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# Federal Scientific Activities

2009/2010



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## Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

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## Highlights

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Federal departments and agencies forecast spending of \$10.7 billion in 2009/2010 on science and technology (S&T), a small increase from the \$10.4 billion in planned spending the year before and an increase, in current dollars, from the \$10.2 billion spent in 2007/2008, where actual, or final, data are available. (Table 1-1)

Of the \$10.7 billion, \$5.4 billion was forecast to be spent within the departments and agencies (Table 2-1) and \$5.2 billion directed to other sectors such as higher education, the business sector, private non-profit organizations, foreign and other entities, to support their S&T activities. (Table 3-1)

The majority, \$6.9 billion or 65%, of federal S&T spending was forecast to be directed to research and development (R&D) activities, while related scientific activities (RSA) accounts for the remainder, \$3.7 billion. (Table 1-5)

S&T expenditures are available for two science types, "natural sciences and engineering" and "social sciences and humanities". About three-quarters of all federal government S&T spending has been directed to natural sciences and one quarter to social sciences throughout the five-year period from 2005/2006 to 2009/2010. (Table 1-6)

In 2009/2010, the \$5.4 billion in S&T activities to be performed by federal government departments and agencies was forecast to be split evenly between R&D and RSA; \$2.7 billion, or 50%, was directed to R&D and the other half to RSA. (Table 2-1)

In 2009/2010, federal departments and agencies reported a total of 37,044 full-time equivalent employees engaged in S&T activities. Of these employees, 17,634 were classified as "scientific and professional", 8,824 as "technical" and 10,586 as "other" engaged in support activities. (Table 4-5)

Protection and improvement of human health was the most important objective receiving the highest level of federal government S&T resources at \$2.1 billion in 2007/2008, the most recent year for which actual data are available. (Table 6-1)



## Analysis

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Federal departments and agencies forecast spending of \$10.7 billion in 2009/2010 on science and technology (S&T), a small increase from the \$10.4 billion in planned spending the year before and an increase, in current dollars, from the \$10.2 billion spent in 2007/2008, where actual, or final, data are available. (Table 1-1)

Data for 2009/2010 are forecasts of expenditure by departments and thus are provisional and subject to change. Data for 2008/2009 are planned spending for the fiscal period that was almost closed at the time of data collection; these data are provisional, but change only rarely. Data for 2007/2008 are actual expenditures incurred by the reporting departments and agencies, and, as such, are not subject to change.

Of the \$10.7 billion, \$5.4 billion was forecast to be spent within the departments and agencies (Table 2-1) and \$5.2 billion directed to other sectors such as higher education, the business sector, private non-profit organizations, foreign and other entities, to support their S&T activities. (Table 3-1)

Measured in constant dollars to account for inflation, actual federal government S&T spending increased by 39% over the ten-year period from 1998/1999 to 2007/2008. (Table 1-1)

Federal S&T expenditures are composed of two elements: research and development (R&D) and related scientific activities (RSA). Research and development is defined as “creative work, undertaken in a systematic manner ... to increase the stock of knowledge”.<sup>1</sup> Related scientific activities include activities such as scientific data collection, information services, special services and studies and education support, as well as administration of extramural RSA activities, all of which support R&D activities.

The majority, \$6.9 billion or 65%, of federal S&T spending was forecast to be directed to R&D activities, while RSA accounts for the remainder, \$3.7 billion. (Table 1-5)

S&T expenditures are available for two science types, “natural sciences and engineering” and “social sciences and humanities”. About three-quarters of all federal government S&T spending has been directed to natural sciences and one quarter to social sciences throughout the five-year period from 2005/2006 to 2009/2010. (Table 1-6)

### **Intramural performance of S&T**

In 2009/2010, the \$5.4 billion in S&T activities to be performed by federal government departments and agencies was forecast to be split evenly between R&D and RSA; \$2.7 billion, or 50%, was directed to R&D and the other half to RSA. (Table 2-1)

### **Extramural funding of S&T**

The federal government funds S&T activities through grants, contributions and contracts. Grants or contributions are not intended to secure a particular deliverable, but rather to promote the undertaking of the activity being supported. Contracts, by contrast, are connected to a particular deliverable sought by a department. The distribution of this funding through these channels has been stable from year to year.

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1. Frascati Manual (6<sup>th</sup> ed.), Organization for Economic Cooperation and Development, Paris: 2002.

In 2009/2010, the federal government was forecast to direct \$5.2 billion to other sectors to perform S&T activities. The vast majority (over 80%) of extramural dollars was forecast to be directed to R&D activities. (Table 3-1)

\$3.3 billion in extramural payments were forecast to be directed to the higher education sector, the sector receiving the most federal funds. Ninety percent of these funds were for R&D activities and the remaining ten percent for RSA. Over 90% of the funds for R&D activities came from four funding institutions: Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, Canadian Institutes of Health Research and Canada Foundation for Innovation. (Table 3-3)

The second most significant recipient of federal government S&T funding is the business sector, forecast to receive \$987 million in 2009/2010. (Table 4-5)

The business sector was forecast to receive funds as follows: 31% through R&D contracts, 50% through grants and contributions for R&D and the remaining 19% for RSA activities. (Table 3-4)

## **Personnel**

In 2009/2010, federal departments and agencies reported a total of 37,044 full-time equivalent employees engaged in S&T activities. Of these employees, 17,634 were classified as “scientific and professional”, 8,824 as “technical” and 10,586 as “other” engaged in support activities. (Table 4-5)

Almost seven out of 10 of all federal S&T personnel were engaged in S&T related to natural sciences and engineering while the remainder were engaged in social sciences and humanities S&T. (Table 4-1)

## **Objectives of S&T and R&D activities**

Protection and improvement of human health was the most important objective receiving the highest level of federal government S&T resources at \$2.1 billion in 2007/2008, the most recent year for which data are available. (Table 6-1).

In terms of R&D funding, the three most significant objectives for federal funds were: protection and improvement of human health (\$1.6 billion), industrial production and technology (\$1.1 billion) and non-oriented research (\$848 million). (Table 6-2)

Overall, 37% of all R&D was performed intramurally, but certain objectives were more likely to be researched within government departments than others. Energy-related R&D, along with R&D related to agriculture were at least 70% undertaken in-house, while health-related and industrial production-related R&D were the most likely to be funded by the federal government but performed by other sectors.

## Related products

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### Selected publications from Statistics Canada

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88-001-X	Science Statistics
88-202-X	Industrial Research and Development: Intentions
88F0017M	Science, Innovation and Electronic Information Division Research Papers

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### Selected technical and analytical products from Statistics Canada

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88F0017M1999006	Diffusion of Biotechnologies in Canada: Results from the Survey of Biotechnology Use in Canadian Industries
88F0017M2000008	Explaining Rapid Growth in Canadian Biotechnology Firms
88F0017M2001010	Analysis of the Survey on Innovation, Advanced Technologies and Practices in the Construction and Related Industries, 1999
88F0017M2001011	Capacity to Innovate, Innovation and Impact: The Canadian Engineering Services Industry
88F0017M2001012	Patterns of Advanced Manufacturing Technology (AMT) Use in Canadian Manufacturing: 1998 AMT Survey Results

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### Selected CANSIM tables from Statistics Canada

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358-0001	Gross domestic expenditures on research and development, by science type and by funder and performer sector, annual
358-0026	Intellectual property management, by federal departments and agencies indicators, annual

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### Selected surveys from Statistics Canada

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4212	Federal Science Expenditures and Personnel, Activities in the Social Sciences and Natural Sciences
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## **Selected summary tables from Statistics Canada**

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- *Domestic spending on research and development (GERD), funding sector, by province*
- *Domestic spending on research and development (GERD), performing sector, by province*
- *Domestic spending on research and development (GERD)*

# Statistical tables

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**Table 1-1**  
**Federal expenditures — On science and technology, research and development and related scientific activities**

	Current dollars				Gross Domestic Product implicit price index <sup>2</sup>	Constant 2002 dollars			
	Science and technology					Science and technology			
	Main Estimates <sup>1</sup>	Total science and technology	Research and Development	Related scientific activities		Main Estimates <sup>1</sup>	Total science and technology	Research and Development	Related scientific activities
	millions of dollars					millions of dollars			
1997/1998	149,555	5,509	3,379	2,130	92.8	161,158	5,937	3,641	2,296
1998/1999	145,457	5,802	3,578	2,224	92.3	157,592	6,286	3,876	2,410
1999/2000	151,559	6,252	3,890	2,362	93.9	161,405	6,658	4,142	2,516
2000/2001	156,157	6,707	4,150	2,556	97.8	159,670	6,857	4,244	2,614
2001/2002	165,234	8,169	4,989	3,180	98.9	167,072	8,260	5,044	3,216
2002/2003	170,367	8,014	4,927	3,087	100	170,367	8,014	4,927	3,087
2003/2004	175,937	8,765	5,462	3,303	103.3	170,317	8,485	5,288	3,197
2004/2005	183,290	8,934	5,454	3,480	106.6	171,942	8,381	5,116	3,265
2005/2006	194,863	9,449	6,042	3,407	110.2	176,827	8,574	5,483	3,092
2006/2007	207,986	9,633	6,073	3,560	112.9	184,221	8,532	5,379	3,153
2007/2008 <sup>r</sup>	230,772	10,176	6,603	3,573	116.4	198,258	8,742	5,672	3,070
2008/2009 <sup>p</sup>	241,308	10,358	6,631	3,727	121.1	199,263	8,553	5,476	3,078
2009/2010 <sup>p</sup>	248,388	10,664	6,949	3,714	118.8	209,081	8,976	5,849	3,126

1. Part 1, Government Expenditure Plan, Estimates.

2. CANSIM, Table 380-0056.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 1-2**  
**Federal expenditures — On science and technology, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>9,449</b>	<b>9,633</b>	<b>10,176</b>	<b>10,358</b>	<b>10,664</b>
Agriculture and Agri-Food Canada	354	408 <sup>1,2</sup>	366 <sup>2</sup>	360	367
Atomic Energy of Canada Limited	182	289	329	393	387
Canada Foundation for Innovation	437	367	310	372	580 <sup>3</sup>
Canadian Institutes of Health Research	808	853 <sup>4</sup>	988	960	966
Canadian International Development Agency	346	344	354	416	368
Canadian Space Agency	281	305	283	314	355
Environment Canada	696	588	660	711	672
Fisheries and Oceans Canada	291	317	292	290	286
Health Canada	291	330	493	503	536
Industry Canada	579	444	549 <sup>5</sup>	429	445
National Defence	434	450	412	435	534
National Research Council Canada	824	769	840	774	780
Natural Resources Canada	541	580	584	544	548
Natural Sciences and Engineering Research Council of Canada	864	900	1,018	1,036	1,056
Social Sciences and Humanities Research Council of Canada	574 <sup>6</sup>	628 <sup>7</sup>	684 <sup>8,9</sup>	684 <sup>10</sup>	689 <sup>11</sup>
Statistics Canada	703	798	639	693	641
<b>Total of major departments and agencies</b>	<b>8,206</b>	<b>8,373</b>	<b>8,801</b>	<b>8,913</b>	<b>9,210</b>
Other	1,243	1,260	1,374	1,445	1,454

1. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.

2. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.

3. Includes funds for the Research Hospital Fund (RHF) Project.

4. Includes funding for a research chair by the Canadian Institute for Health Research.

5. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.

6. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

7. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

8. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

9. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.

10. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

11. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 1-3**  
**Federal expenditures — On research and development, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>6,042</b>	<b>6,073</b>	<b>6,603</b>	<b>6,631</b>	<b>6,949</b>
Agriculture and Agri-Food Canada	327	359 <sup>1,2</sup>	307 <sup>2</sup>	315	316
Atomic Energy of Canada Limited	182	289	329	393	387
Canada Foundation for Innovation	437	367	310	372	580 <sup>3</sup>
Canadian Institutes of Health Research	795	838 <sup>4</sup>	970	943	948
Canadian Space Agency	267	290	276	305	345
Environment Canada	253	214	240	258	244
Health Canada	49	49	161	167	176
Industry Canada	478	372	477 <sup>5</sup>	354	365
National Defence	349	343	307	334	435
National Research Council Canada	756	700	772	707	716
Natural Resources Canada	281	259	276	257	259
Natural Sciences and Engineering Research Council of Canada	755	788	891	892	899
Social Sciences and Humanities Research Council of Canada	478 <sup>6</sup>	523 <sup>7</sup>	540 <sup>8</sup>	564 <sup>9</sup>	561 <sup>10</sup>
<b>Total of major departments and agencies</b>	<b>5,406</b>	<b>5,391</b>	<b>5,857</b>	<b>5,860</b>	<b>6,231</b>
Other	636	682	745	771	718

1. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.
  2. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.
  3. Includes funds for the Research Hospital Fund (RHF) Project.
  4. Includes funding for a research chair by the Canadian Institute for Health Research.
  5. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.
  6. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  7. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  8. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
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- Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 1-4**  
**Federal expenditures — On related scientific activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>3,407</b>	<b>3,560</b>	<b>3,573</b>	<b>3,727</b>	<b>3,714</b>
Canadian International Development Agency	288	273	303	357	315
Canadian Museum of Civilization	73	72	72	77	69
Environment Canada	443	374	420	452	427
Fisheries and Oceans Canada	214	232	217	216	213
Health Canada	242	281	332	336	360
Industry Canada	101	72	72	75	80
Library and Archives Canada	100	94	97	116	117
National Defence	85	107	105	100	99
Natural Resources Canada	261	321	308	287	289
Natural Sciences and Engineering Research Council of Canada	110	112	126	144	157
Parks Canada	79	89	92	92	92
Social Sciences and Humanities Research Council of Canada	97	105	144 <sup>1</sup>	120	128
Statistics Canada	684	748	582	635	584
<b>Total of major departments and agencies</b>	<b>2,775</b>	<b>2,880</b>	<b>2,870</b>	<b>3,006</b>	<b>2,930</b>
Other	632	680	703	720	784

1. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.
- Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 1-5**  
**Federal expenditures — On science and technology and its components, by activity**

	2005/2006	2006/2007	2007/2008 <sup>f</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Science and technology</b>	<b>9,449</b>	<b>9,633</b>	<b>10,176</b>	<b>10,358</b>	<b>10,664</b>
<b>Research and development</b>	<b>6,042</b>	<b>6,073</b>	<b>6,603</b>	<b>6,631</b>	<b>6,949</b>
Current expenditures	5,611 <sup>1</sup>	5,642 <sup>2,3,4,5</sup>	6,170 <sup>3,6,7</sup>	6,088 <sup>8</sup>	6,372 <sup>9,10</sup>
Administration of extramural programs	285	279	294	308	316
Capital expenditures	146	152	139	235	261
<b>Related scientific activities</b>	<b>3,407</b>	<b>3,560</b>	<b>3,573</b>	<b>3,727</b>	<b>3,714</b>
Data collection	1,715	1,870	1,759	1,842	1,785
Information services	676	669	639	650	665
Special services and studies	627	576	743 <sup>11</sup>	780	777
Education support	259	298	286	289	318
Administration of extramural programs	59	64	70	74	72
Capital expenditures	70	83	77	91	98

1. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  2. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.
  3. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.
  4. Includes funding for a research chair by the Canadian Institute for Health Research.
  5. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  6. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.
  7. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  8. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  9. Includes funds for the Research Hospital Fund (RHF) Project.
  10. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  11. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.
- Note(s):** Due to rounding, components may not add to the totals.



