

Table 8: S2 Male Top Ten Topics (Rank Order)

Topic Item		Mean	SD
A34	How it feels to be weightless in space	3.48	0.88
A32	Biological and chemical weapons and what they do to the human body	3.41	0.90
A31	Explosive chemicals	3.37	1.01
D13	Why we dream while we are sleeping, and what the dreams may mean	3.20	1.03
A33	The effect of strong electric shocks and lightning on the human body	3.15	0.95
A22	Black holes, supernovas and other spectacular objects in outer space	3.09	1.09
A30	How the atom bomb functions	3.08	1.15
D08	The possibility of life outside earth	3.07	1.06
D07	How computers work	3.02	1.05
A27	Brutal, dangerous and threatening animals	3.01	1.10

Table 9: S2 Male Bottom Ten Topics (Rank Order).

Topic Item		Mean	SD
D01	How crude oil is converted to other materials, like plastics and textiles	1.91	0.98
I26	Detergents, soaps and how they work	1.87	0.93
A17	Atoms and molecules	1.87	1.04
A05	Clouds, rain and the weather	1.84	0.93
A39	The ability of lotions and creams to keep the skin young	1.79	0.92
I25	Plants in my area	1.79	0.9
I17	How to improve the harvest in gardens and farms	1.73	0.93
I19	Organic and ecological farming without use of pesticides and artificial fertilizers	1.69	0.86
A15	How plants grow and reproduce	1.66	0.81
I01	Symmetries and patterns in leaves and flowers	1.47	0.79

Table 10: S2 Cohorts Female Top Ten Topics (Rank Order).

Topic Item		Mean	SD
A13	Why we dream while we are sleeping, and what the dreams may mean	3.19	1.03
I08	Cancer, what we know and how we can treat it	3.08	1.05
A34	How it feels to be weightless in space	2.98	1.06
A40	How to exercise to keep the body fit and strong	2.86	1.06
I10	How to perform first-aid and use basic medical equipment	2.85	1.13
D14	Ghosts and witches, and whether they may exist	2.84	1.16
A37	What to eat to keep healthy and fit	2.82	1.11
A41	Plastic surgery and cosmetic surgery	2.80	1.15
A38	Eating disorders like anorexia or bulimia	2.78	0.99
I12	How alcohol and tobacco might affect the body	2.78	0.98

Table 11: S2 Cohorts Female Bottom Ten Topics (Rank Order).

Topic Item		Mean	SD
D02	Optical instruments and how they work (telescope, camera, microscope, etc.)	1.82	0.93
A15	How plants grow and reproduce	1.81	0.98
I06	How technology helps us to handle waste, garbage and sewage	1.74	0.95
A17	Atoms and molecules	1.73	0.93
A30	How the atom bomb functions	1.69	0.9
I37	Famous scientists and their lives	1.69	0.91
A47	How petrol and diesel engines work	1.68	0.9
I01	Symmetries and patterns in leaves and flowers	1.65	0.86
D01	How crude oil is converted to other materials, like plastics and textiles	1.53	0.84
A48	How a nuclear power plant functions	1.52	0.81

Table 12: Percentage of S2 cohort choosing each element per item in Section B ‘Me and the environmental challenges’.

