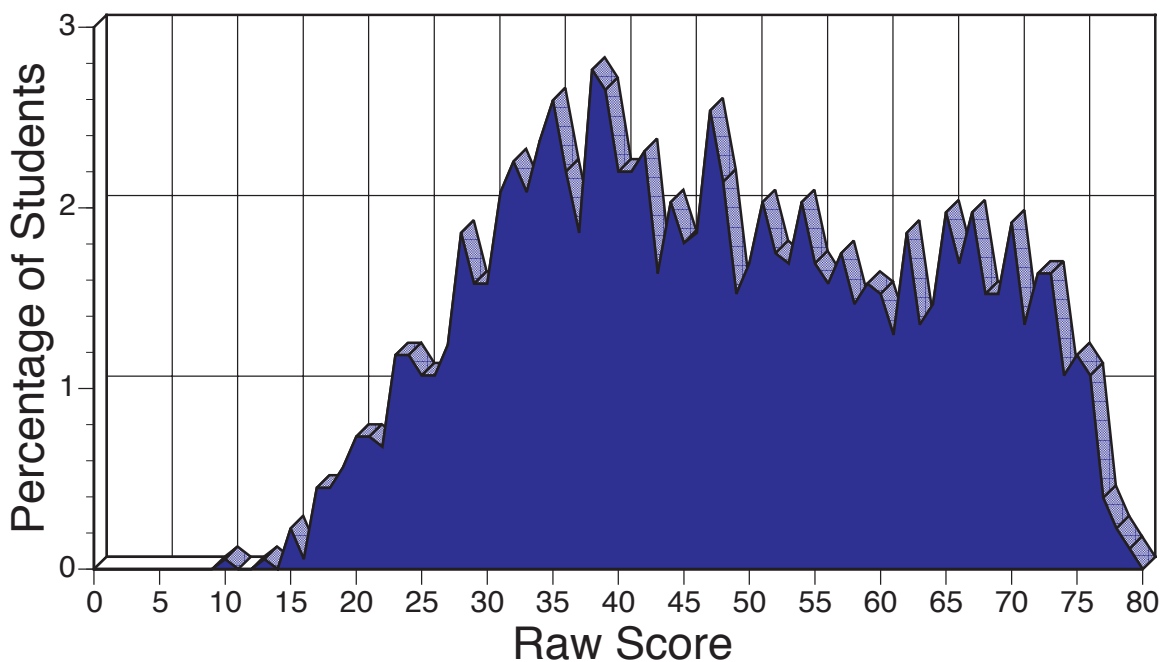


American Chemical Society Division of Chemical Education Composite Norms – High School Chemistry Form 2011

ScorePercentile	ScorePercentile	ScorePercentile
80 ----- 100	51 ----- 61	22 ----- 5
79 ----- 100	50 ----- 59	21 ----- 4
78 ----- 100	49 ----- 57	20 ----- 3
77 ----- 99	48 ----- 56	19 ----- 2
76 ----- 99	47 ----- 53	18 ----- 2
75 ----- 98	46 ----- 51	17 ----- 1
74 ----- 97	45 ----- 49	16 ----- 0
73 ----- 95	44 ----- 47	15 ----- 0
72 ----- 94	43 ----- 46	14 ----- 0
71 ----- 92	42 ----- 44	13 ----- 0
70 ----- 91	41 ----- 41	12 ----- 0
69 ----- 89	40 ----- 39	11 ----- 0
68 ----- 88	39 ----- 37	10 ----- 0
67 ----- 86	38 ----- 34	9 ----- 0
66 ----- 84	37 ----- 32	8 ----- 0
65 ----- 83	36 ----- 30	7 ----- 0
64 ----- 81	35 ----- 28	6 ----- 0
63 ----- 80	34 ----- 25	5 ----- 0
62 ----- 78	33 ----- 23	4 ----- 0
61 ----- 77	32 ----- 21	3 ----- 0
60 ----- 75	31 ----- 19	2 ----- 0
59 ----- 74	30 ----- 17	1 ----- 0
58 ----- 72	29 ----- 15	0 ----- 0
57 ----- 71	28 ----- 13	
56 ----- 69	27 ----- 12	Mean 47.58
55 ----- 68	26 ----- 10	Std. deviation 15.60
54 ----- 66	25 ----- 9	Median 46.1
53 ----- 64	24 ----- 8	KR-21 reliability 0.93
52 ----- 62	23 ----- 6	Std error/meas 4.06

Based on the scores of 1772 students in 22 high schools.