**Table 1-6**  
**Federal expenditures — On science and technology, by science and by performing sector**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total sciences</b>	<b>9,449</b>	<b>9,633</b>	<b>10,176</b>	<b>10,358</b>	<b>10,664</b>
Intramural	5,024	5,244	5,196	5,385	5,437
Canadian business enterprises	1,044	902	936	913	987
Higher education institutions	2,698 <sup>1</sup>	2,660 <sup>2</sup>	2,990 <sup>3,4</sup>	3,030 <sup>5</sup>	3,275 <sup>6,7</sup>
Canadian non-profit institutions	307	305	548 <sup>8</sup>	447	412
Provincial and municipal governments	19	90 <sup>9,10</sup>	28 <sup>10</sup>	42	47
Foreign organizations	306	301	445	505	465
Other Canadian performers	51	131 <sup>11</sup>	34	36	41
<b>Natural sciences</b>	<b>7,171</b>	<b>7,166</b>	<b>7,594</b>	<b>7,647</b>	<b>7,952</b>
Intramural	3,618	3,729	3,790	3,885	3,970
Canadian business enterprises	1,010	850	898	872	943
Higher education institutions	2,097	1,991	2,301 <sup>3</sup>	2,312	2,529 <sup>6</sup>
Canadian non-profit institutions	248	243 <sup>9,10</sup>	326 <sup>10</sup>	268	218
Provincial and municipal governments	17	82	17	18	20
Foreign organizations	147	155	241	268	245
Other Canadian performers	34	115 <sup>11</sup>	22	24	27
<b>Social sciences</b>	<b>2,278</b>	<b>2,467</b>	<b>2,582</b>	<b>2,710</b>	<b>2,711</b>
Intramural	1,406	1,515	1,406	1,500	1,467
Canadian business enterprises	34	52	38	41	45
Higher education institutions	601 <sup>1</sup>	668 <sup>2</sup>	689 <sup>4</sup>	718 <sup>5</sup>	746 <sup>7</sup>
Canadian non-profit institutions	59	61	221 <sup>8</sup>	179	194
Provincial and municipal governments	2	8	11	24	27
Foreign organizations	159	146	204	237	220
Other Canadian performers	18	16	12	11	14

1. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  2. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  3. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.
  4. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  5. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  6. Includes funds for the Research Hospital Fund (RHF) Project.
  7. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
  8. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.
  9. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.
  10. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.
  11. Includes funding for a research chair by the Canadian Institute for Health Research.
- Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 1-7**  
**Federal expenditures — On research and development, by science and by performing sector**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total sciences</b>	<b>6,042</b>	<b>6,073</b>	<b>6,603</b>	<b>6,631</b>	<b>6,949</b>
Intramural	2,414	2,496	2,532	2,605	2,692
Canadian business enterprises	791	642	758	733	805
Higher education	2,442 <sup>1</sup>	2,379 <sup>2</sup>	2,709 <sup>3,4</sup>	2,735 <sup>5</sup>	2,946 <sup>6,7</sup>
Canadian non-profit institutions	206	224	376	309	258
Provincial and municipal government	10	47 <sup>8,9</sup>	15 <sup>9</sup>	15	18
Foreign	146	167	192	211	204
Other Canadian performers	33	118 <sup>10</sup>	20	23	26
<b>Natural sciences</b>	<b>5,370</b>	<b>5,329</b>	<b>5,686</b>	<b>5,670</b>	<b>5,943</b>
Intramural	2,289	2,340	2,360	2,422	2,499
Canadian business enterprises	788	638	752	729	800
Higher education	1,974	1,864	2,152 <sup>3</sup>	2,153	2,346 <sup>6</sup>
Canadian non-profit institutions	186	212	270	208	145
Provincial and municipal government	9	45 <sup>8,9</sup>	11 <sup>9</sup>	8	8
Foreign	100	118	127	135	128
Other Canadian performers	23	112 <sup>10</sup>	13	15	17
<b>Social sciences</b>	<b>672</b>	<b>744</b>	<b>916</b>	<b>961</b>	<b>1,006</b>
Intramural	124	156	172	183	193
Canadian business enterprises	3	3	6	4	6
Higher education	468 <sup>1</sup>	514 <sup>2</sup>	557 <sup>4</sup>	583 <sup>5</sup>	600 <sup>7</sup>
Canadian non-profit institutions	20	13	105	101	114
Provincial and municipal government	1	1	4	7	10
Foreign	46	49	65	76	76
Other Canadian performers	10	7	7	7	9

1. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

2. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

3. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.

4. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

5. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

6. Includes funds for the Research Hospital Fund (RHF) Project.

7. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

8. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.

9. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.

10. Includes funding for a research chair by the Canadian Institute for Health Research.

**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 1-8**  
**Federal expenditures — On related scientific activities, by science and by performing sector**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total sciences</b>	<b>3,407</b>	<b>3,560</b>	<b>3,573</b>	<b>3,727</b>	<b>3,714</b>
Intramural	2,610	2,748	2,664	2,780	2,745
Canadian business enterprises	253	261	177	180	182
Higher education	256	281	281	294	329
Canadian non-profit institutions	101	81	172 <sup>1</sup>	138	154
Provincial and municipal government	9	43	13	27	29
Foreign	160	134	253	294	261
Other Canadian performers	19	12	13	13	15
<b>Natural sciences</b>	<b>1,801</b>	<b>1,837</b>	<b>1,908</b>	<b>1,978</b>	<b>2,009</b>
Intramural	1,328	1,389	1,430	1,464	1,471
Canadian business enterprises	221	212	146	143	143
Higher education	123	127	148	159	183
Canadian non-profit institutions	62	32	56	60	74
Provincial and municipal government	8	36	5	10	11
Foreign	47	37	114	133	117
Other Canadian performers	10	3	9	9	10
<b>Social sciences</b>	<b>1,606</b>	<b>1,723</b>	<b>1,665</b>	<b>1,749</b>	<b>1,705</b>
Intramural	1,282	1,358	1,234	1,317	1,274
Canadian business enterprises	31	49	31	37	39
Higher education	133	154	133	135	146
Canadian non-profit institutions	39	49	116 <sup>1</sup>	78	80
Provincial and municipal government	1	7	8	17	17
Foreign	113	97	138	161	144
Other Canadian performers	8	9	5	4	5

1. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.  
**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 1-9**  
**Federal expenditures — On science and technology and its components, by activity and performing sector<sup>1</sup>, 2007/2008<sup>r</sup>**

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other Canadian performers	Total
	millions of dollars							
<b>Total science and technology</b>	<b>5,196</b>	<b>936</b>	<b>2,990</b>	<b>548</b>	<b>28</b>	<b>445</b>	<b>34</b>	<b>10,176</b>
<b>Total research and development</b>	<b>2,532</b>	<b>758</b>	<b>2,709</b>	<b>376</b>	<b>15</b>	<b>192</b>	<b>20</b>	<b>6,603</b>
In-house research and development	1,855	...	...	...	...	...	...	1,855
Research and development contracts	29	229	31	7	2	17	5	319
Supporting contracts	203	...	...	...	...	...	...	203
Research and development grants and contributions	...	526	2,622 <sup>1,2</sup>	368 <sup>3</sup>	13	156	8	3,693
Research fellowships	13	4	57	1	...	18	7	100
Administration of extramural programs	294	...	...	...	...	...	...	294
Capital expenditures	139	...	...	...	...	...	...	139
<b>Total related scientific activities</b>	<b>2,664</b>	<b>177</b>	<b>281</b>	<b>172</b>	<b>13</b>	<b>253</b>	<b>13</b>	<b>3,573</b>
Data collection	1,606	82	12	31	5	18	5	1,759
Information services	587	18	16	14	3	1	1	639
Special services and studies	315	72	14	116 <sup>4</sup>	1	220	4	743
Education support	10	5	238	12	3	14	4	286
Administration of extramural programs	70	...	...	...	...	...	...	70
Capital expenditures	77	...	...	...	...	...	...	77

1. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.  
2. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.  
3. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.  
4. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.  
**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 1-10**  
**Federal expenditures — On science and technology and its components, by activity and performing sector, 2008/2009<sup>p</sup>**

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other Canadian performers	Total
millions of dollars								
<b>Total science and technology</b>	<b>5,385</b>	<b>913</b>	<b>3,030</b>	<b>447</b>	<b>42</b>	<b>505</b>	<b>36</b>	<b>10,358</b>
<b>Total research and development</b>	<b>2,605</b>	<b>733</b>	<b>2,735</b>	<b>309</b>	<b>15</b>	<b>211</b>	<b>23</b>	<b>6,631</b>
In-house research and development	1,837	...	...	...	...	...	...	1,837
Research and development contracts	30	259	30	9	3	17	4	352
Supporting contracts	187	...	...	...	...	...	...	187
Research and development grants and contributions	...	470	2,650 <sup>1</sup>	299	12	175	11	3,618
Research fellowships	9	4	55	1	...	18	7	94
Administration of extramural programs	308	...	...	...	...	...	...	308
Capital expenditures	235	...	...	...	...	...	...	235
<b>Total related scientific activities</b>	<b>2,780</b>	<b>180</b>	<b>294</b>	<b>138</b>	<b>27</b>	<b>294</b>	<b>13</b>	<b>3,727</b>
Data collection	1,686	84	13	30	6	19	5	1,842
Information services	596	21	17	12	2	1	1	650
Special services and studies	332	69	14	83	18	260	4	780
Education support	1	5	251	13	0 <sup>s</sup>	15	4	289
Administration of extramural programs	74	...	...	...	...	...	...	74
Capital expenditures	91	...	...	...	...	...	...	91

1. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 1-11**  
**Federal expenditures — On science and technology and its components, by activity and performing sector, 2009/2010<sup>p</sup>**

	Intramural	Business enterprise	Higher education	Canadian non-profit institutions	Provincial and municipal governments	Foreign performers	Other Canadian performers	Total
millions of dollars								
<b>Total science and technology</b>	<b>5,437</b>	<b>987</b>	<b>3,275</b>	<b>412</b>	<b>47</b>	<b>465</b>	<b>41</b>	<b>10,664</b>
<b>Total research and development</b>	<b>2,692</b>	<b>805</b>	<b>2,946</b>	<b>258</b>	<b>18</b>	<b>204</b>	<b>26</b>	<b>6,949</b>
In-house research and development	1,883	...	...	...	...	...	...	1,883
Research and development contracts	31	305	35	16	3	14	4	409
Supporting contracts	192	...	...	...	...	...	...	192
Research and development grants and contributions	...	495	2,855 <sup>1</sup>	241	15	172	14	3,791
Research fellowships	9	5	56	1	...	19	7	98
Administration of extramural programs	316	...	...	...	...	...	...	316
Capital expenditures	261	...	...	...	...	...	...	261
<b>Total related scientific activities</b>	<b>2,745</b>	<b>182</b>	<b>329</b>	<b>154</b>	<b>29</b>	<b>261</b>	<b>15</b>	<b>3,714</b>
Data collection	1,630	85	14	28	6	17	5	1,785
Information services	612	20	15	12	3	1	1	665
Special services and studies	331	71	27 <sup>2</sup>	90	20	232	6	777
Education support	2	6	273	23	0 <sup>s</sup>	11	4	318
Administration of extramural programs	72	...	...	...	...	...	...	72
Capital expenditures	98	...	...	...	...	...	...	98

1. Includes funds for the Research Hospital Fund (RHF) Project.

2. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.

**Table 2-1**  
**Federal intramural expenditures — On science and technology and its components, by activity**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Science and technology</b>	<b>5,024</b>	<b>5,244</b>	<b>5,196</b>	<b>5,385</b>	<b>5,437</b>
<b>Research and development</b>	<b>2,414</b>	<b>2,496</b>	<b>2,532</b>	<b>2,605</b>	<b>2,692</b>
Current expenditures	1,983	2,065	2,099	2,061	2,115
Administration of extramural programs	285	279	294	308	316
Capital expenditures	146	152	139	235	261
<b>Related scientific activities</b>	<b>2,610</b>	<b>2,748</b>	<b>2,664</b>	<b>2,780</b>	<b>2,745</b>
Data collection	1,588	1,730	1,606	1,686	1,630
Information services	588	579	587	596	612
Special services and studies	304	281	315	332	331
Education support	1	10	10	1	2
Administration of extramural programs	59	64	70	74	72
Capital expenditures	70	83	77	91	98

**Note(s):** Due to rounding, components may not add to the totals.

**Table 2-2**  
**Federal intramural expenditures — On science and technology, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>5,024</b>	<b>5,244</b>	<b>5,196</b>	<b>5,385</b>	<b>5,437</b>
Agriculture and Agri-Food Canada	325	352	351	356	364
Atomic Energy of Canada Limited	172	288	329	393	386
Environment Canada	610	517	577	622	588
Fisheries and Oceans Canada	275	307	269	269	266
Health Canada	263	289	354	367	390
Industry Canada	115	117	118	122	125
National Defence	277	311	248	265	370
National Research Council Canada	696	643	691	630	636
Natural Resources Canada	457	475	464	433	436
Statistics Canada	702	777	631	684	633
<b>Total of major departments and agencies</b>	<b>3,893</b>	<b>4,076</b>	<b>4,031</b>	<b>4,141</b>	<b>4,193</b>
Other	1,131	1,168	1,165	1,244	1,244

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 2-3**  
**Federal intramural expenditures — On research and development, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>2,414</b>	<b>2,496</b>	<b>2,532</b>	<b>2,605</b>	<b>2,692</b>
Agriculture and Agri-Food Canada	302	307	297	312	314
Atomic Energy of Canada Limited	172	288	329	393	386
Canadian Institutes of Health Research	53	55	60	59	59
Canadian Space Agency	133	137	95	107	98
Environment Canada	220	186	208	224	212
Fisheries and Oceans Canada	77	85	74	73	72
Health Canada	45	44	72	74	75
National Defence	257	271	216	233	338
National Research Council Canada	629	574	623	563	571
Natural Resources Canada	218	205	192	179	181
Statistics Canada	19	51	57	58	57
<b>Total of major departments and agencies</b>	<b>2,124</b>	<b>2,203</b>	<b>2,224</b>	<b>2,274</b>	<b>2,364</b>
Other	290	293	308	330	328

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 2-4**  
**Federal intramural expenditures — On related scientific activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total</b>	<b>2,610</b>	<b>2,748</b>	<b>2,664</b>	<b>2,780</b>	<b>2,745</b>
Agriculture and Agri-Food Canada	23	46	53	44	50
Canadian Museum of Civilization	73	72	72	77	69
Environment Canada	391	331	369	398	376
Fisheries and Oceans Canada	198	222	195	196	194
Health Canada	218	244	282	293	315
Industry Canada	68	68	70	73	78
Library and Archives Canada	97	92	94	113	115
National Research Council Canada	68	69	68	67	64
Natural Resources Canada	238	270	271	253	255
Parks Canada	77	88	92	92	92
Statistics Canada	683	726	574	627	576
Treasury Board of Canada Secretariat	41	49	56	59	56
<b>Total of major departments and agencies</b>	<b>2,174</b>	<b>2,278</b>	<b>2,197</b>	<b>2,291</b>	<b>2,239</b>
Other	436	469	467	489	506

