

Appendix 3_91 Extended Assessment Science High Factor Analysis

Oregon 2008 Extended Assessment

High Grade Band SCIENCE Task Factor Analysis

Math Items Across all Tasks

N of Cases = 353

N of Items = 50

Inter-item Correlations

Summary Item Statistics

	Mean	Min	Max	Range	Maxi / Min	Var	N Items
Item Means	1.192	.499	1.768	1.269	3.545	.082	50
Item Variances	.880	.400	1.002	.602	2.503	.019	50
Inter-Item Correlations	.257	-.062	.580	.642	-9.348	.011	50

Alpha = .944

Standardized item alpha = .945

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.940
Bartlett's Test of Sphericity	Approx. Chi-Square	6344.751
	df	1225
	Sig.	.000

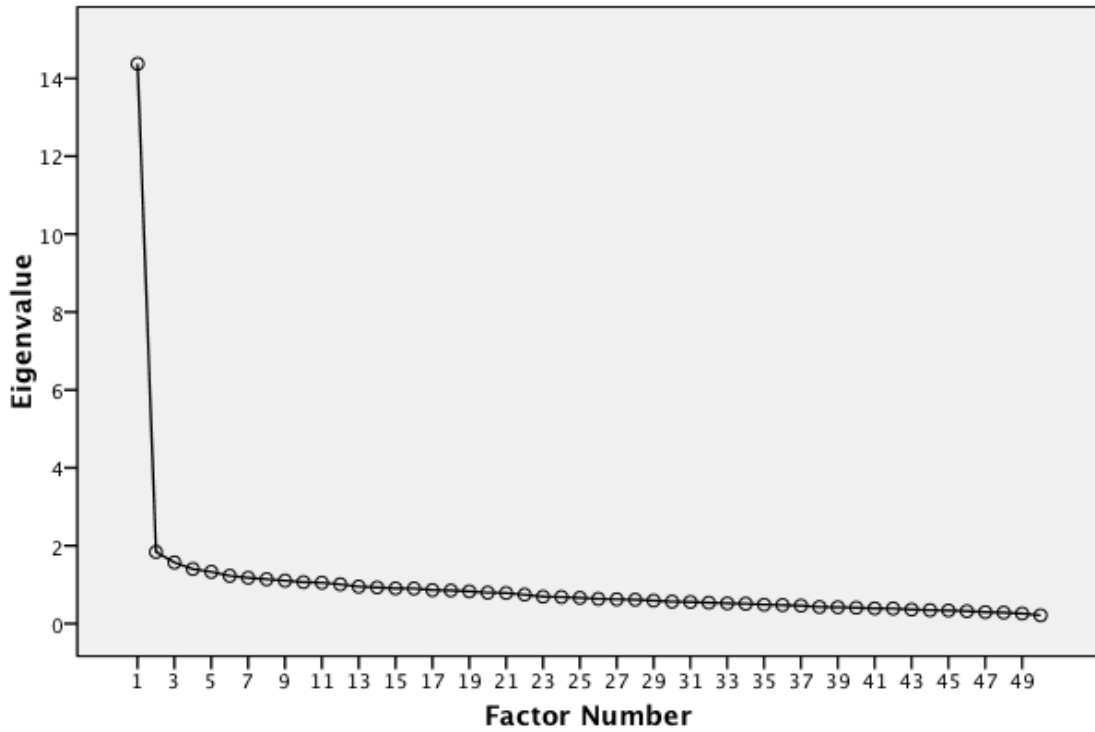
Factor Analysis

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	14.374	28.749	28.749	6.644	13.289	13.289	14.374	28.749
2	1.840	3.680	32.429	1.275	2.551	15.840	1.840	3.680	32.429
3	1.573	3.145	35.574	7.678	15.356	31.196	1.573	3.145	35.574
4	1.403	2.806	38.380	1.177	2.354	33.550	1.403	2.806	38.380
5	1.331	2.662	41.041	.718	1.435	34.986	1.331	2.662	41.041
6	1.229	2.458	43.499	.902	1.804	36.790	1.229	2.458	43.499
7	1.179	2.358	45.857	.746	1.491	38.281	1.179	2.358	45.857
8	1.141	2.281	48.138	.739	1.478	39.759	1.141	2.281	48.138
9	1.106	2.211	50.349	.696	1.391	41.150	1.106	2.211	50.349
10	1.068	2.137	52.486	.552	1.104	42.254	1.068	2.137	52.486
11	1.052	2.103	54.589	.596	1.192	43.446	1.052	2.103	54.589
12	1.010	2.020	56.609	.417	.833	44.280	1.010	2.020	56.609