Statement		Overall %				Male %				Female %			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
1	Threats to the environment are not my business	45.0	28.7	15.8	10.5	50.0	25.6	12.8	11.6	40.0	31.8	18.8	9.4
2	Environmental problems make the future of the world look bleak and hopeless	14.8	28.4	33.1	23.7	12.9	29.4	31.8	25.9	16.7	27.4	34.5	21.4
3	Environmental problems are exaggerated	24.1	37.1	24.1	14.7	24.7	34.1	25.9	15.3	23.5	40.0	22.4	14.1
4	Science and technology can solve all environmental problems	36.5	38.3	18.6	6.6	36.9	29.8	22.6	10.7	36.1	47.0	14.5	2.4
5	I am willing to have environmental problems solved even if this means sacrificing many goods	29.4	30.6	24.1	15.9	29.4	31.8	23.5	15.3	29.4	29.4	24.7	16.5
6	I can personally influence what happens with the environment	23.5	42.4	22.9	11.2	18.8	41.2	24.7	15.3	28.2	43.5	21.2	7.1
7	We can still find solutions to our environmental problems	9.4	14.1	41.2	35.3	9.4	9.4	40.0	41.2	9.4	18.8	42.4	29.4
8	People worry too much about environmental problems	17.2	29.0	27.8	26.0	18.8	32.9	24.7	23.5	15.5	25.0	31.0	28.6
9	Environmental problems can be solved without big changes in our way of living	18.8	26.5	33.5	21.2	17.6	29.4	30.6	22.4	20.0	23.5	36.5	20.0
10	People should care more about protection of the environment	8.8	19.9	33.3	38.0	7.0	15.1	37.2	40.7	10.6	24.7	29.4	35.3
11	It is the responsibility of the rich countries to solve the environmental problems of the world	35.7	26.9	22.2	15.2	36.0	25.6	25.6	12.8	35.3	28.2	18.8	17.6
12	I think each of us can make a significant contribution to environmental protection	11.2	22.4	42.9	23.5	9.4	22.4	43.5	24.7	12.9	22.4	42.4	22.4
13	Environmental problems should be left to the experts	27.6	38.2	21.8	12.4	27.1	42.4	20.0	10.6	28.2	34.1	23.5	14.1
14	I am optimistic about the future	11.4	21.1	44.0	23.5	10.7	21.4	36.9	31.0	12.2	20.7	51.2	15.9
15	Animals should have the same right to life as people	13.0	19.5	23.7	43.8	12.9	25.9	22.4	38.8	13.1	13.1	25.0	48.8
16	It is right to use animals in medical experiments if this can save human lives	35.7	22.6	26.8	14.9	24.7	20.0	34.1	21.2	47.0	25.3	19.3	8.4
17	Nearly all human activity is damaging for the environment	28.8	40.6	20.0	10.6	29.4	36.5	22.4	11.8	28.2	44.7	17.6	9.4
