

Appendix 3_9j Extended Assessment Science Elementary Factor Analysis

Oregon 2008 Extended Assessment

Elementary Grade Band SCIENCE Task Factor Analysis

Math Items Across all Tasks

N of Cases = 517

N of Items = 50

Inter-item Correlations**Summary Item Statistics**

	Mean	Min	Max	Range	Maxi / Min	Var	N Items
Item Means	1.540	.776	1.816	1.041	2.342	.053	50
Item Variances	.639	.332	.993	.660	2.987	.035	50
Inter-Item Correlations	.319	.030	.582	.552	19.142	.009	50

Alpha = .956

Standardized item alpha = .959

KMO and Bartlett's Test

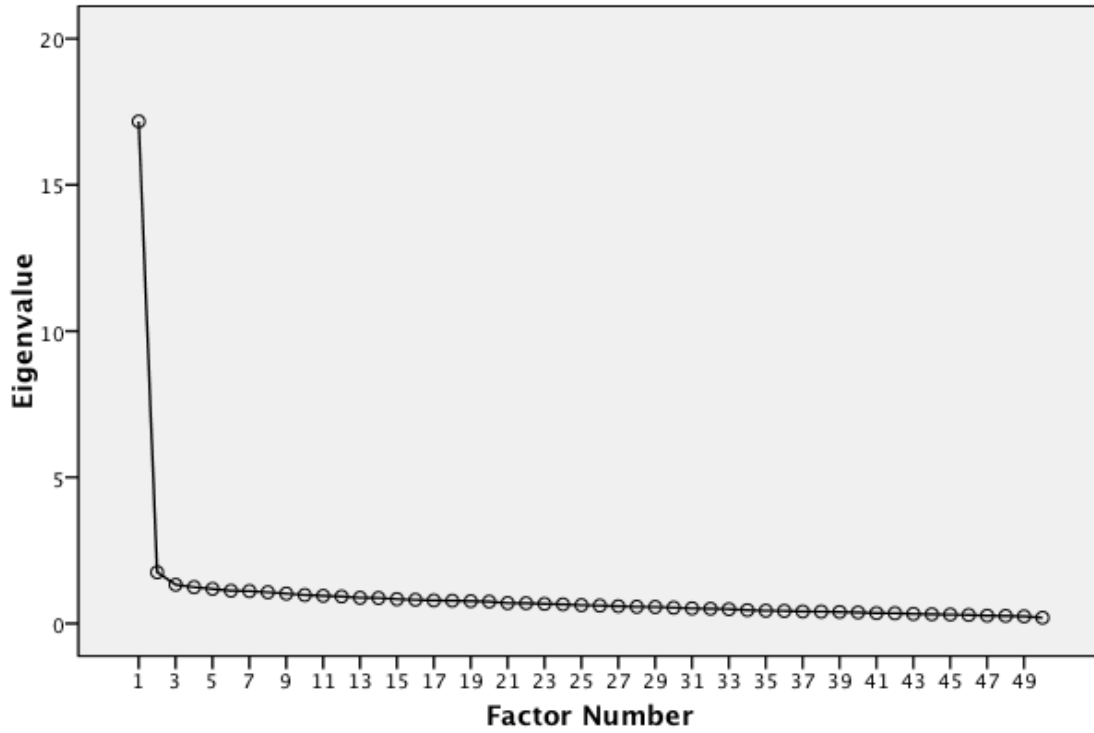
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	11321.699
	df	1225
	Sig.	.000

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	17.168	34.337	34.337	7.248	14.497	14.497	17.168	34.337	34.337
2	1.753	3.506	37.842	3.095	6.190	20.687	1.753	3.506	37.842
3	1.330	2.659	40.501	7.860	15.720	36.407	1.330	2.659	40.501
4	1.244	2.488	42.989	1.237	2.473	38.881	1.244	2.488	42.989
5	1.188	2.376	45.365	.735	1.470	40.351	1.188	2.376	45.365
6	1.124	2.247	47.612	.623	1.246	41.597	1.124	2.247	47.612
7	1.111	2.223	49.835	.554	1.108	42.705	1.111	2.223	49.835
8	1.072	2.143	51.978	.512	1.023	43.729	1.072	2.143	51.978
9	1.025	2.050	54.028	.483	.965	44.694	1.025	2.050	54.028

Extraction Method: Maximum Likelihood.

Scree Plot



Goodness-of-fit Test

Chi-Square	df	Sig.
1225.505	811	.000

Difference Between Model Fit for 1 Factor and Multiple Factor Models

chisq1	chisq2	chidiff	df1	df2	dfdifff	prob
2634.85	1225.51	1409.35	1175	811	364	.00