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

**Table 2-5**  
**Federal intramural expenditures — On science and technology for the National Capital Region**

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008 <sup>p</sup>
	millions of dollars				
<b>National Capital Region (total)</b>					
<b>Science and technology (total)</b>	<b>2,642</b>	<b>2,709</b>	<b>2,912</b>	<b>2,989</b>	<b>2,922</b>
Social sciences and humanities	1,185	1,222	1,283	1,340	1,257
Natural sciences and engineering	1,457	1,486	1,628	1,649	1,664
<b>Research and development</b>	<b>999</b>	<b>961</b>	<b>1,123</b>	<b>1,105</b>	<b>1,134</b>
Social sciences and humanities	117	116	121	153	166
Natural sciences and engineering	882	845	1,002	953	968
<b>Related scientific activities</b>	<b>1,643</b>	<b>1,748</b>	<b>1,788</b>	<b>1,884</b>	<b>1,788</b>
Social sciences and humanities	1,068	1,106	1,162	1,188	1,091
Natural sciences and engineering	575	642	626	696	697
<b>National Capital Region (Ontario)</b>					
<b>Science and technology (total)</b>	<b>2,361</b>	<b>2,398</b>	<b>2,546</b>	<b>2,585</b>	<b>2,534</b>
Social sciences and humanities	1,044	1,060	1,129	1,186	1,083
Natural sciences and engineering	1,316	1,338	1,416	1,399	1,451
<b>Research and development</b>	<b>950</b>	<b>913</b>	<b>1,040</b>	<b>1,013</b>	<b>1,034</b>
Social sciences and humanities	108	107	110	143	157
Natural sciences and engineering	842	806	930	870	878
<b>Related scientific activities</b>	<b>1,411</b>	<b>1,485</b>	<b>1,506</b>	<b>1,572</b>	<b>1,499</b>
Social sciences and humanities	937	953	1,019	1,043	926
Natural sciences and engineering	474	532	486	529	573
<b>National Capital Region (Quebec)</b>					
<b>Science and technology (total)</b>	<b>281</b>	<b>310</b>	<b>366</b>	<b>405</b>	<b>388</b>
Social sciences and humanities	141	162	154	154	175
Natural sciences and engineering	140	148	212	250	213
<b>Research and development</b>	<b>49</b>	<b>48</b>	<b>83</b>	<b>92</b>	<b>100</b>
Social sciences and humanities	9	9	11	9	10
Natural sciences and engineering	39	38	72	83	90
<b>Related scientific activities</b>	<b>232</b>	<b>263</b>	<b>282</b>	<b>312</b>	<b>288</b>
Social sciences and humanities	131	153	143	145	165
Natural sciences and engineering	101	110	140	167	123

**Note(s):** Due to rounding, components may not add to the totals.

**Table 3-1**  
**Federal extramural expenditures — On science and technology and its components, by performing sector**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology</b>	<b>4,425</b>	<b>4,389</b>	<b>4,980</b>	<b>4,973</b>	<b>5,227</b>
Business enterprises	1044	902	936	913	987
Higher education	2,698 <sup>2</sup>	2,660 <sup>3</sup>	2,990 <sup>4,5</sup>	3,030 <sup>6</sup>	3,275 <sup>7,8</sup>
Canadian non-profit institutions	307	305	548 <sup>9</sup>	447	412
Provincial and municipal governments	19	90 <sup>10,11</sup>	28 <sup>11</sup>	42	47
Foreign performers	306	301	445	505	465
Other performers	51	131 <sup>12</sup>	34	36	41
<b>Total research and development</b>	<b>3,628</b>	<b>3,577</b>	<b>4,071</b>	<b>4,026</b>	<b>4,257</b>
Business enterprises	791	642	758	733	805
Higher education	2,442 <sup>2</sup>	2,379 <sup>3</sup>	2,709 <sup>4,5</sup>	2,735 <sup>6</sup>	2,946 <sup>7,8</sup>
Canadian non-profit institutions	206	224	376	309	258
Provincial and municipal governments	10	47 <sup>10,11</sup>	15 <sup>11</sup>	15	18
Foreign performers	146	167	192	211	204
Other performers	33	118 <sup>12</sup>	20	23	26
<b>Total related scientific activities</b>	<b>797</b>	<b>812</b>	<b>909</b>	<b>946</b>	<b>969</b>
Business enterprises	253	261	177	180	182
Higher education	256	281	281	294	329
Canadian non-profit institutions	101	81	172 <sup>9</sup>	138	154
Provincial and municipal governments	9	43	13	27	29
Foreign performers	160	134	253	294	261
Other performers	19	12	13	13	15

1. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
2. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
3. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.
4. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
5. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
6. Includes funds for the Research Hospital Fund (RHF) Project.
7. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.
8. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.
9. Includes \$30 million for the Agriculture Development Fund project funded by Agriculture and Agri-Food Canada.
10. Includes funding of the new Business Risk Management Suite which replaces the Agriculture Income Stabilization Program by Agriculture and Agri-Food Canada.
11. Includes funding for a research chair by the Canadian Institute for Health Research.

**Note(s):** As reported by the funder, the federal government, not by the performers. Due to rounding, components may not add to the totals.



**Table 3-2**  
**Federal extramural expenditures — On science and technology and its components in the business enterprise sector, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology</b>	<b>1,044</b>	<b>902</b>	<b>936</b>	<b>913</b>	<b>987</b>
Atlantic Canada Opportunities Agency	25	50	45	56	56
Canadian International Development Agency	126	119	24	28	25
Canadian Space Agency	89	100	128	144	188
Environment Canada	50	43	48	52	49
Industry Canada	411	301	295	259	288
National Defence	135	118	139	145	148
National Research Council Canada	73	66	86	88	87
Natural Resources Canada	36	31	72	67	67
Natural Sciences and Engineering Research Council of Canada	8	7	33	7	8
Other	90	66	66	66	71
<b>Total research and development</b>	<b>791</b>	<b>642</b>	<b>758</b>	<b>733</b>	<b>805</b>
Atlantic Canada Opportunities Agency	25	50	45	56	56
Canadian Space Agency	88	98	128	144	188
Environment Canada	18	15	17	18	17
Industry Canada	410	300	294	259	288
National Defence	76	58	70	84	84
National Research Council Canada	73	66	86	88	87
Natural Resources Canada	31	28	58	53	54
Natural Sciences and Engineering Research Council of Canada	4	4	29	4	5
Other	66	22	30	27	27
<b>Total related scientific activities</b>	<b>253</b>	<b>261</b>	<b>177</b>	<b>180</b>	<b>182</b>
Canadian International Development Agency	126	118	22	27	24
Environment Canada	32	28	31	34	32
Fisheries and Oceans Canada	5	5	6	5	5
Health Canada	6	5	9	9	11
National Defence	59	60	69	61	64
Natural Resources Canada	5	4	15	13	14
Statistics Canada	...	17	6	6	6
Other	19	23	19	24	28

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 3-3

## Federal extramural expenditures — On science and technology and its components in the higher education sector, by major departments and agencies

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology</b>	<b>2,698</b>	<b>2,660</b>	<b>2,990</b>	<b>3,030</b>	<b>3,275</b>
Canada Foundation for Innovation	424	326	298	359	567 <sup>1</sup>
Canadian Institutes of Health Research	730	682	901	875	881
Industry Canada	2	2	87 <sup>2</sup>	15	27
Natural Sciences and Engineering Research Council of Canada	782	816	853	918	945
Social Sciences and Humanities Research Council of Canada	530 <sup>3</sup>	584 <sup>4</sup>	604 <sup>5</sup>	626 <sup>6</sup>	632 <sup>7</sup>
Other	231	250	247	236	223
<b>Total research and development</b>	<b>2,442</b>	<b>2,379</b>	<b>2,709</b>	<b>2,735</b>	<b>2,946</b>
Canada Foundation for Innovation	424	326	298	359	567 <sup>1</sup>
Canadian Institutes of Health Research	717	668	884	859	864
Industry Canada	...	0 <sup>s</sup>	86 <sup>2</sup>	13	26
Natural Sciences and Engineering Research Council of Canada	687	720	743	796	813
Social Sciences and Humanities Research Council of Canada	451 <sup>3</sup>	496 <sup>4</sup>	512 <sup>5</sup>	531 <sup>6</sup>	529 <sup>7</sup>
Other	163	169	187	177	148
<b>Total related scientific activities</b>	<b>256</b>	<b>281</b>	<b>281</b>	<b>294</b>	<b>329</b>
Canadian Institutes of Health Research	12	14	17	16	16
Health Canada	2	18	24	23	25
Natural Resources Canada	2	3	8	7	7
Natural Sciences and Engineering Research Council of Canada	94	97	110	122	132
Public Health Agency of Canada	2	1	7	7	7
Social Sciences and Humanities Research Council of Canada	79	87	92	95	104
Other	65	61	23	24	38

1. Includes funds for the Research Hospital Fund (RHF) Project.

2. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.

3. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

4. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

5. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

6. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

7. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 3-4

**Federal extramural expenditures — On science and technology and its components in the business enterprise sector, by type of payment and by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology payments</b>	<b>1,044</b>	<b>902</b>	<b>936</b>	<b>913</b>	<b>987</b>
<b>Total research and development payments</b>	<b>791</b>	<b>642</b>	<b>758</b>	<b>733</b>	<b>805</b>
<b>Total contracts</b>	<b>185</b>	<b>169</b>	<b>229</b>	<b>259</b>	<b>305</b>
Canadian Space Agency	74	82	121	137	181
Environment Canada	16	15	17	18	17
National Defence	76	58	70	84	84
Royal Canadian Mounted Police	3	6	5	4	6
Transport Canada	4	3	7	6	7
Other	13	6	9	9	11
<b>Total grants and contributions</b>	<b>601</b>	<b>468</b>	<b>526</b>	<b>470</b>	<b>495</b>
Atlantic Canada Opportunities Agency	25	50	45	56	56
Industry Canada	410	300	294	259	288
National Research Council Canada	72	66	86	88	87
Natural Resources Canada	26	26	55	50	51
Natural Sciences and Engineering Research Council of Canada	...	...	26	...	...
Other	67	26	20	17	13
<b>Total research fellowships</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>5</b>
<b>Total related scientific activities payments</b>	<b>253</b>	<b>261</b>	<b>177</b>	<b>180</b>	<b>182</b>
Canadian International Development Agency	126	118	22	27	24
Environment Canada	32	28	31	34	32
Fisheries and Oceans Canada	5	5	6	5	5
Health Canada	6	5	9	9	11
National Defence	59	60	69	61	64
Natural Resources Canada	5	4	15	13	14
Statistics Canada	...	17	6	6	6
Other	19	23	19	24	28

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 3-5

## Federal extramural expenditures — On science and technology and its components in the higher education sector, by type of payment and by major funding departments and agencies

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology payments</b>	<b>2,698</b>	<b>2,660</b>	<b>2,990</b>	<b>3,030</b>	<b>3,275</b>
<b>Total research and development payments</b>	<b>2,442</b>	<b>2,379</b>	<b>2,709</b>	<b>2,735</b>	<b>2,946</b>
<b>Total contracts</b>	<b>37</b>	<b>37</b>	<b>31</b>	<b>30</b>	<b>35</b>
Canadian Space Agency	11	13	12	14	18
Environment Canada	3	3	4	4	4
Health Canada	0 <sup>s</sup>	0 <sup>s</sup>	1	1	1
National Defence	8	9	7	4	3
National Research Council Canada	0 <sup>s</sup>	0 <sup>s</sup>	1	1	1
Natural Resources Canada	1	0 <sup>s</sup>	4	4	4
Public Health Agency of Canada	0 <sup>s</sup>	0 <sup>s</sup>	1	1	1
Public Works and Government Services Canada	1	0 <sup>s</sup>	1	1	1
Other	14	11	1	2	3
<b>Total grants and contributions</b>	<b>2,337</b>	<b>2,279</b>	<b>2,622</b>	<b>2,650</b>	<b>2,855</b>
Canada Foundation for Innovation	424	326	298	359	567 <sup>1</sup>
Canadian Institutes of Health Research	672	625	835	811	816
Industry Canada	...	0 <sup>s</sup>	86 <sup>2</sup>	13	26
Natural Sciences and Engineering Research Council of Canada	678	713	736	789	805
Social Sciences and Humanities Research Council of Canada	451 <sup>3</sup>	496 <sup>4</sup>	512 <sup>5</sup>	531 <sup>6</sup>	528 <sup>7</sup>
Other	113	120	156	147	112
<b>Total research fellowships</b>	<b>68</b>	<b>63</b>	<b>57</b>	<b>55</b>	<b>56</b>
<b>Total related scientific activities payments</b>	<b>256</b>	<b>281</b>	<b>281</b>	<b>294</b>	<b>329</b>
<b>Total education support payments</b>	<b>219</b>	<b>242</b>	<b>238</b>	<b>251</b>	<b>273</b>
Canadian Institutes of Health Research	12	14	17	16	16
Health Canada	0 <sup>s</sup>	16	21	20	23
Natural Resources Canada	...	...	6	5	5
Natural Sciences and Engineering Research Council of Canada	94	97	110	122	132
Social Sciences and Humanities Research Council of Canada	69	79	81	84	93
Other	43	37	3	3	3
<b>Total other related scientific activities</b>	<b>37</b>	<b>39</b>	<b>43</b>	<b>43</b>	<b>56</b>

1. Includes funds for the Research Hospital Fund (RHF) Project.

2. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.

3. Includes \$245 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

4. Includes \$260 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

5. Includes \$300 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

6. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

7. Includes \$315 million for indirect costs of university research funded by the Social Sciences and Humanities Research Council of Canada.