18	The natural world is sacred and should be left in peace	14.8	20.7	36.7	27.8	15.3	17.6	32.9	34.1	14.3	23.8	40.5	21.4

Table 13: Percentage of S2 cohort choosing each element per item in Section C ‘My opinion about Science and Technology’.

Statement		Overall %				Male %				Female %			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
1	Science and technology are important for society	8.2	13.5	37.4	40.9	5.8	9.3	33.7	51.2	10.6	17.6	41.2	30.6
2	Science and technology will find cures to diseases such as HIV/AIDS, cancer, etc.	1.2	14.0	41.5	43.3	2.3	14.0	40.7	43.0	0.0	14.1	42.4	43.5
3	Thanks to science and technology, there will be greater opportunities for future generations	3.5	16.4	38.6	41.5	4.7	9.3	32.6	53.5	2.4	23.5	44.7	29.4
4	Science and technology make our lives healthier, easier and more comfortable	9.4	21.6	37.4	31.6	9.3	16.3	37.2	37.2	9.4	27.1	37.6	25.9
5	New technologies will make work more interesting	7.1	10.7	39.1	43.2	5.9	10.6	28.2	55.3	8.3	10.7	50.0	31.0
6	The benefits of science are greater than the harmful effects it could have	10.2	31.1	40.1	18.6	13.1	33.3	33.3	20.2	7.2	28.9	47.0	16.9
7	Science and technology will help to eradicate poverty and famine in the world	20.6	34.1	31.8	13.5	19.8	29.1	36.0	15.1	21.4	39.3	27.4	11.9
8	Science and technology can solve nearly all problems	28.7	37.4	28.1	5.8	25.6	32.6	33.7	8.1	31.8	42.4	22.4	3.5
9	Science and technology are helping the poor	23.4	42.5	29.9	4.2	19.0	38.1	35.7	7.1	27.7	47.0	24.1	1.2
10	Science and technology are the cause of the environmental problems	15.8	40.4	31.0	12.9	16.3	37.2	26.7	19.8	15.3	43.5	35.3	5.9
11	A country needs science and technology to become developed	13.5	21.2	37.6	27.6	10.5	19.8	33.7	36.0	16.7	22.6	41.7	19.0
12	Science and technology benefit mainly the developed countries	12.7	23.6	38.2	25.5	11.9	19.0	44.0	25.0	13.6	28.4	32.1	25.9
13	Scientists follow the scientific method that always leads them to correct answers	23.1	45.6	25.4	5.9	21.2	49.4	23.5	5.9	25.0	41.7	27.4	6.0
14	We should always trust what scientists have to say	47.1	33.5	15.3	4.1	48.8	29.1	16.3	5.8	45.2	38.1	14.3	2.4
15	Scientists are neutral and objective	21.9	39.6	32.5	5.9	24.7	30.6	36.5	8.2	19.0	48.8	28.6	3.6
16	Scientific theories develop and change all the time	9.6	12.6	47.9	29.9	8.4	13.3	45.8	32.5	10.7	11.9	50.0	27.4