Extraction Method: Maximum Likelihood.

Scree Plot



Goodness-of-fit Test

Chi-Square	df	Sig.
681.149	691	.598

Difference Between Model Fit for 1 Factor and Multiple Factor Models

chisq1	chisq2	chidiff	df1	df2	dfdifff	prob
1785.73	681.15	1104.58	1175	691	484	.00

Rotated Factor Matrix^a

	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
t2r01	.339	.146	.445	.130	.177	.007	.012	.164	.381	.017	.095	.091
t2r02	.212	.042	.313	.177	.114	.242	.133	-.029	.177	.036	-.014	.100
t2r03	.143	.152	.223	.215	.069	.183	.053	.077	.092	.113	.054	.091
t2r04	.197	.140	.295	.183	.093	.434	.054	.186	-.038	-.036	.028	.024
t2r05	.001	.177	.109	.115	.105	-.008	-.022	-.035	-.075	.040	-.163	.028
t3r01	.207	.094	.595	.091	.079	.244	.121	-.028	.040	.117	-.029	1.2E-5
t3r02	.220	.265	.512	.012	.094	.077	.059	.016	.127	.041	.074	.071
t3r03	.321	.311	.295	.065	.112	.135	.117	.070	.624	.054	.059	-.045
t3r04	.106	.591	.138	.119	.062	.083	.081	.060	.134	.035	.060	-.014
t3r05	.208	.460	.150	.113	.158	-.023	.117	.189	.154	-.018	.087	.146
t4r01	.072	.023	.072	.039	.479	.076	.007	-.011	.026	.077	-.019	-.014
t4r02	.089	.175	.179	.305	.366	.043	.098	.060	.161	-.006	.031	.102
t4r03	.328	.089	.458	.219	.253	.267	.113	.048	.248	-.056	-.013	-.054
t4r04	.219	.358	.081	.247	.016	.137	.002	.000	.124	.011	.123	.022
t4r05	.194	.388	.181	.233	-.029	.089	.026	.093	-.041	.008	.097	.080
t5r01	.243	.076	.185	.012	.183	.539	.027	.013	.138	.084	.149	.056
t5r02	.396	.169	.176	.208	.044	.214	.078	.056	.340	.032	.169	.249
t5r03	.074	.089	.116	.406	.021	.070	.061	.119	-.038	.049	.054	.081
t5r04	.294	.346	.126	.098	.216	.056	.086	.117	.007	-.046	.082	.024
t5r05	.354	.263	.178	.083	.054	.185	.196	.043	-.008	.054	.035	.387
t6r01	.182	.270	.132	.319	-.053	.256	.061	.135	.052	.131	.064	.134
t6r02	.063	.128	.130	.086	.139	-.030	.089	.100	-.022	.014	.033	.035
t6r03	.287	.143	.005	.180	.023	.095	.076	.789	.056	.037	.106	.030
t6r04	.306	.152	.114	.074	.150	.111	-.002	.184	.021	.097	.199	.168
t6r05	.183	.063	.132	.143	.144	.063	.048	.041	.039	.945	.029	.022
t7r01	.246	.168	.117	.218	.139	.091	.050	.240	.167	.026	.189	-.088
t7r02	.398	.397	.202	-.018	.032	.200	-.032	.106	.061	.046	-.021	.017
t7r03	.283	.175	.152	.331	.055	.019	.134	.092	.011	.128	-.016	.044
t7r04	.345	.171	.097	.104	.264	.055	.169	.166	.136	.078	.003	.164
t7r05	.542	.157	.254	.169	.169	.127	.212	.082	.082	.092	.042	.027