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 3-6

**Federal extramural expenditures — On science and technology and its components in the Canadian non-profit institutions sector, by major funding departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology</b>	<b>307</b>	<b>305</b>	<b>548</b>	<b>447</b>	<b>412</b>
Canadian Institutes of Health Research	14	6	14	13	13
Canadian International Development Agency	9	19	53	63	55
Economic Development Agency of Canada for the Regions of Quebec	21	18	19	13	5
Foreign Affairs and International Trade Canada	8	15	14	8	18
Genome Canada	90	85	92	79	68
Health Canada	12	9	95	91	97
Industry Canada	50	24	50 <sup>1</sup>	33	5
Natural Resources Canada	20	20	20	19	19
Natural Sciences and Engineering Research Council of Canada	17	17	70	42	37
Social Sciences and Humanities Research Council of Canada	4	4	36 <sup>2</sup>	9	9
Western Economic Diversification Canada	5	7	15	21	11
Other	56	79	69	56	73
<b>Total research and development</b>	<b>206</b>	<b>224</b>	<b>376</b>	<b>309</b>	<b>258</b>
Canadian Institutes of Health Research	14	6	14	13	13
Economic Development Agency of Canada for the Regions of Quebec	19	13	11	7	1
Genome Canada	90	85	92	79	68
Health Canada	1	2	82	82	89
Industry Canada	20	24	50 <sup>1</sup>	33	5
Natural Resources Canada	11	12	9	9	9
Natural Sciences and Engineering Research Council of Canada	15	15	68	36	28
Public Safety and Emergency Preparedness Canada	...	1	10	4	9
Western Economic Diversification Canada	5	7	15	21	11
Other	31	59	25	25	25
<b>Total related scientific activities</b>	<b>101</b>	<b>81</b>	<b>172</b>	<b>138</b>	<b>154</b>
Canadian International Development Agency	8	18	52	62	54
Economic Development Agency of Canada for the Regions of Quebec	2	5	8	5	4
Environment Canada	7	6	7	8	7
Fisheries and Oceans Canada	6	1	10	9	9
Foreign Affairs and International Trade Canada	8	15	14	8	18
Health Canada	11	8	13	9	8
Natural Resources Canada	9	8	11	10	10
Public Health Agency of Canada	1	3	5	6	5
Social Sciences and Humanities Research Council of Canada	3	3	35 <sup>2</sup>	7	7
Other	46	14	17	15	31

1. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Industry Canada.

2. Includes several Centres of Excellence in Commercialization and Research (CECR) funded by Social Sciences and Humanities Research Council of Canada.

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 3-7

**Federal extramural expenditures — On science and technology and its components in the foreign sector, by major funding departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	millions of dollars				
<b>Total science and technology</b>	<b>306</b>	<b>301</b>	<b>445</b>	<b>505</b>	<b>465</b>
Canadian Institutes of Health Research	9	11	11	10	10
Canadian International Development Agency	109	107	236	282	249
Canadian Space Agency	31	37	37	36	37
Foreign Affairs and International Trade Canada	43	29	28	31	26
International Development Research Centre	58	60	74	86	88
National Defence	11	10	16	14	9
National Research Council Canada	10	14	10	11	12
Natural Sciences and Engineering Research Council of Canada	14	13	13	14	14
Other	22	21	20	21	19
<b>Total research and development</b>	<b>146</b>	<b>167</b>	<b>192</b>	<b>211</b>	<b>204</b>
Canadian Institutes of Health Research	9	11	11	10	10
Canadian International Development Agency	25	37	43	51	45
Canadian Space Agency	31	36	36	36	37
International Development Research Centre	48	51	65	75	76
National Defence	8	5	14	13	9
National Research Council Canada	10	14	10	11	12
Natural Sciences and Engineering Research Council of Canada	9	8	8	9	9
Other	5	5	6	6	5
<b>Total related scientific activities</b>	<b>160</b>	<b>134</b>	<b>253</b>	<b>294</b>	<b>261</b>
Canadian International Development Agency	84	70	193	230	204
Environment Canada	6	5	6	6	6
Foreign Affairs and International Trade Canada	43	29	28	31	26
International Development Research Centre	9	9	9	11	11
Social Sciences and Humanities Research Council of Canada	4	5	6	6	6
Other	14	16	11	10	8

**Note(s):** Represents departments and agencies that contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals.

Table 4-1

**Federal personnel — Engaged in science and technology activities**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology</b>	<b>35,102</b>	<b>36,027</b>	<b>36,037</b>	<b>36,939</b>	<b>37,044</b>
Research and development	13,321	13,166	13,729	13,907	13,813
Administration of extramural research and development programs	1,924	1,978	1,904	1,955	2,016
Related scientific activities	19,341	20,337	19,821	20,471	20,601
Administration of extramural related scientific activities programs	515	548	583	606	614
<b>Natural sciences and engineering</b>	<b>24,166</b>	<b>24,288</b>	<b>25,113</b>	<b>25,641</b>	<b>25,616</b>
Research and development	12,792	12,445	13,072	13,228	13,091
Administration of extramural research and development programs	1,680	1,709	1,600	1,620	1,629
Related scientific activities	9,414	9,848	10,164	10,506	10,603
Administration of extramural related scientific activities programs	280	286	276	289	293
<b>Social sciences and humanities</b>	<b>10,936</b>	<b>11,739</b>	<b>10,924</b>	<b>11,298</b>	<b>11,428</b>
Research and development	529	720	657	679	722
Administration of extramural research and development programs	245	269	304	335	388
Related scientific activities	9,927	10,489	9,657	9,966	9,998
Administration of extramural related scientific activities programs	235	262	307	318	322

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-2**  
**Federal personnel — Scientific and professional engaged in science and technology activities**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology</b>	<b>15,936</b>	<b>16,096</b>	<b>16,419</b>	<b>17,278</b>	<b>17,634</b>
Research and development	6,346	5,984	6,295	6,418	6,480
Administration of extramural research and development programs	742	766	806	811	837
Related scientific activities	8,681	9,170	9,146	9,872	10,128
Administration of extramural related scientific activities programs	167	176	171	178	188
<b>Natural sciences and engineering</b>	<b>11,933</b>	<b>11,952</b>	<b>12,309</b>	<b>12,724</b>	<b>12,962</b>
Research and development	6,057	5,651	5,952	6,039	6,080
Administration of extramural research and development programs	656	668	690	673	676
Related scientific activities	5,133	5,547	5,589	5,931	6,120
Administration of extramural related scientific activities programs	88	86	79	81	87
<b>Social sciences and humanities</b>	<b>4,003</b>	<b>4,144</b>	<b>4,110</b>	<b>4,554</b>	<b>4,672</b>
Research and development	289	334	343	379	401
Administration of extramural research and development programs	87	98	117	138	161
Related scientific activities	3,548	3,623	3,558	3,941	4,008
Administration of extramural related scientific activities programs	79	90	92	97	102

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-3**  
**Federal personnel — Technical engaged in science and technology activities**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology</b>	<b>8,646</b>	<b>8,822</b>	<b>9,137</b>	<b>8,852</b>	<b>8,824</b>
Research and development	3,897	4,118	4,595	4,572	4,573
Administration of extramural research and development programs	68	70	65	67	66
Related scientific activities	4,661	4,613	4,437	4,169	4,143
Administration of extramural related scientific activities programs	20	20	40	45	42
<b>Natural sciences and engineering</b>	<b>6,318</b>	<b>6,497</b>	<b>6,862</b>	<b>6,879</b>	<b>6,812</b>
Research and development	3,806	3,986	4,429	4,439	4,412
Administration of extramural research and development programs	67	70	61	63	62
Related scientific activities	2,429	2,425	2,352	2,350	2,314
Administration of extramural related scientific activities programs	17	17	20	27	24
<b>Social sciences and humanities</b>	<b>2,327</b>	<b>2,325</b>	<b>2,275</b>	<b>1,973</b>	<b>2,012</b>
Research and development	91	132	166	133	161
Administration of extramural research and development programs	1	0	4	4	4
Related scientific activities	2,232	2,189	2,085	1,818	1,828
Administration of extramural related scientific activities programs	3	4	20	18	18

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-4**  
**Federal personnel — Other personnel engaged in science and technology activities**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology</b>	<b>10,520</b>	<b>11,109</b>	<b>10,481</b>	<b>10,809</b>	<b>10,586</b>
Research and development	3,078	3,063	2,839	2,917	2,759
Administration of extramural research and development programs	1,114	1,141	1,032	1,077	1,113
Related scientific activities	6,000	6,554	6,238	6,431	6,330
Administration of extramural related scientific activities programs	328	351	372	384	384
<b>Natural sciences and engineering</b>	<b>5,915</b>	<b>5,839</b>	<b>5,941</b>	<b>6,039</b>	<b>5,841</b>
Research and development	2,929	2,809	2,691	2,750	2,600
Administration of extramural research and development programs	958	970	849	884	891
Related scientific activities	1,853	1,876	2,224	2,224	2,169
Administration of extramural related scientific activities programs	175	184	177	181	182
<b>Social sciences and humanities</b>	<b>4,605</b>	<b>5,270</b>	<b>4,539</b>	<b>4,770</b>	<b>4,745</b>
Research and development	149	254	148	167	160
Administration of extramural research and development programs	157	171	183	193	222
Related scientific activities	4,146	4,677	4,014	4,207	4,161
Administration of extramural related scientific activities programs	153	168	195	203	202

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-5**  
**Federal personnel — Engaged in science and technology activities, by category and activity**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology personnel</b>	<b>35,102</b>	<b>36,027</b>	<b>36,037</b>	<b>36,939</b>	<b>37,044</b>
Scientific and professional	15,936	16,096	16,419	17,278	17,634
Technical	8,646	8,822	9,137	8,852	8,824
Other	10,520	11,109	10,481	10,809	10,586
<b>Total research and development personnel</b>	<b>15,245</b>	<b>15,143</b>	<b>15,633</b>	<b>15,861</b>	<b>15,829</b>
Scientific and professional	7,089	6,751	7,102	7,229	7,317
Technical	3,965	4,188	4,660	4,639	4,640
Other	4,192	4,204	3,871	3,994	3,872
<b>Total related scientific activities personnel</b>	<b>19,856</b>	<b>20,884</b>	<b>20,404</b>	<b>21,078</b>	<b>21,215</b>
Scientific and professional	8,848	9,346	9,318	10,049	10,317
Technical	4,681	4,634	4,477	4,214	4,185
Other	6,328	6,905	6,610	6,815	6,714

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.



**Table 4-6**  
**Federal personnel — Engaged in science and technology activities in the natural sciences and engineering, by category and activity**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology personnel</b>	<b>24,166</b>	<b>24,288</b>	<b>25,113</b>	<b>25,641</b>	<b>25,616</b>
Scientific and professional	11,933	11,952	12,309	12,724	12,962
Technical	6,318	6,497	6,862	6,879	6,812
Other	5,915	5,839	5,941	6,039	5,841
<b>Total research and development personnel</b>	<b>14,472</b>	<b>14,154</b>	<b>14,672</b>	<b>14,847</b>	<b>14,720</b>
Scientific and professional	6,713	6,319	6,642	6,712	6,755
Technical	3,873	4,056	4,491	4,502	4,474
Other	3,887	3,779	3,540	3,634	3,490
<b>Total related scientific activities personnel</b>	<b>9,694</b>	<b>10,134</b>	<b>10,441</b>	<b>10,794</b>	<b>10,896</b>
Scientific and professional	5,220	5,633	5,667	6,012	6,207
Technical	2,446	2,441	2,372	2,377	2,338
Other	2,028	2,060	2,402	2,405	2,351

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.

**Table 4-7**  
**Federal personnel — Engaged in science and technology activities in the social sciences and humanities, by category and activity**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total science and technology personnel</b>	<b>10,936</b>	<b>11,739</b>	<b>10,924</b>	<b>11,298</b>	<b>11,428</b>
Scientific and professional	4,003	4,144	4,110	4,554	4,672
Technical	2,327	2,325	2,275	1,973	2,012
Other	4,605	5,270	4,539	4,770	4,745
<b>Total research and development personnel</b>	<b>774</b>	<b>989</b>	<b>961</b>	<b>1,014</b>	<b>1,109</b>
Scientific and professional	376	432	460	517	562
Technical	92	132	170	137	165
Other	306	425	331	361	382
<b>Total related scientific activities personnel</b>	<b>10,162</b>	<b>10,750</b>	<b>9,963</b>	<b>10,283</b>	<b>10,319</b>
Scientific and professional	3,627	3,713	3,650	4,038	4,110
Technical	2,235	2,192	2,105	1,837	1,847
Other	4,300	4,845	4,208	4,409	4,363

**Note(s):** Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents, includes administrative and foreign service, administrative support, operational and military personnel.

**Table 4-8**  
**Federal personnel — Engaged in science and technology activities, by type of science, activity, category and by provinces and territories, 2007/2008**

	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	National Capital Region	Canada
millions of dollars													
<b>Total Sciences</b>													
<b>Scientific and professional personnel</b>													
Science and technology	228	56	629	243	1,686	1,752	478	250	592	860	123	9,523	<b>16,419</b>
Research and development	103	43	269	146	1,097	1,220	228	179	369	375	13	3,058	<b>7,102</b>
Related scientific activities	125	13	360	96	589	531	249	71	223	485	110	6,465	<b>9,318</b>
<b>Total Personnel</b>													
Science and technology	487	132	1,330	441	3,610	4,086	1,112	695	1,330	1,761	240	20,812	<b>36,037</b>
Research and development	229	103	620	270	2,369	2,744	550	494	866	768	21	6,599	<b>15,633</b>
Related scientific activities	259	29	710	171	1,241	1,343	562	201	464	993	219	14,213	<b>20,404</b>
<b>Natural Sciences</b>													
<b>Scientific and professional personnel</b>													
Science and technology	210	52	596	235	1,569	1,667	445	247	560	823	118	5,788	<b>12,309</b>
Research and development	103	43	268	146	1,091	1,201	228	179	367	373	13	2,629	<b>6,642</b>
Related scientific activities	106	10	328	89	478	467	217	67	193	450	105	3,159	<b>5,667</b>
<b>Total Personnel</b>													
Science and technology	442	123	1,193	422	3,370	3,770	1,015	676	1,245	1,691	212	10,953	<b>25,113</b>
Research and development	229	103	619	270	2,360	2,711	550	494	863	765	21	5,687	<b>14,672</b>
Related scientific activities	213	20	574	152	1,010	1,058	465	183	382	927	191	5,266	<b>10,441</b>
<b>Social Sciences</b>													
<b>Scientific and professional personnel</b>													
Science and technology	19	4	33	8	117	84	33	3	32	37	5	3,736	<b>4,110</b>
Research and development	0	0	1	0	5	20	0	0	2	2	0	429	<b>460</b>
Related scientific activities	19	4	32	8	112	65	33	3	30	35	5	3,306	<b>3,650</b>
<b>Total Personnel</b>													
Science and technology	45	9	137	19	240	317	97	19	85	70	28	9,859	<b>10,924</b>
Research and development	0	0	2	0	9	32	0	0	3	3	0	911	<b>961</b>
Related scientific activities	45	9	136	19	231	285	97	19	82	67	28	8,947	<b>9,963</b>

**Note(s):** Due to rounding, components may not add to the totals. Quebec and Ontario figures exclude federal government expenditures performed in the National Capital Region.