2011 High School Chemistry Item Statistics - Gray
Based on scores of 360 students at 7 schools

Item	Diff Index	Disc Index	% 1st wrong	% 2nd wrong	% 3rd wrong	Item	Diff Index	Disc Index	% 1st wrong	% 2nd wrong	% 3rd wrong
1	0.64	0.51	9.7	15.0	11.4	41	0.55	0.40	29.7	13.6	1.1
2	0.72	0.44	10.6	10.3	7.5	42	0.75	0.54	4.4	13.9	5.8
3	0.65	0.29	13.1	12.2	9.7	43	0.77	0.43	2.2	4.7	15.3
4	0.63	0.38	20.0	12.2	3.6	44	0.69	0.22	18.1	3.3	9.7
5	0.84	0.23	2.5	8.9	4.2	45	0.62	0.47	16.7	12.2	8.1
6	0.74	0.28	10.3	6.4	9.2	46	0.48	0.41	21.1	18.1	12.8
7	0.96	0.14	3.3	0.6	0.6	47	0.71	0.61	6.4	11.7	10.3
8	0.73	0.49	10.6	7.2	7.2	48	0.81	0.17	9.7	3.3	5.6
9	0.67	0.63	14.4	8.6	10.0	49	0.96	0.11	0.0	2.2	2.2
10	0.86	0.37	2.5	5.0	6.9	50	0.84	0.28	7.8	1.7	6.9
11	0.87	0.20	6.4	3.9	2.2	51	0.85	0.37	1.4	4.2	8.9
12	0.69	0.48	9.4	6.9	14.7	52	0.77	0.47	2.5	13.3	7.2
13	0.59	0.61	8.9	20.6	11.1	53	0.80	0.38	10.0	7.5	2.2
14	0.34	0.21	40.8	20.8	4.2	54	0.48	0.57	7.5	5.3	39.7
15	0.56	0.37	4.2	31.9	7.2	55	0.54	0.58	5.0	30.8	10.0
16	0.76	0.44	10.6	8.3	5.0	56	0.85	0.30	8.9	4.7	1.1
17	0.74	0.57	8.6	10.3	5.8	57	0.67	0.60	8.6	15.8	8.1
18	0.64	0.66	3.6	23.6	6.9	58	0.77	0.41	6.7	10.6	5.0
19	0.57	0.28	3.1	38.1	1.9	59	0.60	0.59	11.9	11.4	14.4
20	0.76	0.46	14.7	3.1	5.6	60	0.96	0.10	0.3	0.8	3.1
21	0.81	0.38	3.3	2.2	12.8	61	0.81	0.50	2.5	13.9	1.7
22	0.60	0.60	2.5	5.8	31.1	62	0.68	-0.01	12.5	7.2	11.1
23	0.80	0.41	15.6	1.9	2.2	63	0.61	0.62	14.7	11.1	13.1
24	0.66	0.57	3.9	11.7	17.2	64	0.67	0.70	6.7	13.6	12.8
25	0.61	0.43	17.5	10.3	10.6	65	0.83	0.36	12.8	1.7	2.8
26	0.71	0.49	14.7	6.4	7.2	66	0.58	0.70	23.1	13.3	4.2
27	0.85	0.27	2.2	1.9	10.8	67	0.56	0.64	9.7	5.8	28.6
28	0.74	0.49	5.6	10.6	9.7	68	0.43	0.74	7.8	13.1	34.4
29	0.51	0.63	6.7	27.8	14.2	69	0.62	0.46	25.6	4.4	7.5
30	0.40	0.40	26.1	24.7	6.9	70	0.56	0.47	11.9	23.6	7.8
31	0.54	0.60	21.9	7.8	15.8	71	0.52	0.52	29.7	13.3	3.1
32	0.76	0.51	6.9	12.2	4.2	72	0.83	0.32	1.4	3.6	11.4
33	0.81	0.29	3.9	5.0	8.3	73	0.84	0.27	4.2	11.1	0.8
34	0.78	0.48	4.2	9.4	7.2	74	0.79	0.51	8.3	8.9	2.8
35	0.46	0.64	4.7	34.4	12.2	75	0.85	0.41	4.4	6.9	2.5
36	0.72	0.49	8.1	5.6	13.9	76	0.55	0.46	25.3	12.5	4.4
37	0.65	0.39	14.2	5.0	15.3	77	0.51	0.51	22.8	15.3	9.4
38	0.59	0.59	15.3	13.6	11.7	78	0.79	0.46	3.9	6.7	8.1
39	0.64	0.36	33.3	0.8	1.4	79	0.46	0.48	23.6	16.7	13.1
40	0.61	0.56	13.1	14.2	11.1	80	0.56	0.39	13.9	7.5	20.6