t8r01	.389	.242	.120	.054	.304	.259	.131	.047	.022	.016	.098	-.207
t8r02	.375	.101	.158	.304	.028	.216	-.027	.008	.254	.110	.060	.048
t8r03	.273	.172	.231	.098	.092	.072	.886	.089	.084	.052	.112	.052
t8r04	.383	.230	.150	.143	.287	.184	.335	.130	.104	.045	.149	.221
t8r05	.484	.062	.312	.065	.283	.091	.128	.193	.011	.072	.117	.077
t9r01	.253	.288	.110	.085	.009	.131	.103	.114	.045	.039	.784	.043
t9r02	.589	.187	.101	.218	-.105	.161	.036	.111	.050	.022	.099	.007
t9r03	.608	.263	.119	.116	5.9E-5	.092	.060	.141	.109	.099	.078	.065
t9r04	.263	.303	-.095	.175	.169	.029	.126	-.019	.117	.084	.040	.024
t9r05	.566	.001	.029	.126	.157	.174	.150	.052	.155	.032	.053	.254
t10r01	.234	.185	-.011	.351	.060	-.008	.016	.105	.071	-.076	.143	.098
t10r02	.030	.045	.003	.449	.221	.029	-.011	.012	.082	.083	-.112	-.130
t10r03	.103	.298	-.051	.172	.114	.067	.107	.095	.035	.168	.210	.028
t10r04	.484	.231	.306	.139	.079	.076	.072	.248	.056	.130	.073	.005
t10r05	.387	.182	.160	.129	.359	.220	.071	.115	.041	-.004	.033	.178
t11r01	.518	.272	.167	.115	.238	.019	.079	-.028	.205	.068	.145	.062
t11r02	.580	.046	.332	.211	.258	.075	.065	.080	-.002	.038	.131	-.147
t11r03	.371	.174	.285	.141	.177	.076	.118	.212	.098	.028	.164	.139
t11r04	.538	.286	.216	.125	.059	.093	.078	.086	.124	.045	.017	-.027
t11r05	.281	.354	.053	.424	.018	.010	.038	-.043	.061	-.015	.070	-.014

Extraction Method: Maximum
Likelihood.

Rotation Method: Varimax with Kaiser
Normalization.

a. Rotation converged in 17
iterations.

Task Level Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
t2tot	6.87	2.636	359
t3tot	6.87	3.042	359
t4tot	5.49	2.949	359
t5tot	5.77	3.072	359
t6tot	4.68	3.041	359
t7tot	5.92	3.194	359
t8tot	6.70	3.258	359
t9tot	5.65	3.296	359
t10tot	4.55	2.829	359
t11tot	6.52	3.326	359

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.959
Bartlett's Test of Sphericity	Approx. Chi-Square	2489.431
	df	45
	Sig.	.000

Communalities

	Initial	Extraction
t2tot	.478	.467
t3tot	.580	.588
t4tot	.528	.536
t5tot	.598	.624
t6tot	.464	.473
t7tot	.649	.688
t8tot	.696	.741
t9tot	.652	.656
t10tot	.564	.587

t11tot	.712	.747
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Extraction Method: Maximum Likelihood.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.487	64.873	64.873	6.107	61.072	61.072
2	.642	6.421	71.294			
3	.496	4.960	76.254			
4	.445	4.455	80.709			
5	.430	4.297	85.006			
6	.384	3.837	88.843			
7	.328	3.283	92.126			
8	.305	3.050	95.176			
9	.257	2.575	97.751			
10	.225	2.249	100.000			

Extraction Method: Maximum Likelihood.

Factor Matrix^a

	Factor
	1
t2tot	.683
t3tot	.767
t4tot	.732
t5tot	.790
t6tot	.688
t7tot	.829
t8tot	.861
t9tot	.810
t10tot	.766
t11tot	.864

Extraction Method:

Maximum

Likelihood.

a. 1 factors

extracted. 3

iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
71.063	35	.000