**Table 4-9**  
**Federal personnel — Engaged in science and technology activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
number					
<b>Total</b>	<b>35,102</b>	<b>36,027</b>	<b>36,037</b>	<b>36,939</b>	<b>37,044</b>
Agriculture and Agri-Food Canada	2,238	2,300	2,362	2,285	2,216
Atomic Energy of Canada Limited	1,450	1,362	1,400	1,525	1,542
Environment Canada	3,469	3,577	3,439	3,454	3,454
Fisheries and Oceans Canada	1,790	1,796	1,803	1,886	1,898
Health Canada	2,567	2,688	3,168	3,544	3,696
Industry Canada	983	960	1,010	959	1,002
National Defence	1,819	1,873	1,898	1,925	1,957
National Research Council Canada	4,155	4,190	4,281	4,096	3,950
Natural Resources Canada	3,273	3,032	3,123	3,116	3,094
Statistics Canada	5,737	6,330	5,676	5,655	5,567
<b>Total of major departments and agencies</b>	<b>27,481</b>	<b>28,108</b>	<b>28,160</b>	<b>28,444</b>	<b>28,375</b>
Other	7,621	7,920	7,877	8,495	8,669

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-10**  
**Federal personnel — Scientific and professional engaged in science and technology activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total</b>	<b>15,936</b>	<b>16,096</b>	<b>16,419</b>	<b>17,278</b>	<b>17,634</b>
Agriculture and Agri-Food Canada	1,027	790	805	783	766
Atomic Energy of Canada Limited	642	603	588	641	648
Environment Canada	1,695	1,748	1,681	1,689	1,689
Fisheries and Oceans Canada	852	867	873	923	930
Health Canada	1,828	2,040	2,278	2,618	2,803
Industry Canada	676	677	677	667	704
National Defence	958	977	966	949	1,012
National Research Council Canada	1,647	1,640	1,632	1,598	1,594
Natural Resources Canada	1,950	1,908	1,924	1,932	1,935
Statistics Canada	1,375	1,396	1,465	1,530	1,506
<b>Total of major departments and agencies</b>	<b>12,651</b>	<b>12,647</b>	<b>12,888</b>	<b>13,329</b>	<b>13,587</b>
Other	3,286	3,450	3,531	3,949	4,046

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-11**  
**Federal personnel — Technical engaged in science and technology activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total</b>	<b>8,646</b>	<b>8,822</b>	<b>9,137</b>	<b>8,852</b>	<b>8,824</b>
Agriculture and Agri-Food Canada	649	971	999	968	926
Atomic Energy of Canada Limited	372	349	696	759	767
Environment Canada	1,036	1,068	1,026	1,030	1,030
Fisheries and Oceans Canada	759	750	749	778	781
Health Canada	303	265	337	308	300
Industry Canada	62	51	55	57	59
National Defence	475	438	433	444	423
National Research Council Canada	1,108	1,124	1,119	1,041	1,037
Natural Resources Canada	988	865	811	797	795
Statistics Canada	1,469	1,438	1,361	1,236	1,216
<b>Total of major departments and agencies</b>	<b>7,220</b>	<b>7,319</b>	<b>7,588</b>	<b>7,418</b>	<b>7,336</b>
Other	1,426	1,503	1,550	1,435	1,489

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-12

## Federal personnel — Other personnel engaged in science and technology activities, by major departments and agencies

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total</b>	<b>10,520</b>	<b>11,109</b>	<b>10,481</b>	<b>10,809</b>	<b>10,586</b>
Agriculture and Agri-Food Canada	563	539	558	534	524
Atomic Energy of Canada Limited	436	410	115	126	127
Environment Canada	738	761	732	735	735
Fisheries and Oceans Canada	179	178	181	185	186
Health Canada	435	383	553	618	593
Industry Canada	245	232	279	235	239
National Defence	386	459	499	533	521
National Research Council Canada	1,400	1,426	1,530	1,457	1,319
Natural Resources Canada	335	259	388	387	364
Statistics Canada	2,893	3,496	2,850	2,889	2,844
<b>Total of major departments and agencies</b>	<b>7,610</b>	<b>8,142</b>	<b>7,685</b>	<b>7,697</b>	<b>7,452</b>
Other	2,910	2,967	2,796	3,111	3,134

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

Table 4-13

## Federal personnel — Engaged in research and development activities, by major departments and agencies

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total</b>	<b>15,245</b>	<b>15,143</b>	<b>15,633</b>	<b>15,861</b>	<b>15,829</b>
Agriculture and Agri-Food Canada	2,081	2,040	2,076	2,048	1,975
Atomic Energy of Canada Limited	1,450	1,362	1,400	1,525	1,542
Canadian Institutes of Health Research	318	341	354	383	383
Canadian Space Agency	524	539	568	681	669
Environment Canada	970	1,001	962	966	966
Fisheries and Oceans Canada	496	490	489	510	511
Health Canada	417	342	469	569	570
National Defence	1,538	1,538	1,679	1,693	1,741
National Research Council Canada	3,654	3,684	3,833	3,620	3,520
Natural Resources Canada	1,685	1,435	1,464	1,479	1,462
Statistics Canada	182	393	317	296	306
<b>Total of major departments and agencies</b>	<b>13,315</b>	<b>13,165</b>	<b>13,611</b>	<b>13,770</b>	<b>13,646</b>
Other	1,930	1,978	2,022	2,092	2,183

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 4-14**  
**Federal personnel — Engaged in related scientific activities, by major departments and agencies**

	2005/2006	2006/2007	2007/2008 <sup>r</sup>	2008/2009 <sup>p</sup>	2009/2010 <sup>p</sup>
	number				
<b>Total</b>	<b>19,856</b>	<b>20,884</b>	<b>20,404</b>	<b>21,078</b>	<b>21,215</b>
Agriculture and Agri-Food Canada	157	260	286	237	241
Canadian Museum of Civilization	395	398	400	410	365
Environment Canada	2,499	2,576	2,477	2,488	2,488
Fisheries and Oceans Canada	1,294	1,306	1,314	1,376	1,387
Health Canada	2,149	2,346	2,699	2,974	3,126
Industry Canada	622	605	660	622	656
Library and Archives Canada	798	729	717	885	885
National Research Council Canada	501	506	448	476	430
Natural Resources Canada	1,588	1,597	1,659	1,637	1,632
Parks Canada	697	798	587	587	587
Statistics Canada	5,555	5,937	5,359	5,359	5,261
Treasury Board of Canada Secretariat	306	368	405	457	459
<b>Total of major departments and agencies</b>	<b>16,561</b>	<b>17,425</b>	<b>17,011</b>	<b>17,509</b>	<b>17,515</b>
Other	3,295	3,460	3,393	3,569	3,699

**Note(s):** The major departments and agencies are those who contributed 2% or more to the total 2007/2008 expenditures. Due to rounding, components may not add to the totals. Personnel counts are reported as full-time equivalents.

**Table 5-1**  
**Federal expenditures by provinces and territories — On science and technology**

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
	millions of dollars				
<b>Total</b>	<b>8,721</b>	<b>8,859</b>	<b>9,448</b>	<b>9,649</b>	<b>10,177</b>
<b>Canada</b>	<b>8,434</b>	<b>8,517</b>	<b>9,142</b>	<b>9,347</b>	<b>9,732</b>
Newfoundland and Labrador	121	137	128	119	126
Prince Edward Island	33	39	47	47	41
Nova Scotia	257	294	260	304	307
New Brunswick	100	122	93	108	130
Quebec <sup>1</sup>	1,328	1,352	1,484	1,470	1,517
Ontario <sup>1</sup>	2,038	1,966	2,101	2,046	2,383
Manitoba	194	226	254	237	266
Saskatchewan	159	157	193	211	193
Alberta	469	474	484	505	471
British Columbia	588	645	674	681	822
Yukon, Northwest Territories and Nunavut	46	35	51	43	43
National Capital Region <sup>2</sup>	2,642	2,709	2,912	2,989	2,922
Unallocated (within Canada)	459	361	461	587	511
Foreign (outside Canada)	287	342	306	302	445

1. Includes the extramural expenditures of the National Capital Region.

2. Federal intramural expenditures only.

**Note(s):** Due to rounding, components may not add to the totals.

Table 5-2

## Federal expenditures by provinces and territories — On science and technology, by type of science and performing sector, 2007/2008

	Federal government	Business enterprises	Higher education	Other performers <sup>1</sup>	Total
	millions of dollars				
<b>Total sciences</b>	<b>5,196</b>	<b>936</b>	<b>2,990</b>	<b>1,054</b>	<b>10,177</b>
<b>Total sciences - Canada</b>	<b>5,196</b>	<b>936</b>	<b>2,990</b>	<b>609</b>	<b>9,732</b>
Newfoundland and Labrador	60	18	40	7	126
Prince Edward Island	17	9	10	5	41
Nova Scotia	176	28	94	9	307
New Brunswick	67	19	35	9	130
Quebec <sup>2</sup>	490	254	693	80	1,517
Ontario <sup>2</sup>	745	333	1,078	227	2,383
Manitoba	168	10	72	15	266
Saskatchewan	91	13	80	10	193
Alberta	183	22	238	29	471
British Columbia	241	118	408	55	822
Yukon, Northwest Territories and Nunavut	37	0 <sup>s</sup>	2	3	43
National Capital Region <sup>3</sup>	2,922	...	...	...	2,922
Unallocated (within Canada)	...	111	240	160	511
Foreign (outside Canada)	...	...	...	445	445
<b>Natural sciences</b>	<b>3,790</b>	<b>898</b>	<b>2301</b>	<b>606</b>	<b>7,594</b>
<b>Natural sciences - Canada</b>	<b>3,790</b>	<b>898</b>	<b>2301</b>	<b>365</b>	<b>7,353</b>
Newfoundland and Labrador	58	18	32	6	114
Prince Edward Island	16	9	8	5	38
Nova Scotia	158	27	69	8	262
New Brunswick	65	19	20	6	110
Quebec <sup>2</sup>	457	249	509	58	1,273
Ontario <sup>2</sup>	694	317	807	82	1,900
Manitoba	155	10	54	11	230
Saskatchewan	88	13	64	6	171
Alberta	169	21	181	23	394
British Columbia	232	117	319	35	703
Yukon, Northwest Territories and Nunavut	33	0 <sup>s</sup>	1	1	35
National Capital Region <sup>3</sup>	1,664	...	...	...	1,664
Unallocated (within Canada)	...	97	236	123	456
Foreign (outside Canada)	...	...	...	241	241
<b>Social sciences</b>	<b>1,406</b>	<b>38</b>	<b>689</b>	<b>449</b>	<b>2,584</b>
<b>Social sciences - Canada</b>	<b>1,406</b>	<b>38</b>	<b>689</b>	<b>245</b>	<b>2,380</b>
Newfoundland and Labrador	3	0 <sup>s</sup>	8	1	12
Prince Edward Island	1	0 <sup>s</sup>	1	1	3
Nova Scotia	18	0 <sup>s</sup>	25	1	44
New Brunswick	2	0 <sup>s</sup>	14	4	20
Quebec <sup>2</sup>	33	5	184	21	243
Ontario <sup>2</sup>	51	16	271	145	483
Manitoba	13	0 <sup>s</sup>	19	4	36
Saskatchewan	3	0 <sup>s</sup>	15	4	22
Alberta	13	1	57	6	77
British Columbia	10	1	89	19	119
Yukon, Northwest Territories and Nunavut	4	0 <sup>s</sup>	1	1	6
National Capital Region <sup>3</sup>	1,257	...	...	...	1,257
Unallocated (within Canada)	0	14	4	38	56
Foreign (outside Canada)	...	...	...	204	204

1. Includes Canadian non-profit institutions, provincial and municipal governments, and other performers.

2. Includes the extramural expenditures of the National Capital Region.

3. Federal intramural expenditures only.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 5-3**  
**Federal expenditures by provinces and territories — On research and development, by type of science and performing sector, 2007/2008**

	Federal government	Business enterprises	Higher education	Other performers <sup>1</sup>	Total
millions of dollars					
<b>Total sciences</b>	<b>2,532</b>	<b>758</b>	<b>2,709</b>	<b>603</b>	<b>6,602</b>
<b>Canada</b>	<b>2,532</b>	<b>758</b>	<b>2,709</b>	<b>411</b>	<b>6,410</b>
Newfoundland and Labrador	28	18	38	3	87
Prince Edward Island	13	8	9	5	35
Nova Scotia	77	25	84	7	193
New Brunswick	46	18	27	5	96
Quebec <sup>2</sup>	310	240	632	57	1,239
Ontario <sup>2</sup>	548	254	965	169	1,936
Manitoba	85	6	65	13	169
Saskatchewan	63	12	75	6	156
Alberta	116	15	214	22	367
British Columbia	108	107	370	34	619
Yukon, Northwest Territories and Nunavut	4	0 <sup>s</sup>	2	2	8
National Capital Region <sup>3</sup>	1,134	...	...	...	1,134
Unallocated (within Canada)	...	54	227	87	368
Foreign (outside Canada)	...	...	...	192	192
<b>Natural sciences</b>	<b>2,360</b>	<b>752</b>	<b>2,152</b>	<b>422</b>	<b>5,686</b>
<b>Canada</b>	<b>2,360</b>	<b>752</b>	<b>2,152</b>	<b>295</b>	<b>5,559</b>
Newfoundland and Labrador	28	18	30	3	79
Prince Edward Island	13	8	8	5	34
Nova Scotia	77	25	64	7	173
New Brunswick	46	18	18	4	86
Quebec <sup>2</sup>	309	239	477	50	1,075
Ontario <sup>2</sup>	545	250	754	74	1,623
Manitoba	85	6	50	10	151
Saskatchewan	63	12	61	4	140
Alberta	115	15	166	20	316
British Columbia	107	107	297	30	541
Yukon, Northwest Territories and Nunavut	4	0 <sup>s</sup>	1	1	6
National Capital Region <sup>3</sup>	968	...	...	...	968
Unallocated (within Canada)	...	53	227	86	366
Foreign (outside Canada)	...	...	...	127	127
<b>Social sciences</b>	<b>172</b>	<b>6</b>	<b>557</b>	<b>181</b>	<b>915</b>
<b>Canada</b>	<b>172</b>	<b>6</b>	<b>557</b>	<b>116</b>	<b>850</b>
Newfoundland and Labrador	0	0	7	1	8
Prince Edward Island	0	0	1	1	2
Nova Scotia	0 <sup>s</sup>	0 <sup>s</sup>	20	1	21
New Brunswick	0	0	9	1	10
Quebec <sup>2</sup>	1	1	155	7	164
Ontario <sup>2</sup>	3	3	212	95	313
Manitoba	0	0 <sup>s</sup>	15	2	17
Saskatchewan	0	0	13	1	14
Alberta	0 <sup>s</sup>	0 <sup>s</sup>	49	2	51
British Columbia	1	0 <sup>s</sup>	73	4	78
Yukon, Northwest Territories and Nunavut	0	0 <sup>s</sup>	1	1	2
National Capital Region <sup>3</sup>	166	...	...	...	166
Unallocated (within Canada)	...	1	0 <sup>s</sup>	1	2
Foreign (outside Canada)	...	...	...	65	65

1. Includes Canadian non-profit institutions, provincial and municipal governments, and other performers.

2. Includes the extramural expenditures of the National Capital Region.

3. Federal intramural expenditures only.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 5-4**  
**Federal expenditures by provinces and territories — On related scientific activities, by type of science and performing sector, 2007/2008**

