Science and Mathematics Across the Curriculum
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	Major	Minor	Total	None	Total
Core	15	14	29	8	37
CTL	1	12	13	56	69
EA	1	15	16	20	36
ES	50	4	54	1	55
EWS	24	14	38	43	81
IA	22	22	44	15	59
SI	48	0	48	0	48
SPBC	8	18	26	19	45
TAC	1	0	1	0	1
TRI		7	7	1	8
	170	**106**	**276**	**163**	**439**

%Major	%Minor	Total %	%None
40.54%	37.84%	78.38%	21.62%
1.45%	17.39%	18.84%	81.16%
2.78%	41.67%	44.44%	55.56%
90.91%	7.27%	98.18%	1.82%
29.63%	17.28%	46.91%	53.09%
37.29%	37.29%	74.58%	25.42%
100.00%	0.00%	100.00%	0.00%
17.78%	40.00%	57.78%	42.22%
100.00%	0.00%	100.00%	0.00%
0.00%	87.50%	87.50%	12.50%
38.72%	**24.15%**	**62.87%**	**37.13%**

In addition to the major disciplines of the natural sciences (biology, chemistry, physics, geology, and mathematics), faculty respondents documented a wide base of sub-disciplines and skills in the area of science and mathematics.

Sub-Disciplines: Glaze chemistry, Computer science, Geometry, Trigonometry, Physical chemistry, Ecology, Evolution, Earth science, Biological anthropology, Microbiology, Human biology, Anatomy, Physiology, Genetics, Immunology, Statistics, Exponential growth, Logarithms, Biology of fish, Quantum Mechanics, Vectors, Financial Analysis, Logic, Special Relativity, Organic Chemistry, Advanced Math (differential equations, linear algebra, multivariable calculus, set theory, real analysis, abstract algebra, Galois theory), Cosmology, Order of magnitude, Scale, Area and Volume, Music Theory, Economics, Multicultural mathematics, Tropical Cropping Systems, Soil Science, Agroecology, Agriculture, Forest ecology, Evolutionary ecology, Nutrient cycling, Hydrology, GIS, Oceanography, Snow physics, Avalanche science, Tropical biology, Plant biology, Vertebrate zoology, Probability, Nutrition, Forensics, Neurobiology, Discrete math, Geochemistry, Molecular biology, Cell biology, Developmental biology, Biochemistry, Astronomy, Ornithology.

Skills: Critical reading, Qualitative research methods, Quantitative research methods, Quantitative analysis, Scientific method, Experiments, Solve applied problems, Measurement, Calculations, Hypothesis formulation and testing, Growth modeling, Graphical analysis , Blood typing, Data analysis, Budgets, Technical writing, Scientific writing, Reading and interpreting tables and graphs, Analytical reasoning, Graphing, Design, Navigation and piloting, Computer programming, Instrumental analysis, Financial analysis, Mapping.

Teaching Practices: Interpreting and Critiquing research papers**,** Budget preparation**,** Workshops**,** Computer workshops: Excel, data software, programming software**,** Lectures**,** Labs**,** Experiments**,** Fieldwork**,** Analyses**,** Use of Calculators **,** Research projects**,** Scientific papers**,** Question framing**,** Making connections**,** Creative analysis: pop culture research**,** Hands on measuring and calculating**,** Drawing assignments**,** Project work**,** Real world problem solving**,** Scale model making**,** Historical graphing and statistics**,** Debates**,** Grant writing**,** Pattern making**,** Timelines**,** Field trips.

How might the question be more usefully posed?
It was clear that there were differences in what was considered science across the different planning units. SI and ES generally considered science to include hands-on activities (lab or fieldwork) that directly linked… while CTL and SPBC often included history of science. This should be discussed with the larger group on Monday and Tuesday.

Since the disciplines of math and science can be mutually exclusive, it would be more useful to report the data separately. One suggestion is to group math with quantitative reasoning, with some explanation about the relationship between them.

To aid faculty in identifying both symbols and relationships in their response, we recommend that one review document be titled Science and the other Mathematics/Quantitative and Symbolic Reasoning. This will reduce the number of NO responses in the "QR emphasis" by programs that identified a major or minor emphasis in Math/Science, and no emphasis in QR. The above listing of sub-disciplines and skills garnered from our reviews is evidence of the faculty's broad definition of QR. The term quantitative embodies quantity or counting, and further, Vaughn Foster-Grahler has determined that "All QR is mathematics but not all mathematics is QR. Combining these terms in one Review document is advised.

Further discussion established that: Mathematics is the discipline that deals with concepts such as quantity, structure, space, relationships and change. According to WA State, mathematics is a way of seeing patterns, forms, and relationships. The etymology of mathematics from the Greek is: (*máthēma*), *learning*, *study*, *science*, which appears to fit the faculty's recognition of QR in program curricula.

In order to increase the sharing of inventive pedagogy, we suggest rewording the question from, "If yes, how was Quantitative Reasoning included in your program" to, "If yes, describe how Quantitative Reasoning was pursued in a specific workshops, student project assignments, or other innovative program work."