2011 High School Chemistry Item Statistics - Yellow
Based on scores of 206 students at 9 schools

Item	Diff Index	Disc Index	% 1st wrong	% 2nd wrong	% 3rd wrong	Item	Diff Index	Disc Index	% 1st wrong	% 2nd wrong	% 3rd wrong
1	0.63	0.59	21.4	11.7	4.4	41	0.62	0.76	17.0	8.3	12.6
2	0.45	0.02	24.3	14.6	16.0	42	0.68	0.49	4.9	18.0	8.7
3	0.56	0.31	29.6	3.9	10.7	43	0.56	0.39	19.9	15.5	8.7
4	0.71	0.61	5.3	15.5	7.8	44	0.50	0.55	10.2	25.7	13.6
5	0.67	0.69	12.1	8.3	12.1	45	0.50	0.47	33.0	14.1	3.4
6	0.56	0.78	15.5	17.0	10.2	46	0.86	0.43	4.9	4.9	3.9
7	0.81	0.55	7.8	7.8	3.9	47	0.75	0.65	12.6	6.3	5.3
8	0.56	0.45	9.2	23.8	9.2	48	0.72	0.47	11.7	8.3	8.3
9	0.62	0.69	15.5	10.7	9.7	49	0.73	0.69	5.3	7.3	14.1
10	0.71	0.59	7.3	6.3	14.6	50	0.45	0.35	17.0	27.7	10.7
11	0.86	0.31	3.9	5.3	4.9	51	0.75	0.57	4.4	4.9	16.0
12	0.48	0.73	21.8	18.0	12.1	52	0.56	0.65	8.3	21.4	14.6
13	0.24	0.29	27.2	37.4	11.7	53	0.43	0.43	18.9	15.0	21.8
14	0.56	0.78	8.7	19.9	13.6	54	0.59	0.69	14.6	13.6	11.7
15	0.78	0.39	6.3	9.7	5.8	55	0.41	0.35	38.3	8.7	11.7
16	0.51	0.67	23.8	17.0	7.8	56	0.80	0.49	9.2	3.4	7.3
17	0.60	0.71	7.3	16.5	15.0	57	0.68	0.65	10.2	15.0	6.3
18	0.61	0.69	16.5	11.7	10.7	58	0.58	0.84	9.2	16.0	15.5
19	0.50	0.29	6.8	38.8	3.9	59	0.78	0.61	7.3	10.7	3.9
20	0.64	0.71	17.5	8.7	9.7	60	0.48	0.65	14.1	21.8	16.0
21	0.68	0.49	8.7	18.4	4.9	61	0.69	0.55	7.8	14.6	7.3
22	0.50	0.80	9.7	6.8	33.5	62	0.53	0.57	16.5	11.7	18.9
23	0.58	0.59	18.9	14.1	7.8	63	0.61	0.16	20.9	8.3	10.2
24	0.63	0.57	8.7	8.7	19.9	64	0.40	0.80	27.2	20.4	10.7
25	0.47	0.43	18.0	11.2	24.3	65	0.56	0.71	25.2	11.2	7.3
26	0.67	0.63	5.3	14.1	12.6	66	0.74	0.67	7.3	4.9	14.1
27	0.80	0.27	4.4	2.4	13.1	67	0.39	0.73	8.3	16.5	35.0
28	0.65	0.78	9.2	8.7	17.0	68	0.40	0.63	41.7	9.7	8.7
29	0.50	0.67	10.2	34.0	5.8	69	0.50	0.45	13.6	9.2	27.2
30	0.56	0.47	15.5	5.8	22.3	70	0.46	0.39	16.5	21.8	15.0
31	0.46	0.35	19.9	18.9	13.6	71	0.54	0.39	7.8	11.2	26.2
32	0.66	0.76	6.3	17.0	10.7	72	0.69	0.69	5.3	14.1	11.7
33	0.59	0.82	17.0	12.1	10.7	73	0.59	0.73	12.6	14.6	13.1
34	0.43	0.76	9.2	31.6	16.0	74	0.61	0.51	2.9	18.4	17.5
35	0.58	0.73	10.2	7.8	23.3	75	0.52	0.31	14.1	10.7	22.3
36	0.59	0.49	8.3	2.4	30.1	76	0.47	0.51	25.7	16.5	10.7
37	0.50	0.65	16.5	19.4	13.6	77	0.34	0.61	27.7	16.5	21.4
38	0.57	0.33	16.0	11.2	16.0	78	0.54	0.75	18.4	19.9	7.3
39	0.43	0.57	17.0	17.5	21.4	79	0.55	0.53	19.4	7.8	17.5
40	0.72	0.43	6.3	10.2	11.7	80	0.80	0.35	1.0	4.9	14.1