Table 14: Percentage of S2 cohort choosing each element per item in Section E ‘My Science Classes’ and Section L ‘How I feel about Science in School’

	Statement	Overall %				Male %				Female %			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
E01	School science is a difficult subject	14.7	34.7	35.9	14.7	18.6	34.9	37.2	9.3	10.7	34.5	34.5	20.2
E02	School science is interesting	18.2	19.4	38.8	23.5	12.8	14.0	43.0	30.2	23.8	25.0	34.5	16.7
E03	School science is rather easy for me to learn	17.6	39.4	30.0	12.9	12.8	39.5	31.4	16.3	22.6	39.3	28.6	9.5
E04	School science has opened my eyes to new and exciting jobs	27.6	27.6	26.5	18.2	20.9	30.2	25.6	23.3	34.5	25.0	27.4	13.1
E05	I like school science better than most other subjects	47.6	29.4	14.7	8.2	45.3	23.3	20.9	10.5	50.0	35.7	8.3	6.0
E06	I think everybody should learn science at school	29.4	17.1	30.6	22.9	24.4	17.4	32.6	25.6	34.5	16.7	28.6	20.2
E07	The things that I learn in science at school will be helpful in my everyday life	18.8	24.1	32.9	24.1	14.0	30.2	32.6	23.3	23.8	17.9	33.3	25.0
E08	I think that the science I learn at school will improve my career chances	15.3	16.5	38.2	30.0	10.5	15.1	40.7	33.7	20.2	17.9	35.7	26.2
E09	School science has made me more critical and sceptical	29.6	36.7	24.9	8.9	25.9	36.5	28.2	9.4	33.3	36.9	21.4	8.3
E10	School science has increased my curiosity about things we cannot yet explain	22.9	15.7	30.1	31.3	15.7	14.5	30.1	39.8	30.1	16.9	30.1	22.9
E11	School science has increased my appreciation of nature	26.2	28.6	29.2	16.1	23.5	31.8	29.4	15.3	28.9	25.3	28.9	16.9
E12	School science has shown me the importance of science for our way of living	21.4	27.4	35.7	15.5	14.3	23.8	45.2	16.7	28.6	31.0	26.2	14.3
E13	School science has taught me how to take better care of my health	17.6	21.8	36.5	24.1	19.8	20.9	38.4	20.9	15.5	22.6	34.5	27.4
E14	I would like to become a scientist	68.2	14.1	10.6	7.1	64.0	15.1	12.8	8.1	72.6	13.1	8.3	6.0
E15	would like to have as much science as possible at school	45.3	30.6	16.5	7.6	41.9	31.4	19.8	7.0	48.8	29.8	13.1	8.3
E16	I would like to get a job in technology	46.2	18.9	20.1	14.8	21.2	18.8	34.1	25.9	71.4	19.0	6.0	3.6
L01	In Science, I would rather learn a lot about few topics than a little about a lot of different topics.	14.6	24.0	24.0	37.4	11.6	23.3	24.4	40.7	17.6	24.7	23.5	34.1
L02	Doing practical and experimental work helps me to understand science topics.	7.1	12.9	36.5	43.5	2.4	10.6	34.1	52.9	11.8	15.3	38.8	34.1
L03	Doing practical and experimental work with good, modern apparatus makes me want to study science.	14.0	22.8	31.6	31.6	12.8	19.8	30.2	37.2	15.3	25.9	32.9	25.9
L04	My School Science rooms are exciting places in which to work	30.6	38.2	20.6	10.6	30.2	38.4	22.1	9.3	31.0	38.1	19.0	11.9
L05	If practical content of the course were increased it would give me grater enjoyment of Science.	12.3	26.3	31.6	29.8	11.6	25.6	25.6	37.2	12.9	27.1	37.6	22.4
L06	I found Primary Science interesting	38.2	31.8	18.2	11.8	36.5	34.1	17.6	11.8	40.0	29.4	18.8	11.8
L07	Science at Primary School prepared me well for Science classes in Secondary School	54.4	22.5	16.6	6.5	52.9	23.5	16.5	7.1	56.0	21.4	16.7	6.0
L08	I find Science in Secondary School more interesting than Science in Primary School.	18.1	9.9	19.9	52.0	11.6	9.3	15.1	64.0	24.7	10.6	24.7	40.0