	Federal government	Business enterprises	Higher education	Other performers <sup>1</sup>	Total
millions of dollars					
<b>Total sciences</b>	<b>2,664</b>	<b>178</b>	<b>281</b>	<b>451</b>	<b>3,574</b>
<b>Canada</b>	<b>2,664</b>	<b>178</b>	<b>281</b>	<b>198</b>	<b>3,321</b>
Newfoundland and Labrador	32	1	3	4	40
Prince Edward Island	3	1	1	0 <sup>s</sup>	5
Nova Scotia	99	2	10	2	113
New Brunswick	21	1	8	4	34
Quebec <sup>2</sup>	180	14	61	23	278
Ontario <sup>2</sup>	197	79	113	58	447
Manitoba	83	4	7	2	96
Saskatchewan	27	0 <sup>s</sup>	5	4	36
Alberta	67	6	23	7	103
British Columbia	134	12	37	20	203
Yukon, Northwest Territories and Nunavut	33	0 <sup>s</sup>	0 <sup>s</sup>	1	34
National Capital Region <sup>3</sup>	1,788	...	...	...	1,788
Unallocated (within Canada)	...	57	13	73	143
Foreign (outside Canada)	...	...	...	253	253
<b>Natural sciences</b>	<b>1,430</b>	<b>146</b>	<b>148</b>	<b>184</b>	<b>1,908</b>
<b>Canada</b>	<b>1,430</b>	<b>146</b>	<b>148</b>	<b>70</b>	<b>1,794</b>
Newfoundland and Labrador	30	0 <sup>s</sup>	1	4	35
Prince Edward Island	2	1	1	0 <sup>s</sup>	4
Nova Scotia	82	2	5	2	91
New Brunswick	19	0 <sup>s</sup>	2	1	22
Quebec <sup>2</sup>	148	11	32	8	199
Ontario <sup>2</sup>	150	67	54	8	279
Manitoba	70	4	3	1	78
Saskatchewan	25	0 <sup>s</sup>	3	1	29
Alberta	54	6	15	3	78
British Columbia	124	11	21	5	161
Yukon, Northwest Territories and Nunavut	29	0 <sup>s</sup>	0 <sup>s</sup>	1	30
National Capital Region <sup>3</sup>	697	...	...	...	697
Unallocated (within Canada)	...	44	9	36	89
Foreign (outside Canada)	...	...	...	114	114
<b>Social sciences</b>	<b>1,234</b>	<b>32</b>	<b>133</b>	<b>266</b>	<b>1,666</b>
<b>Canada</b>	<b>1,234</b>	<b>32</b>	<b>133</b>	<b>128</b>	<b>1,528</b>
Newfoundland and Labrador	3	0 <sup>s</sup>	1	0 <sup>s</sup>	4
Prince Edward Island	1	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	1
Nova Scotia	17	0 <sup>s</sup>	4	0 <sup>s</sup>	21
New Brunswick	2	0 <sup>s</sup>	5	3	10
Quebec <sup>2</sup>	32	4	29	14	79
Ontario <sup>2</sup>	47	12	59	49	167
Manitoba	13	0 <sup>s</sup>	4	2	19
Saskatchewan	3	0 <sup>s</sup>	2	3	8
Alberta	13	1	8	4	26
British Columbia	9	1	16	15	41
Yukon, Northwest Territories and Nunavut	4	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	4
National Capital Region <sup>3</sup>	1,091	...	...	...	1,091
Unallocated (within Canada)	...	13	3	37	53
Foreign (outside Canada)	...	...	...	138	138

1. Includes Canadian non-profit institutions, provincial and municipal governments, and other performers.

2. Includes the extramural expenditures of the National Capital Region.

3. Federal intramural expenditures only.

**Note(s):** Due to rounding, components may not add to the totals.



**Table 5-5**  
**Federal expenditures by provinces and territories — Extramural expenditures on science and technology, by type of science and activity, 2007/2008**

	N.L.	P.E.I.	N.S.	N.B.	Que. <sup>1</sup>	Ont. <sup>1</sup>	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Unallocated within Canada	Canada	Outside of Canada
millions of dollars														
<b>Total Sciences</b>														
<b>Total science and technology</b>	<b>66</b>	<b>24</b>	<b>131</b>	<b>63</b>	<b>1,027</b>	<b>1,638</b>	<b>98</b>	<b>102</b>	<b>288</b>	<b>581</b>	<b>6</b>	<b>511</b>	<b>4,535</b>	<b>445</b>
Grants	60	22	121	54	977	1,410	90	95	273	548	5	403	4,057	420
Contracts	6	2	10	9	50	228	8	7	16	33	0 <sup>s</sup>	108	478	26
<b>Total research and development</b>	<b>59</b>	<b>22</b>	<b>117</b>	<b>50</b>	<b>929</b>	<b>1,388</b>	<b>85</b>	<b>93</b>	<b>252</b>	<b>512</b>	<b>4</b>	<b>368</b>	<b>3,878</b>	<b>192</b>
Grants	56	21	112	49	897	1,259	82	86	243	489	4	308	3,605	175
Contracts	2	1	5	1	32	129	3	7	9	23	0 <sup>s</sup>	61	273	17
<b>Total related scientific activities</b>	<b>7</b>	<b>2</b>	<b>14</b>	<b>13</b>	<b>98</b>	<b>250</b>	<b>13</b>	<b>10</b>	<b>37</b>	<b>69</b>	<b>1</b>	<b>143</b>	<b>657</b>	<b>253</b>
Grants	3	1	9	5	80	151	8	9	30	59	1	95	452	245
Contracts	4	1	5	8	18	98	5	0 <sup>s</sup>	7	10	0 <sup>s</sup>	48	205	8
<b>Natural sciences</b>														
<b>Total science and technology</b>	<b>56</b>	<b>22</b>	<b>105</b>	<b>45</b>	<b>816</b>	<b>1,207</b>	<b>75</b>	<b>83</b>	<b>225</b>	<b>471</b>	<b>3</b>	<b>456</b>	<b>3,563</b>	<b>241</b>
Grants	50	20	96	43	775	1,013	68	76	211	440	2	354	3,150	217
Contracts	6	2	9	2	41	193	7	7	14	31	0 <sup>s</sup>	102	413	24
<b>Total research and development</b>	<b>51</b>	<b>20</b>	<b>96</b>	<b>41</b>	<b>765</b>	<b>1,078</b>	<b>67</b>	<b>78</b>	<b>201</b>	<b>435</b>	<b>2</b>	<b>366</b>	<b>3,199</b>	<b>127</b>
Grants	49	19	91	40	734	952	64	71	193	412	2	306	2,933	110
Contracts	2	1	5	1	31	126	3	7	8	23	0 <sup>s</sup>	60	266	17
<b>Total related scientific activities</b>	<b>6</b>	<b>2</b>	<b>9</b>	<b>4</b>	<b>51</b>	<b>129</b>	<b>8</b>	<b>5</b>	<b>24</b>	<b>37</b>	<b>1</b>	<b>90</b>	<b>364</b>	<b>114</b>
Grants	2	1	5	3	41	61	4	4	19	28	0 <sup>s</sup>	48	217	107
Contracts	4	1	4	1	10	68	4	0 <sup>s</sup>	5	8	0 <sup>s</sup>	42	147	7
<b>Social Sciences</b>														
<b>Total science and technology</b>	<b>10</b>	<b>2</b>	<b>26</b>	<b>19</b>	<b>211</b>	<b>431</b>	<b>23</b>	<b>19</b>	<b>64</b>	<b>110</b>	<b>3</b>	<b>55</b>	<b>972</b>	<b>204</b>
Grants	9	2	25	11	202	397	22	19	62	107	3	49	907	202
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	1	8	9	34	2	0 <sup>s</sup>	2	2	0 <sup>s</sup>	7	64	2
<b>Total research and development</b>	<b>8</b>	<b>2</b>	<b>21</b>	<b>10</b>	<b>164</b>	<b>310</b>	<b>18</b>	<b>15</b>	<b>51</b>	<b>77</b>	<b>2</b>	<b>2</b>	<b>679</b>	<b>65</b>
Grants	8	2	21	10	162	306	18	15	50	77	2	2	672	65
Contracts	0	0	0 <sup>s</sup>	0 <sup>s</sup>	1	4	0 <sup>s</sup>	0	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	7	0 <sup>s</sup>
<b>Total related scientific activities</b>	<b>2</b>	<b>0<sup>s</sup></b>	<b>5</b>	<b>9</b>	<b>47</b>	<b>121</b>	<b>6</b>	<b>5</b>	<b>13</b>	<b>33</b>	<b>0<sup>s</sup></b>	<b>53</b>	<b>293</b>	<b>138</b>
Grants	1	0 <sup>s</sup>	4	1	40	90	4	5	11	31	0 <sup>s</sup>	47	235	137
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	1	7	8	31	2	0 <sup>s</sup>	2	2	0 <sup>s</sup>	6	58	1

1. Includes the extramural expenditures of the National Capital Region.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 5-6  
Federal expenditures by provinces and territories — Extramural expenditures in business enterprise on science and technology, by type of science and activity, 2007/2008**

	N.L.	P.E.I.	N.S.	N.B.	Que. <sup>1</sup>	Ont. <sup>1</sup>	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Unallocated within Canada	Canada
millions of dollars													
<b>Total Sciences</b>													
<b>Total science and technology</b>	<b>18</b>	<b>9</b>	<b>28</b>	<b>19</b>	<b>254</b>	<b>333</b>	<b>10</b>	<b>13</b>	<b>22</b>	<b>118</b>	<b>0<sup>s</sup></b>	<b>111</b>	<b>936</b>
Grants	16	9	20	18	216	138	4	7	12	92	0 <sup>s</sup>	38	570
Contracts	2	0 <sup>s</sup>	7	1	38	195	6	5	10	27	0 <sup>s</sup>	73	365
<b>Total research and development</b>	<b>18</b>	<b>8</b>	<b>25</b>	<b>18</b>	<b>240</b>	<b>254</b>	<b>6</b>	<b>12</b>	<b>15</b>	<b>107</b>	<b>0<sup>s</sup></b>	<b>54</b>	<b>758</b>
Grants	16	8	20	18	212	134	4	7	11	86	0 <sup>s</sup>	13	529
Contracts	1	0 <sup>s</sup>	5	0 <sup>s</sup>	28	119	2	5	4	21	0 <sup>s</sup>	41	228
<b>Total related scientific activities</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>14</b>	<b>79</b>	<b>4</b>	<b>0<sup>s</sup></b>	<b>6</b>	<b>12</b>	<b>0<sup>s</sup></b>	<b>57</b>	<b>178</b>
Grants	0 <sup>s</sup>	1	0 <sup>s</sup>	0 <sup>s</sup>	5	4	0 <sup>s</sup>	0 <sup>s</sup>	1	6	...	25	41
Contracts	1	0 <sup>s</sup>	2	1	10	76	4	0 <sup>s</sup>	5	6	0 <sup>s</sup>	32	137
<b>Natural sciences</b>													
<b>Total science and technology</b>	<b>18</b>	<b>9</b>	<b>27</b>	<b>19</b>	<b>249</b>	<b>317</b>	<b>10</b>	<b>13</b>	<b>21</b>	<b>117</b>	<b>0<sup>s</sup></b>	<b>97</b>	<b>898</b>
Grants	16	9	20	18	215	137	4	7	12	92	0 <sup>s</sup>	28	558
Contracts	2	0 <sup>s</sup>	7	1	34	180	6	5	9	26	0 <sup>s</sup>	70	340
<b>Total research and development</b>	<b>18</b>	<b>8</b>	<b>25</b>	<b>18</b>	<b>239</b>	<b>250</b>	<b>6</b>	<b>12</b>	<b>15</b>	<b>107</b>	<b>0<sup>s</sup></b>	<b>53</b>	<b>752</b>
Grants	16	8	20	18	211	134	4	7	11	86	0 <sup>s</sup>	12	528
Contracts	1	0 <sup>s</sup>	5	0 <sup>s</sup>	27	116	2	5	4	21	0 <sup>s</sup>	41	224
<b>Total related scientific activities</b>	<b>0<sup>s</sup></b>	<b>1</b>	<b>2</b>	<b>0<sup>s</sup></b>	<b>11</b>	<b>67</b>	<b>4</b>	<b>0<sup>s</sup></b>	<b>6</b>	<b>11</b>	<b>0<sup>s</sup></b>	<b>44</b>	<b>146</b>
Grants	0 <sup>s</sup>	1	0 <sup>s</sup>	0 <sup>s</sup>	4	3	0 <sup>s</sup>	0 <sup>s</sup>	1	6	...	16	29
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	2	0 <sup>s</sup>	7	64	4	0 <sup>s</sup>	5	5	0 <sup>s</sup>	29	116
<b>Social Sciences</b>													
<b>Total science and technology</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>5</b>	<b>16</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>1</b>	<b>1</b>	<b>0<sup>s</sup></b>	<b>14</b>	<b>38</b>
Grants	0 <sup>s</sup>	...	0 <sup>s</sup>	...	1	1	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	...	10	12
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	4	15	0 <sup>s</sup>	0 <sup>s</sup>	1	1	0 <sup>s</sup>	3	25
<b>Total research and development</b>	<b>...</b>	<b>...</b>	<b>0<sup>s</sup></b>	<b>...</b>	<b>1</b>	<b>3</b>	<b>0<sup>s</sup></b>	<b>...</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>1</b>	<b>6</b>
Grants	...	...	...	...	0 <sup>s</sup>	0 <sup>s</sup>	...	...	...	...	...	1	1
Contracts	...	...	0 <sup>s</sup>	...	1	3	0 <sup>s</sup>	...	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	5
<b>Total related scientific activities</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>4</b>	<b>12</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>1</b>	<b>1</b>	<b>0<sup>s</sup></b>	<b>13</b>	<b>32</b>
Grants	0 <sup>s</sup>	...	0 <sup>s</sup>	...	1	1	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	...	10	12
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	12	0 <sup>s</sup>	0 <sup>s</sup>	1	1	0 <sup>s</sup>	3	20

1. Includes the extramural expenditures of the National Capital Region.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 5-7**  
**Federal expenditures by provinces and territories — Extramural expenditures in higher education sector on science and technology, by type of science and activity, 2007/2008**

