when asked which of several terms are related to the Theory of Relativity.

Though older respondents might be expected to perform better than younger ones, the overall results do not find a great deal of improvement by age. Seventeen to 18 year old respondents (14%) are only slightly more likely than 12 to 13-year-olds (10%) to have correctly answered six or more questions.



## Drivers of Interest in Science

Throughout the study we find that levels of interest in science are greater among those who positively view their teachers at school and among those whose parents are very involved in their lives.

Those who agree (rating as 7 to 10 on a scale of zero to 10) that their teachers take time to fully explain things (75%) are 28 percentage points more likely than those who disagree (47%) to express an interest in science. The sense that teachers praise hard work is also influential (72% of those who agree that their teachers praise their students' efforts express an interest in science compared to 55% among those who disagree, amounting to a difference of 17 percentage points).

The extent to which parents are involved in their children's lives also significantly influences interest in science. Those whose parents are very involved in a range of developmental activities (72%) are much more interested in science than those whose parents are least involved (51%). The study measured parental involvement using a range of indicators measuring the frequency with which young Canadians say they parents engage on a number of activities (such as checking their homework). "Very involved" parents are those said to "often" take part in seven or more of the tested activities, while "least involved" parents are those said to "often" take part in none of the tested activities.



*These are the findings of an Ipsos Reid/Canada Foundation for Innovation poll conducted from January 13 to February 1, 2010. For the survey, a sample of 2,605 Canadian youth between the ages of 12 and 18 years old were randomly selected from Ipsos' Canadian online panel to complete an online survey. Weighting was then employed to balance demographics and ensure that the sample's composition reflects that of the population of Canadian youth according to Census data and to provide results intended to approximate the sample universe. A survey with an unweighted probability sample of this size and a 100% response rate would have an estimated margin of error of +/-1.9 percentage points, 19 times out of 20, of what the results would have been had the entire population of adults in Canada been polled. All sample surveys and polls may be subject to other sources of error, including, but not limited to coverage error, and measurement error.*

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