Review of S2 Responses to Section K ‘My Future Job’.

In this section pupils are asked how strongly they rate the importance of each of 26 features concerning their future occupation. Like in the ROSE survey Scotland this section can be categorised under various headings. Table 20 shows the category headings and the questions from section K with which they are associated

Table 15: Category headings and questions from section K with which they are associated.

Nature of issue	Questions
Work nature and context	B3,B4,B5,B6,B7,B19
Creativity at work	B8,B10,B11
Personal satisfaction from the job	B9,B13,B15,B16,B25
Relationship with other people at work	B1,B2,B14,B21,B24,B26
Work life balance	B12,B17,B18,B23
Fame and fortune	B22 and B20

Table 16 shows the summary data for the S2 overall, male and female responses to section K.

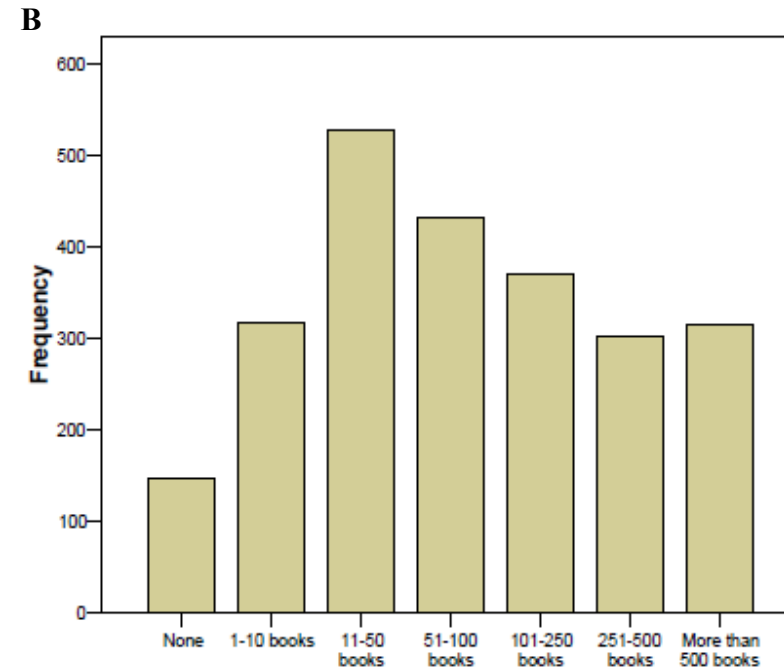
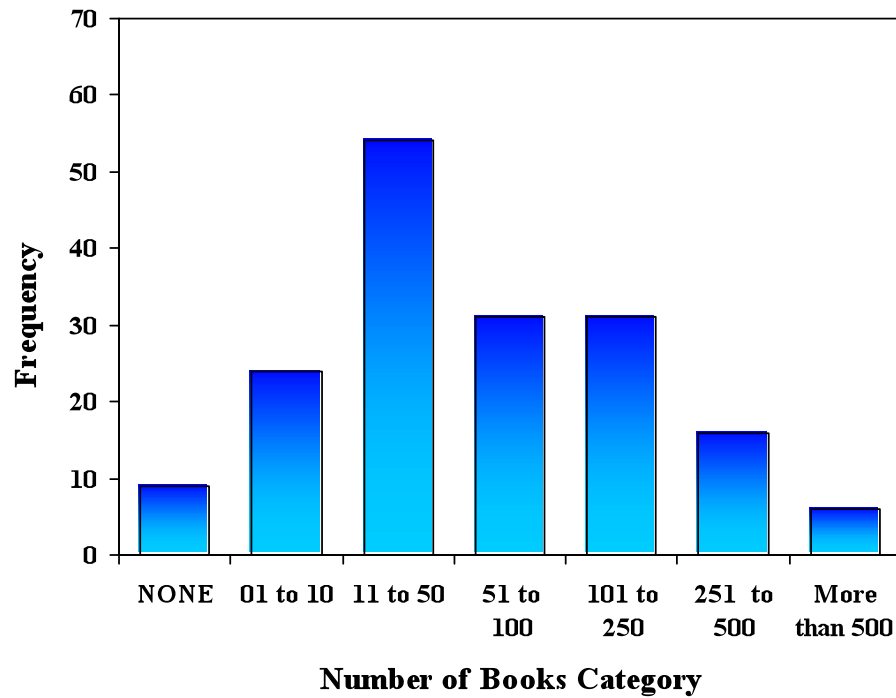
Item Code	Statement	Overall	SD	Male	SD	Female	SD
WORK NATURE & CONTEXT							
F03	Working with animals	2.35	1.15	2.12	1.12	2.58	1.14
F04	Working in the area of environmental protection	1.98	1.00	1.95	0.97	2.00	1.04
F05	Working with something easy and simple	2.35	1.04	2.21	1.04	2.49	1.02
F06	Building or repairing objects using my hands	2.23	1.09	2.62	1.08	1.85	0.97
F07	Working with machines or tools	3.88	2.37	2.86	1.06	1.88	0.98
	Working at a place where something new and exciting happens						

Table 16: Range of Responses to Section K of the S2 pupil Survey 2007.

Table 17: Percentage of S2 cohort choosing each element per item in Section K ‘My Future Job’