EXPLANATIONS

The difficulty index is the percentage of students who responded correctly to an item. The discrimination index measures the performance on the item of students who did well on the test overall relative to those who did poorly. The frequencies with which incorrect responses are chosen are expressed as percentages. For additional information, obtain *Writing Tests and Interpreting Test Statistics – A Practical Guide* from the ACS DivCHED Examinations Institute.

SCHOOLS SUPPLYING DATA FOR NORMS AND ITEM STATISTICS

<i>Amherst High School</i>	<i>Amherst, NY</i>
<i>Bellevue Christian High School</i>	<i>Clyde Hill, WA</i>
<i>Bridgeport High School</i>	<i>Bridgeport, WV</i>
<i>Jonathan Dayton High School</i>	<i>Springfield, NJ</i>
<i>Elkins High School</i>	<i>Elkins, WV</i>
<i>Germantown Academy</i>	<i>Fort Washington, PA</i>
<i>Hathaway-Brown School</i>	<i>Shaker Heights, OH</i>
<i>Hickman High School</i>	<i>Columbia, MO</i>
<i>John Burroughs School</i>	<i>St. Louis, MO</i>
<i>Lemon Bay High School</i>	<i>Englewood, FL</i>
<i>Morgantown High School</i>	<i>Morgantown, WV</i>
<i>Neenah High School</i>	<i>Neenah, WI</i>
<i>Parkway Central High School</i>	<i>Chesterfield, MO</i>
<i>Pine Crest School</i>	<i>Fort Lauderdale, FL</i>
<i>Ponderosa High School</i>	<i>Castlewood, CO</i>
<i>Ritchie County High School</i>	<i>Ellenboro, WV</i>
<i>St. John's Preparatory School</i>	<i>Collegeville, MN</i>
<i>Simsbury High School</i>	<i>Simsbury, CT</i>
<i>South Pasadena High School</i>	<i>South Pasadena, CA</i>
<i>The Thacher School</i>	<i>Ojai, CA</i>
<i>University High School</i>	<i>Morgantown, WV</i>
<i>Valencia High School</i>	<i>Placentia, CA</i>