Rotated Factor Matrix^a

	Factor								
	1	2	3	4	5	6	7	8	9
t2r01	.605	.269	.198	.117	.056	.083	.119	.003	.174
t2r02	.638	.237	.150	.180	.283	-.022	.051	.055	.129
t2r03	.123	.208	.311	.224	.085	.164	.056	.031	.089
t2r04	.237	.165	.088	.183	.058	.039	.043	.120	-.082
t2r05	.226	.172	.114	.112	.411	.109	.039	.089	.021
t3r01	.300	.597	.235	.189	.063	.021	.071	.144	.006
t3r02	.253	.269	.464	.067	.127	.149	.048	.068	.112
t3r03	.322	.248	.339	.065	.153	.256	.193	.049	.145
t3r04	.274	.554	.167	.245	.087	.140	.003	.050	-.013
t3r05	.201	.618	.205	.108	.043	.154	.118	-.004	.012
t4r01	.308	.274	.323	.168	.272	.135	.116	.194	.074
t4r02	.387	.221	.209	.269	.066	.218	.053	.114	.168
t4r03	.227	.188	.104	.390	.268	.098	.094	.049	-.063
t4r04	.420	.124	.291	.433	.282	.041	.041	-.100	-.107
t4r05	.234	.597	.162	.151	.141	.128	.083	.094	.133
t5r01	.278	.183	.216	.135	.114	.151	.879	.118	.026
t5r02	.292	.263	.331	.230	.028	.090	.193	.015	.024
t5r03	.359	.201	.122	.055	.087	.163	.100	.136	.107
t5r04	.577	.215	.252	.192	-.054	.306	.185	.137	.031
t5r05	.601	.223	.176	.002	.358	.142	.159	.137	-.048
t6r01	.705	.237	.216	.090	.100	.068	.004	.025	-.127
t6r02	.270	.280	.295	.248	.240	.119	.029	.015	.090
t6r03	.472	.254	.346	.072	.108	.031	.130	.111	.146
t6r04	.376	.309	.406	.031	.233	.068	.162	.120	.088
t6r05	.277	.268	.436	.196	.124	.006	.023	.099	.055
t7r01	.122	.294	.142	.278	.142	.194	.117	-.007	.085
t7r02	.268	.209	.257	.409	.282	.147	.061	.046	.217
t7r03	.296	.554	.164	.146	.189	.179	.052	.124	.013
t7r04	.197	.582	.219	.072	.200	.170	.065	.128	.031
t7r05	.473	.108	.110	.165	.228	.260	.220	.072	-.036

t8r01	.391	.277	.192	.110	.027	.130	.042	.066	-.085
t8r02	.407	.112	.370	.309	.042	.107	-.003	.203	.183
t8r03	.292	.280	.286	.150	.155	.097	.117	.051	.026
t8r04	.012	.074	.043	.269	-.011	.061	.021	.059	-.004
t8r05	.093	.133	.260	.176	.091	.241	.033	.020	-.002
t9r01	.270	.211	.221	.206	.153	.085	.122	.862	.041
t9r02	.389	.196	.444	.166	.038	.185	.073	.157	-.209
t9r03	.242	.153	.416	.133	.023	.094	.092	.042	-.082
t9r04	.465	.183	.383	.029	.231	.185	.062	.086	.058
t9r05	.403	.160	.491	.132	.200	.115	.119	.220	.116
t10r01	.227	.217	.293	.014	.330	.262	.046	.125	.076
t10r02	.059	.194	.323	.135	.293	.185	.100	.073	.016
t10r03	.133	.286	.273	.180	.184	.103	.116	-.017	.083
t10r04	.542	.177	.202	.408	.119	.089	.044	.117	.111
t10r05	.077	.291	.228	.180	.110	.308	-.018	.006	.031
t11r01	.317	.211	.223	.139	.161	.072	.143	.110	-.053
t11r02	.109	.351	.069	.095	.100	.414	.032	.026	-.015
t11r03	.565	.227	.232	.018	.111	.176	.064	.123	.474
t11r04	.362	.122	.146	.191	.222	.204	.024	-.048	.090
t11r05	.212	.158	.165	.194	.116	.475	.168	.080	.058

Extraction Method: Maximum Likelihood.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 18 iterations.

Task Level Factor Analysis**Descriptive Statistics**

	Mean	Std. Deviation	Analysis N
t2tot	8.16	2.457	524
t3tot	7.39	3.030	524
t4tot	7.93	2.814	524
t5tot	8.42	2.599	524
t6tot	8.26	2.729	524
t7tot	7.59	2.896	524
t8tot	6.52	2.639	524
t9tot	7.81	2.974	524
t10tot	6.58	2.932	524
t11tot	7.67	2.726	524

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.967
Bartlett's Test of Sphericity	Approx. Chi-Square	4359.632
	df	45
	Sig.	.000

Communalities

	Initial	Extraction
t2tot	.616	.632
t3tot	.681	.704
t4tot	.713	.746
t5tot	.691	.716
t6tot	.725	.749
t7tot	.692	.701
t8tot	.534	.554
t9tot	.665	.680

t10tot	.604	.626
t11tot	.607	.628

Extraction Method:
Maximum Likelihood.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.059	70.587	70.587	6.737	67.371	67.371
2	.451	4.510	75.097			
3	.430	4.295	79.392			
4	.380	3.803	83.194			
5	.365	3.652	86.846			
6	.337	3.366	90.212			
7	.278	2.777	92.990			
8	.257	2.570	95.560			
9	.234	2.336	97.896			
10	.210	2.104	100.000			

Extraction Method: Maximum Likelihood.

Factor Matrix^a

	Factor
	1
t2tot	.795
t3tot	.839
t4tot	.864
t5tot	.846
t6tot	.865
t7tot	.838
t8tot	.744
t9tot	.825
t10tot	.791

t11tot	.793
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Extraction Method:

Maximum

Likelihood.

a. 1 factors

extracted. 3

iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
84.895	35	.000