Statement		Overall %				Male %				Female %			
		Not Inter			Very Inter	Not Inter			Very Inter	Not Inter			Very Inter
		1	2	3	4	1	2	3	4	1	2	3	4
1	Working with people rather than things	10.6	15.3	37.1	37.1	14.0	22.1	39.5	24.4	7.1	8.3	34.5	50.0
2	Helping other people	9.4	18.7	33.3	38.6	10.5	29.1	32.6	27.9	8.2	8.2	34.1	49.4
3	Working with animals	28.6	25.6	24.4	21.4	34.9	24.1	27.7	13.3	22.4	27.1	21.2	29.4
4	Working in the area of environmental protection	38.2	35.9	14.7	11.2	39.5	34.9	16.3	9.3	36.9	36.9	13.1	13.1
5	Working with something easy and simple	24.1	31.8	27.6	16.5	29.4	30.6	27.1	12.9	18.8	32.9	28.2	20.0
6	Building or repairing objects using my hands	32.7	28.7	21.1	17.5	18.6	27.9	26.7	26.7	47.1	29.4	15.3	8.2
7	Working with machines or tools	29.8	25.1	22.8	22.2	14.0	22.1	27.9	36.0	45.9	28.2	17.6	8.2
8	Working artistically and creatively in art	31.2	23.5	19.4	25.9	35.3	28.2	17.6	18.8	27.1	18.8	21.2	32.9
9	Using my talents and abilities	7.6	9.9	31.6	50.9	3.5	9.3	33.7	53.5	11.8	10.6	29.4	48.2
10	Making, designing or inventing something	23.4	17.5	28.7	30.4	19.8	15.1	30.2	34.9	27.1	20.0	27.1	25.9
11	Coming up with new ideas	13.5	17.0	35.7	33.9	5.8	19.8	37.2	37.2	21.2	14.1	34.1	30.6
12	Having lots of time for my friends	6.4	17.0	33.3	43.3	5.8	22.1	36.0	36.0	7.1	11.8	30.6	50.6
13	Making my own decisions	4.7	9.9	32.7	52.6	4.7	10.5	33.7	51.2	4.7	9.4	31.8	54.1
14	Working independently of other people	17.2	31.4	30.2	21.3	20.0	30.6	36.5	12.9	14.3	32.1	23.8	29.8
15	Working with something I find important and meaningful	7.1	12.9	35.9	44.1	5.9	16.5	38.8	38.8	8.2	9.4	32.9	49.4
16	Working with something that fits my attitudes and values	8.9	8.9	33.9	48.2	8.3	10.7	36.9	44.0	9.5	7.1	31.0	52.4
17	Having lots of time for my family	5.3	12.9	38.6	43.3	3.5	10.5	43.0	43.0	7.1	15.3	34.1	43.5
18	Working with something that involves a lot of travelling	21.6	33.3	23.4	21.6	17.4	31.4	27.9	23.3	25.9	35.3	18.8	20.0
19	Working at a place where something new and exciting happens frequently	6.4	16.4	33.3	43.9	4.7	18.6	33.7	43.0	8.2	14.1	32.9	44.7
20	Earning lots of money	5.3	5.3	22.8	66.7	5.8	2.3	24.4	67.4	4.7	8.2	21.2	65.9
21	Controlling other people	19.8	21.6	36.5	22.2	18.1	19.3	39.8	22.9	21.4	23.8	33.3	21.4
22	Becoming famous	18.2	26.5	23.5	31.8	14.0	32.6	23.3	30.2	22.6	20.2	23.8	33.3
23	Having lots of time for my interests, hobbies and activities	3.5	15.3	29.4	51.8	1.2	12.9	30.6	55.3	5.9	17.6	28.2	48.2
24	Becoming 'the boss' at my job	12.3	25.1	24.6	38.0	9.3	23.3	26.7	40.7	15.3	27.1	22.4	35.3
25	Developing or improving my knowledge and abilities	9.4	9.9	34.5	46.2	8.1	4.7	36.0	51.2	10.6	15.3	32.9	41.2
26	Working as part of a team with many people around me	7.6	9.4	38.0	45.0	8.1	7.0	39.5	45.3	7.1	11.8	36.5	44.7

Figure 1: Comparison of ‘how many books are in the home’ between the XHS pupil survey and the Scottish ROSE survey.



Legend: Figure 1 A corresponds to the XHS S2 pupil survey data. Figure 1B corresponds to the Scottish ROSE survey data.

It is interesting to note that the distribution of the number of books reported in the XHS S2 survey follows a similar shape to that of the Scottish ROSE survey data in that the 11 to 50 book category has the highest frequency.