	N.L.	P.E.I.	N.S.	N.B.	Que. <sup>1</sup>	Ont. <sup>1</sup>	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Unallocated within Canada	Canada
millions of dollars													
<b>Total Sciences</b>													
<b>Total science and technology</b>	<b>40</b>	<b>10</b>	<b>94</b>	<b>35</b>	<b>693</b>	<b>1,078</b>	<b>72</b>	<b>80</b>	<b>238</b>	<b>408</b>	<b>2</b>	<b>240</b>	<b>2,990</b>
Grants	39	9	93	30	684	1,054	71	78	233	404	2	229	2,927
Contracts	1	0 <sup>s</sup>	1	5	9	24	2	2	5	3	0	11	63
<b>Total research and development</b>	<b>38</b>	<b>9</b>	<b>84</b>	<b>27</b>	<b>632</b>	<b>965</b>	<b>65</b>	<b>75</b>	<b>214</b>	<b>370</b>	<b>2</b>	<b>227</b>	<b>2,709</b>
Grants	37	9	84	26	629	956	65	73	211	368	2	217	2,678
Contracts	1	0 <sup>s</sup>	0 <sup>s</sup>	1	3	9	0 <sup>s</sup>	1	4	2	0	10	31
<b>Total related scientific activities</b>	<b>3</b>	<b>1</b>	<b>10</b>	<b>8</b>	<b>61</b>	<b>113</b>	<b>7</b>	<b>5</b>	<b>23</b>	<b>37</b>	<b>0<sup>s</sup></b>	<b>13</b>	<b>281</b>
Grants	2	0 <sup>s</sup>	9	4	55	98	6	5	22	36	0 <sup>s</sup>	12	249
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	1	4	6	15	1	0 <sup>s</sup>	1	1	0	1	32
<b>Natural sciences</b>													
<b>Total science and technology</b>	<b>32</b>	<b>8</b>	<b>69</b>	<b>20</b>	<b>509</b>	<b>807</b>	<b>54</b>	<b>64</b>	<b>181</b>	<b>319</b>	<b>1</b>	<b>236</b>	<b>2,301</b>
Grants	31	8	69	20	504	797	53	63	177	316	1	225	2,264
Contracts	1	0 <sup>s</sup>	1	1	4	10	0 <sup>s</sup>	2	4	3	0	11	36
<b>Total research and development</b>	<b>30</b>	<b>8</b>	<b>64</b>	<b>18</b>	<b>477</b>	<b>754</b>	<b>50</b>	<b>61</b>	<b>166</b>	<b>297</b>	<b>1</b>	<b>227</b>	<b>2,152</b>
Grants	30	8	64	18	474	745	50	60	162	296	1	217	2,122
Contracts	1	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	9	0 <sup>s</sup>	1	3	2	0	10	30
<b>Total related scientific activities</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>32</b>	<b>54</b>	<b>3</b>	<b>3</b>	<b>15</b>	<b>21</b>	<b>0<sup>s</sup></b>	<b>9</b>	<b>148</b>
Grants	1	0 <sup>s</sup>	5	2	31	52	3	3	15	20	0 <sup>s</sup>	9	142
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	1	0 <sup>s</sup>	1	2	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	1	0	1	6
<b>Social Sciences</b>													
<b>Total science and technology</b>	<b>8</b>	<b>1</b>	<b>25</b>	<b>14</b>	<b>184</b>	<b>271</b>	<b>19</b>	<b>15</b>	<b>57</b>	<b>89</b>	<b>1</b>	<b>4</b>	<b>689</b>
Grants	8	1	24	10	180	257	18	15	56	88	1	4	663
Contracts	...	...	1	4	4	14	1	0 <sup>s</sup>	1	1	0	0 <sup>s</sup>	26
<b>Total research and development</b>	<b>7</b>	<b>1</b>	<b>20</b>	<b>9</b>	<b>155</b>	<b>212</b>	<b>15</b>	<b>13</b>	<b>49</b>	<b>73</b>	<b>1</b>	<b>0<sup>s</sup></b>	<b>557</b>
Grants	7	1	20	9	155	212	15	13	49	73	1	0 <sup>s</sup>	556
Contracts	...	...	0 <sup>s</sup>	0 <sup>s</sup>	...	0 <sup>s</sup>	...	...	0 <sup>s</sup>	...	0	...	1
<b>Total related scientific activities</b>	<b>1</b>	<b>0<sup>s</sup></b>	<b>4</b>	<b>5</b>	<b>29</b>	<b>59</b>	<b>4</b>	<b>2</b>	<b>8</b>	<b>16</b>	<b>0</b>	<b>3</b>	<b>133</b>
Grants	1	0 <sup>s</sup>	4	1	25	46	3	2	7	16	0	3	107
Contracts	...	...	1	4	4	14	1	0 <sup>s</sup>	1	1	0	0 <sup>s</sup>	25

1. Includes the extramural expenditures of the National Capital Region.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 5-8**  
**Federal expenditures by provinces and territories — Extramural expenditures in other Canadian sector<sup>1</sup> on science and technology, by type of science and activity, 2007/2008**

	N.L.	P.E.I.	N.S.	N.B.	Que. <sup>2</sup>	Ont. <sup>2</sup>	Man.	Sask.	Alta.	B.C.	Y.T., N.W.T. and Nvt.	Unallocated within Canada	Canada
millions of dollars													
<b>Total sciences</b>													
<b>Total science and technology</b>	<b>7</b>	<b>5</b>	<b>9</b>	<b>9</b>	<b>80</b>	<b>227</b>	<b>15</b>	<b>10</b>	<b>29</b>	<b>55</b>	<b>3</b>	<b>160</b>	<b>609</b>
Grants	4	4	8	6	76	218	15	10	28	52	2	136	559
Contracts	3	1	1	3	3	8	0 <sup>s</sup>	0 <sup>s</sup>	1	3	0 <sup>s</sup>	25	50
<b>Total research and development</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>5</b>	<b>57</b>	<b>169</b>	<b>13</b>	<b>6</b>	<b>22</b>	<b>34</b>	<b>2</b>	<b>87</b>	<b>411</b>
Grants	3	4	7	5	56	168	13	6	21	34	2	78	398
Contracts	0 <sup>s</sup>	1	0	0 <sup>s</sup>	1	1	0 <sup>s</sup>	0 <sup>s</sup>	1	0 <sup>s</sup>	0 <sup>s</sup>	9	13
<b>Total related scientific activities</b>	<b>4</b>	<b>0<sup>s</sup></b>	<b>2</b>	<b>4</b>	<b>23</b>	<b>58</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>20</b>	<b>1</b>	<b>73</b>	<b>198</b>
Grants	1	0 <sup>s</sup>	1	1	20	50	2	4	7	18	1	57	162
Contracts	3	0 <sup>s</sup>	1	3	2	7	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	0 <sup>s</sup>	15	37
<b>Natural sciences</b>													
<b>Total science and technology</b>	<b>6</b>	<b>5</b>	<b>8</b>	<b>6</b>	<b>58</b>	<b>82</b>	<b>11</b>	<b>6</b>	<b>23</b>	<b>35</b>	<b>1</b>	<b>123</b>	<b>365</b>
Grants	3	4	7	5	56	79	11	6	22	33	1	101	328
Contracts	3	1	1	0 <sup>s</sup>	3	3	0 <sup>s</sup>	0 <sup>s</sup>	1	3	0 <sup>s</sup>	21	37
<b>Total research and development</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>4</b>	<b>50</b>	<b>74</b>	<b>10</b>	<b>4</b>	<b>20</b>	<b>30</b>	<b>1</b>	<b>86</b>	<b>295</b>
Grants	3	4	7	4	49	73	10	4	20	30	1	77	282
Contracts	0 <sup>s</sup>	1	0	0 <sup>s</sup>	1	1	0	0 <sup>s</sup>	1	...	0 <sup>s</sup>	9	12
<b>Total related scientific activities</b>	<b>4</b>	<b>0<sup>s</sup></b>	<b>2</b>	<b>1</b>	<b>8</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>1</b>	<b>36</b>	<b>70</b>
Grants	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	1	6	6	0 <sup>s</sup>	1	3	2	0 <sup>s</sup>	24	45
Contracts	3	0 <sup>s</sup>	1	0 <sup>s</sup>	2	2	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	0 <sup>s</sup>	12	25
<b>Social sciences</b>													
<b>Total science and technology</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>21</b>	<b>145</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>19</b>	<b>1</b>	<b>38</b>	<b>245</b>
Grants	1	1	1	1	21	139	4	4	6	19	1	35	232
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	1	6	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0	3	13
<b>Total research and development</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>95</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>116</b>
Grants	1	1	1	1	7	95	2	1	2	4	1	1	115
Contracts	0	0	0	0	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0	0 <sup>s</sup>	0 <sup>s</sup>	0	0 <sup>s</sup>	1
<b>Total related scientific activities</b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>0<sup>s</sup></b>	<b>3</b>	<b>14</b>	<b>49</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>15</b>	<b>0<sup>s</sup></b>	<b>37</b>	<b>128</b>
Grants	0 <sup>s</sup>	0	0 <sup>s</sup>	0 <sup>s</sup>	14	44	2	3	4	15	0 <sup>s</sup>	34	116
Contracts	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	3	0 <sup>s</sup>	5	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0 <sup>s</sup>	0	3	12

1. Includes Canadian non-profit institutions, provincial and municipal governments and other performers.

2. Includes the extramural expenditures of the National Capital Region.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 6-1**  
**Federal expenditures by socio-economic objectives — On science and technology**

	2005/2006		2006/2007		2007/2008	
	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural
	millions of dollars					
<b>Science and technology expenditures</b>	<b>4,690</b>	<b>4,425</b>	<b>4,924</b>	<b>4,389</b>	<b>4,885</b>	<b>4,980</b>
Exploration and exploitation of the earth	448	101	441	74	441	91
Infrastructure and general planning of land use						
Transport	94	32	74	32	92	40
Telecommunication	57	32	56	23	48	30
Other	130	33	139	33	152	38
Control and care of the environment	470	247	452	235	486	295
Protection and improvement of human health	435	1,175	478	1,247	576	1,573
Production, distribution and rational utilization of energy	263	121	372	103	419	144
Agricultural production and technology						
Agriculture	413	114	440	142	438	185
Fishing	168	37	169	26	162	43
Forestry	95	56	93	87	88	90
Industrial production and technology	296	958	291	883	297	936
Social structures and relationships	1,021	336	1,097	348	974	377
Exploration and exploitation of space	176	168	178	183	132	211
Non-oriented research	317	799	315	823	316	652
Other civil research	26	5	28	10	31	110
Defence	265	156	300	140	235	165
Other	17	56	0	0	0	0

1. Non-program (indirect) costs are excluded.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 6-2**  
**Federal expenditures by socio-economic objectives — On research and development**

	2005/2006		2006/2007		2007/2008	
	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural
	millions of dollars					
<b>Science and technology expenditures</b>	<b>2,298</b>	<b>3,628</b>	<b>2,391</b>	<b>3,577</b>	<b>2,421</b>	<b>4,071</b>
Exploration and exploitation of the earth	110	78	98	58	102	72
Infrastructure and general planning of land use						
Transport	58	28	50	26	52	33
Telecommunication	52	31	51	21	44	28
Other	46	28	40	29	44	33
Control and care of the environment	216	185	188	175	203	198
Protection and improvement of human health	210	1,106	217	1,160	258	1,364
Production, distribution and rational utilization of energy	229	103	339	89	387	107
Agricultural production and technology						
Agriculture	336	102	340	130	337	128
Fishing	47	25	47	19	45	21
Forestry	75	44	76	46	61	65
Industrial production and technology	198	884	196	831	203	875
Social structures and relationships	59	203	81	196	100	228
Exploration and exploitation of space	162	164	163	179	123	208
Non-oriented research	219	496	219	535	239	609
Other civil research	23	4	24	10	18	10
Defence	245	93	261	72	205	91
Other	13	54	0	0	0	0

1. Non-program (indirect) costs are excluded.

**Note(s):** Due to rounding, components may not add to the totals.

**Table 6-3**  
**Federal expenditures by socio-economic objectives — On related scientific activities**

	2005/2006		2006/2007		2007/2008	
	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural	Intramural <sup>1</sup>	Extramural
	millions of dollars					
<b>Science and technology expenditures</b>	<b>2,392</b>	<b>797</b>	<b>2,533</b>	<b>812</b>	<b>2,464</b>	<b>909</b>
Exploration and exploitation of the earth	338	23	343	16	339	19
Infrastructure and general planning of land use						
Transport	35	4	24	6	39	7
Telecommunication	5	1	5	2	4	1
Other	84	5	98	4	109	5
Control and care of the environment	254	62	265	60	282	98
Protection and improvement of human health	225	69	261	86	317	209
Production, distribution and rational utilization of energy	34	17	33	14	32	37
Agricultural production and technology						
Agriculture	77	12	100	12	101	57
Fishing	122	12	122	7	117	22
Forestry	20	11	17	42	26	25
Industrial production and technology	98	74	95	52	94	60
Social structures and relationships	962	133	1,016	151	875	149
Exploration and exploitation of space	14	4	16	4	9	3
Non-oriented research	98	303	95	288	77	43
Other civil research	3	1	4	0 <sup>s</sup>	13	101
Defence	20	64	38	67	30	74
Other	4	2	0	0	0	0

1. Non-program (indirect) costs are excluded.

**Note(s):** Due to rounding, components may not add to the totals.

## Methodology

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The Federal Government is a principal funder of science and technology in Canada. This report presents information on the disposition of monies and human resources for science and technology (S&T) by federal departments and agencies. The information has been assembled to serve as a reference document for program managers, government officials, the media and the general public. It records the allocation of S&T resources for the last five years.

The statistics are collected through the survey of Federal Science Expenditures and Personnel, which records past, current and preliminary expenditures for activities in the natural and social sciences. The survey is designed to correspond as much as possible to the system of budgetary estimates used by the federal government. This is done to ease the response burden, assist in editing and, most importantly, to produce comparable data for policy planning and program evaluation. Thus, the questionnaire covers the same time span as the estimates including: actual expenditures for the past fiscal year, e.g. 2007/2008; forecast expenditures for the current fiscal year, e.g. 2008/2009; and proposed estimates for the fiscal year, e.g. 2009/2010 (as also reported in the Public Accounts).

Fifty-four different federal government departments and agencies either perform science and technology (S&T) activities or have a budgetary allocation to fund S&T. In addition to the expenditures attributable to program budgets, there are additional costs attributable to scientific activities which must be included if a full picture of the resources devoted to science activities is to be obtained. These include other sources of funds and other S&T costs which are defined below:

Transfers into the program from other federal government departments and agencies, net of transfers out;

Income from external sources such as industry and provincial governments;

Other S&T costs: Non-Program Costs (indirect costs) are costs that are not part of the budgets of scientific programs and include services provided by other departments, such as:

- accommodation by Public Works and Government Services Canada and own department;
- employer's share of health and employment insurance premiums paid by Treasury Board;
- employee compensation under Workers Compensation Acts paid by Human Resources and Social Development Canada;
- cost of legal services provided by the Department of Justice;
- cheques issue cost by Public Works and Government Services Canada.

Indirect costs are included in departmental totals; however, these costs have not been included in expenditures classified by socio-economic objective.

According to international convention, science and technology activities are divided into two fields; natural sciences and engineering (NSE) and social sciences and humanities (SSH). These fields of science are further divided into research and development (R&D) and related scientific activities (RSA). The Federal Government may choose to perform S&T in its own laboratories (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this article on S&T activities funded by the federal government for R&D and RSA and distinguished by performer (that is, intramurally by the government itself or extramurally, by business enterprises (industry), universities, provincial and municipal governments, Canadian non-profit organizations, other performers and foreign performers). Definitions of these terms are provided in the Technical Notes section. Crown corporations which have an industrial function are not included. They are treated as commercial enterprises and the crown corporation expenditures in aggregate are included in the Statistics Canada report, Industrial Research and Development, Catalogue No. 88-202-X

Considerable effort has been expended to maintain the continuity and compatibility of the data series to permit analysis and study of the impact of scientific activities. Efforts of the departments and agencies in ensuring accurate and complete information are gratefully acknowledged.



# Technical notes

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## Scope and limitations of the data

The expenditures data for scientific activities controlled by federal departments and agencies provided in this document correspond to the budgetary expenditures by program presented in Main Estimates for the approval of Parliament. The following kinds of non-budgetary costs or expenditures are not included:

- loans or advances to and investments in Crown Corporations; loans or advances for specific purposes to other governments and international organizations or persons or corporations in the private sector.

## Reliability of the data

All the possible sources of error were examined. Definitions have been taken from a compendium of methods of error evaluation in censuses and surveys, Statistics Canada, catalogue no. 13-564E.

- A complete enumeration is carried out of all federal departments and agencies involved in scientific activities.
- Being a census, coverage and non-response are very minor causes of error.
- No imputation, coding, or sampling is done by Statistics Canada for this exercise.

## Data capture

The data capture operation in a census or survey consists of converting the data received on questionnaires (e.g., respondent answers) or coding forms to a machine readable format.

All data capture for science statistics is through manual intervention, at a computer terminal.

Significant uncorrected data capture errors are unlikely because of the examination of numerous tables and listings prepared for data analysis before publication tables are created. Mistakes in expenditures due to coding error are believed to be less than 1%.

## Edit

The edit procedures usually consist of:

- checking each field of every record to ascertain whether it contains a valid code or entry;
- checking codes or entries in certain predetermined combinations of fields to ascertain whether codes or entries are consistent with one another. Although there are a number of edits, all cases of failed edit checks are corrected after consideration by editors.

# Definitions

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## Scope and limitations of the data

According to international convention, science and technology activities are divided into two fields; natural sciences and engineering (NSE) and social sciences and humanities (SSH). These fields of science are further divided into research and development (R&D) and related scientific activities (RSA). The federal government may choose to perform S&T in its own laboratories (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this article on S&T activities funded by the federal government for R&D and RSA and distinguished by performer (that is, intramurally by the government itself or extramurally, by business enterprises (industry), the higher education sector, provincial and municipal governments, Canadian non-profit organizations, other performers and foreign performers).

## Definitions applicable to both Natural sciences and engineering and Social science and humanities

### Scientific research and experimental development (R&D)

Creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge and to use this knowledge in new applications.

The central characteristic of R&D is an appreciable element of novelty and of uncertainty. New knowledge, products or processes are sought. New knowledge involves the integration of newly acquired information into existing hypotheses, the formulation and testing of new hypotheses or the re-evaluation of existing observations.

An R&D project generally has three characteristics:

- a substantial element of uncertainty, novelty and innovation;
- a well-defined project design;
- a report on the procedures and results of the projects.

### Related scientific activities (RSA)

Those activities which complement and extend R&D by contributing to the generation, dissemination and application of scientific and technological knowledge.

### Intramural performance

Where the science and technology (S&T) activities are managed and carried out primarily by federal government employees they are classified as intramural S&T. Even where major components of the project are provided by outside agencies, such as computer services, laboratory construction, testing of prototype equipment, if the planning, supervision, reporting, and key operating functions are performed by federal personnel, then the activity is considered to be intramural. This also applies to S&T activities carried out by a department or agency on behalf of another federal department or agency on a cost recovery basis.

The intramural expenditures reported for scientific activities are those direct costs, including salaries, associated with scientific programs. These costs include that portion of a program's contribution to employee benefit plans (e.g. superannuation) which is applicable to the scientific personnel within the program.

Non-program ("indirect") costs, such as the value of services provided by other departments without charge and accommodation provided by the reporting program are to be excluded. Support services (i.e. administration, finance) provided by the reporting program, proportional to S&T expenditures should be included.

### **Extramural performance**

The management and conduct of an S&T activity is entrusted to a non-federal organization. The six extramural performance sectors used in surveying S&T expenditures by the federal government are:

#### **Business enterprise**

This sector is composed of business and government enterprises, including public utilities and government owned firms. Incorporated consultants providing scientific and engineering services are also included. Industrial research institutes located at Canadian universities are considered to be in the Higher education sector.

#### **Higher education**

This sector is composed of all universities, colleges of technology and other institutes of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of, or administered by, or associated with, the higher education establishments.

#### **Canadian non-profit institutions**

Charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits comprise this sector. Canadian non-profit institutions primarily serving or controlled by another sector should be included in that sector.

#### **Provincial and municipal governments**

Departments and agencies of these governments form this sector. Government enterprises, such as provincial utilities are included in the Business enterprise sector, and hospitals in the Canadian non-profit institutions.

#### **Foreign performers**

All foreign government agencies, foreign companies (including foreign subsidiaries of Canadian firms), international organizations, non resident foreign nationals and Canadians studying or teaching abroad, are included in this sector.

#### **Other performers**

This sector includes provincial research councils, and individuals or organizations in Canada not belonging to any of the above sectors.

#### **Type of payment**

##### **Contracts**

These are payments to organizations or individuals outside the federal government for the conduct of S&T by the recipient or to provide support for the federal government's in-house S&T programs.

## Grants and contributions

Awards to organizations or individuals for the conduct of S&T and intended to benefit the recipients rather than provide the program with goods, services or information.

## Research fellowships

Awards to individuals for advanced research training and experience. Awards intended primarily to support the education of the recipients are reported as education support.

## Socio-economic objectives

Socio-economic objectives allow departments to classify their S&T resource allocations according to the purpose for which the expenditure is intended. The objectives are listed on the questionnaire at the highest level of aggregation with sub-levels given for clarification of categories. In many cases, projects have multiple objectives and a department should assign its expenditures consistent with the stated objectives of the department. Care must be taken to avoid “double counting”.

The objectives are based on the Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets (NABS) produced by the Statistical Office of the European Communities (Eurostat).

- **Exploration and exploitation of the Earth**  
Scientific activities with objectives related to the exploration of the Earth’s crust and mantle, seas, oceans and atmosphere, and scientific activities on their exploitation. It also includes climatic and meteorological research, polar exploration and hydrology.
- **Infrastructure and general planning of land use**  
Scientific activities on infrastructure and land development, including research on the construction of buildings. More generally, it covers all scientific activities relating to the general planning of land-use. This includes scientific activities into protection against harmful effects in town and country planning but not scientific activities into other types of pollution.
- **Control and care of the environment**  
Covers scientific activities into the control of pollution, aimed at the identification and analysis of the sources of pollution and their causes, and all pollutants, including their dispersal in the environment and the effects on man, species (fauna, flora, microorganisms) and biosphere. Development of monitoring facilities for the measurement of all kinds of pollution is included. The same is valid for the elimination and prevention of all forms of pollution in all types of environment.
- **Protection and improvement of human health**  
Scientific activities aimed at protecting, promoting and restoring human health broadly interpreted to include health aspects of nutrition and food hygiene. It ranges from preventative medicine, including all aspects of medical and surgical treatment, both for individuals and groups, and the provision of hospital and home care, to social medicine and pediatric and geriatric research.
- **Production, distribution and rational utilization of energy**  
Covers scientific activities into the production, storage, transportation, distribution and rational use of all forms of energy. It also includes scientific activities on processes designed to increase the efficiency of energy production and distribution, and the study of energy conservation.

- **Agricultural production and technology**

Covers all scientific activities on the promotion of agriculture, forestry, fisheries and foodstuff production. It includes: scientific research on chemical fertilizers, biocides, biological pest control and the mechanization of agriculture; research on the impact of scientific activities in the field of developing food productivity and technology.

- **Industrial production and technology**

Covers scientific activities on the improvement of industrial production and technology. It includes scientific activities on industrial products and their manufacturing processes except where they form an integral part of the pursuit of other objectives (e.g. defence, space, energy, agriculture).

- **Social structures and relationships**

Scientific activities on social objectives, as analysed in particular by social and human sciences, which have no obvious connection with other objectives. This analysis includes quantitative, qualitative, organizational and forecasting aspects of social problems.

- **Exploration and exploitation of space**

All civil space scientific activities. Corresponding scientific activities in the defence field is classified in the Defence objective. (Although civil space research is not, in general, concerned with particular objectives, it frequently has a specific goal, such as the increase of general knowledge (e.g. astronomy), or relates to particular applications (e.g. telecommunications satellites).

- **Non-oriented research**

Basic activities motivated by scientific curiosity with the objective of increasing scientific knowledge. It also includes funding used to support postgraduate studies and fellowships.

- **Other civil research**

Civil scientific activities which cannot (yet) be classified to a particular objective.

- **Defence**

Covers scientific activities for military purposes. It also includes basic research and nuclear and space research financed by ministries of defence. Civil scientific activities financed by ministries of defence, for example, in the fields of meteorology, telecommunications and health, should be classified in the relevant objectives.

## Personnel

Intramural expenditure data should be supported by data on the personnel devoted to scientific activities by all the employees engaged in these activities.

## Scientific and professional

People in jobs that require at least one academic degree or nationally recognized professional qualification, as well as those with equivalent experience.

## Technical

People in jobs that require specialized vocational or technical training beyond the secondary level (e.g., community colleges and technical institutes) as well as those with experience equivalent to this training.

## **Other**

Clerical, secretarial, administrative, operational and other support personnel.

In regard to personnel resources there are two caveats:

- where the S&T activities are a part of the program being reported only the auxiliary staff relevant to the S&T activities are reported on a prorated basis;
- whenever financial and administrative support is provided from another program that support is allocated to the S&T resources for the program being reported.

## **Full-time equivalent (FTE)**

A measure of the time actually devoted to the conduct of scientific activities. An employee who is engaged in scientific activities for a half a year has a full-time equivalence of 0.5. Personnel data reported should be consistent with expenditure data.

## **Administration of extramural programs (AEP)**

AEP identifies the FTEs engaged in the administration of contracts and grants and contributions for scientific activities that are to be performed outside the federal government. These FTEs are broken down by the type of scientific activity supported, i.e., R&D or RSA.

## **Definitions specific to natural sciences and engineering**

The natural sciences and engineering (NSE) field consists of disciplines concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical, life and physical sciences.

## **Related scientific activities (RSA)**

The kinds of related scientific activities for the natural sciences are described below.

### **Scientific data collection**

The gathering, processing, collating and analyzing of data on natural phenomena. These data are normally the results of surveys, routine laboratory analyses or compilations of operating records.

Data collected as part of an existing or proposed R&D project are charged to research. Similarly, the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also to be considered to be a research activity. Examples of scientific data collection are: routine geological, hydrographic, oceanographic and topographic surveys; routine astronomical observations; maintenance of meteorological records; and wildlife and fisheries surveys.

### **Information services**

All work directed to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries, S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

### **Sub category under 'Information services'**

- **Museum services**

The collecting, cataloguing, and displaying of specimens of the natural world or of representations of natural phenomena. The activity involves a systematic attempt to preserve and display items from the natural world; in some ways it could be considered an extension of information services. The scientific activities of natural history museums, zoological and botanical gardens, aquaria, planetaria and nature reserves are included. Parks which are not primarily restricted reserves for certain fauna or flora are excluded. In all cases the costs of providing entertainment and recreation to visitors should be excluded (e.g. restaurants, children's gardens and museums).

When a museum also covers not only natural history but also aspects of human cultural activities, the museum's resources should be appropriated between the natural and social sciences. However, museums of science and technology, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.

### **Special services and studies**

Work directed towards the establishment of national and provincial standards for materials, devices, products and processes; the calibration of secondary standards; non-routine quality testing; feasibility studies and demonstration projects.

### **Sub categories under 'Special services and studies' include:**

- **Testing and standardization**

Work directed towards the establishment of national and international standards for materials, devices, products and processes, the calibration of secondary standards and non-routine quality testing. The development of new measures for standards, or of new methods of measuring or testing, is R&D and should be reported as such. Exclude routine testing such as monitoring radioactivity levels or soil tests before construction.

- **Feasibility studies**

Technical investigations of proposed engineering projects to provide additional information required to reach decisions on implementation. Besides feasibility studies per se, the related activity of demonstration projects are to be included. Demonstration projects involve the operation of scaled-up versions of a facility or process, or data on factors such as costs, operational characteristics, market demand and public acceptance. Projects called 'demonstration projects' but which conform to the definition of R&D should be considered R&D. Once a facility or process is operated primarily to provide a service or to gain revenue, rather than as a demonstration, it should no longer be included with feasibility studies. In all demonstration projects, only the net costs should be considered.

### **Education support**

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the natural sciences. General operating or capital grants are excluded. The activity includes the support of foreign students in their studies of the natural sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships.

## Definitions specific to Social sciences and humanities

The social sciences and humanities (SSH) field embraces all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, business administration and commerce, information and knowledge management, criminology, demography, economics, geography, history, languages, literature and linguistics, law, library science, philosophy, political science, psychology, religious studies, social work, sociology, and urban and regional studies.

## Related scientific activities (RSA)

The kinds of related scientific activities for the social sciences and humanities are described below.

### General purpose data collection

The routine gathering, processing, collating, analysis and publication of information on human phenomena using surveys, regular and special investigations and compilations of existing records. It excludes data collected primarily for internal administrative purposes (e.g., departmental personnel statistics) as well as the collection of data as part of an R&D project.

Data collected as part of an existing or proposed research project are charged to research. Similarly the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also considered a research activity. The institutions involved are generally the statistical bureaus of Canadian governments and the statistical sections of departments and agencies. If there are units whose principal activity is R&D, their costs and personnel should be assigned to R&D; specialized libraries with separate budgets should be assigned to information services.

### Information services

All work related to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries, S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

### Sub category under 'Information services' include:

- **Museum services**

The collecting, cataloguing, and displaying of specimens and representations relating to human history, social organization and creations. The activity involves a systematic attempt to preserve and display the works of human beings and to provide information on their works, history, and nature. The scientific activities of historical museums, archaeological displays, and art galleries are included. In all cases, the costs of providing entertainment and recreation to visitors should be excluded (e.g. restaurants, children's gardens and museums).

When a museum also covers aspects of natural history, the museum's operation should be divided between the social and natural sciences. However, museums of science and technology, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.



### **Special services and studies**

Systematic investigations carried out in order to provide information needed for planning or policy formulation. Demonstration projects are also included.

The work is usually carried out by specialized units in some government departments, by consultants, by royal commissions, and by task forces. The activity is similar to R&D since it may require innovative analyses and a high degree of scientific ability. However, such studies are not intended to acquire new knowledge but to provide specific answers to specific problems (generally immediate, localized and perhaps temporary). The day-to-day operations of units concerned with departmental planning, organization or management are not normally included (i.e. administrative records kept by departments of education) but special projects may be relevant.

#### **Sub categories under 'Special services and studies' include:**

- **Economic and feasibility studies**

Investigations of the socio-economic characteristics and implications of specific situations. Such studies are generally limited to a specific problem and involve the application of established social science techniques and methodologies.

- **Operations and policy studies**

The analysis and assessment of departmental programs, policies and operations, the activities of units concerned with the continuing analysis and monitoring of external phenomena (e.g., foreign economic statistics, defence and security information) as well as studies to provide an information base for policy development. The work is carried out by specialized units in some government departments, by consultants, by royal commissions and by task forces.

### **Education support**

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the social sciences. General purpose grants to educational institutions are excluded. The activity includes the support of foreign students in their studies of the social sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships.