

Appendix 3_9g Extended Assessment Mathematics Elementary Factor Analysis

Oregon 2008 Extended Assessment

Elementary Grade Band MATH Task Factor Analysis

Math Items Across all Tasks

N of Cases = 1990

N of Items = 50

Inter-item Correlations**Summary Item Statistics**

	Mean	Min	Max	Range	Maxi / Min	Var	N Items
Item Means	1.045	.552	1.702	1.150	3.085	.105	50
Item Variances	.667	.443	.981	.538	2.217	.025	50
Inter-Item Correlations	.251	.007	.620	.613	89.113	.009	50

Alpha = .941

Standardized item alpha = .944

KMO and Bartlett's Test

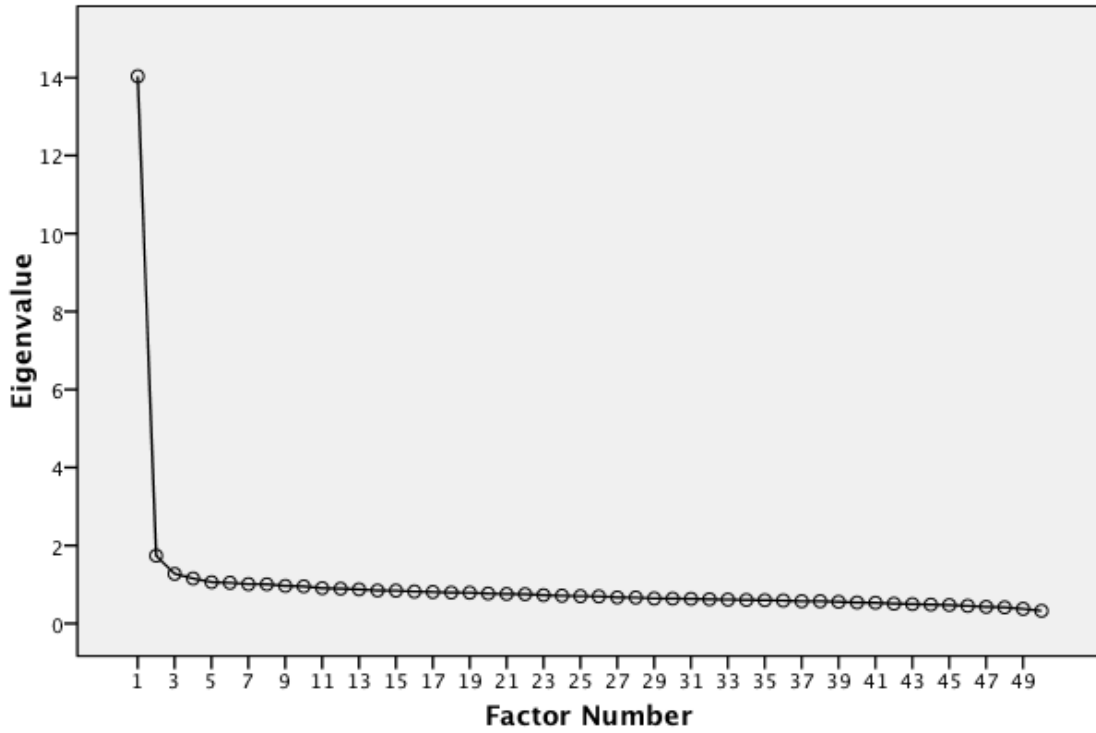
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.978
Bartlett's Test of Sphericity	Approx. Chi-Square	29872.221
	df	1225
	Sig.	.000

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	14.035	28.070	28.070	12.901	25.803	25.803	5.552	11.103
2	1.741	3.482	31.552	1.281	2.563	28.366	3.235	6.470	17.573
3	1.275	2.550	34.101	.904	1.808	30.174	2.921	5.842	23.416
4	1.157	2.314	36.415	.561	1.122	31.296	2.333	4.665	28.081
5	1.063	2.125	38.540	.422	.843	32.139	1.055	2.110	30.191
6	1.046	2.093	40.633	.336	.673	32.812	.925	1.850	32.041
7	1.011	2.022	42.655	.295	.590	33.402	.551	1.103	33.144
8	1.007	2.014	44.669	.252	.504	33.905	.381	.761	33.905

Extraction Method: Maximum Likelihood.

Scree Plot



Goodness-of-fit Test

Chi-Square	df	Sig.
1227.915	853	.000

Difference Between Model Fit for 1 Factor and Multiple Factor Models

chisq1	chisq2	chidiff	df1	df2	dfdifff	prob
3935.57	1227.92	2707.65	1175	853	322	.00

Rotated Factor Matrix^a

	Factor							
	1	2	3	4	5	6	7	8
t2r01	.127	.040	.131	.225	.253	-.011	.025	-.042
t2r02	.116	.094	.123	.279	.147	.035	-.022	.061
t2r03	.177	.302	.188	.239	.285	.080	.073	.009
t2r04	.344	.222	.139	.183	.275	.072	.012	.061
t2r05	.290	.236	.168	.209	.165	.060	.455	.067
t3r01	.009	.033	.098	.255	.060	.006	.018	-.029
t3r02	.048	.186	.109	.345	.074	.046	.000	.016
t3r03	.197	.496	.124	.262	.077	.063	-.056	.078
t3r04	.357	.415	.100	.320	.076	.037	-.013	.098
t3r05	.100	.157	.102	.355	.013	.029	.059	.032
t4r01	.441	.171	.094	.252	.241	.080	.130	.169
t4r02	.098	.126	.010	.199	.065	.053	.059	.025
t4r03	.370	.207	.166	.306	.122	.072	.078	.222
t4r04	.514	.258	.157	.192	.148	.085	.091	.127
t4r05	.188	.125	.122	.215	.029	.037	.084	.065
t5r01	.282	.151	.181	.172	.140	.076	-.006	.142
t5r02	.232	.230	.105	.138	.168	.079	.048	.145
t5r03	.279	.252	.171	.200	.140	.071	.008	.059
t5r04	.291	.212	.166	.324	.114	.022	.113	.079
t5r05	.622	.189	.148	.110	.149	.091	-.010	.126
t6r01	.362	.220	.275	.124	.294	.094	.068	.066
t6r02	.152	.220	.128	.215	.270	.082	.106	.143
t6r03	.363	.252	.241	.124	.227	.128	.104	.092
t6r04	.445	.095	.130	.099	.150	.030	.054	-.024
t6r05	.293	-.032	.097	.048	-.034	-.036	.149	-.058
t7r01	.646	.175	.143	.145	.075	.273	.010	.003
t7r02	.503	.231	.222	.115	.090	.731	.020	.059
t7r03	.267	.252	.276	.148	.149	.283	.127	.008
t7r04	.455	.201	.249	.165	.058	.100	.123	.023
t7r05	.264	.087	.343	.217	.129	.019	.063	-.013

t8r01	.457	.440	.204	.165	.080	.103	.104	-.028
t8r02	.094	.666	.195	.189	.226	.096	.070	-.053
t8r03	.423	.303	.289	.213	.175	.106	.125	-.044
t8r04	.227	.248	.295	.303	.053	.064	.159	-.028
t8r05	.434	.199	.306	.254	.059	.071	.150	-.132
t9r01	.700	.174	.244	.157	.023	.079	-.010	.037
t9r02	.251	.269	.335	.197	.184	.128	.100	.012
t9r03	.189	.202	.248	.207	.138	.093	.052	.016
t9r04	.229	.111	.366	.218	.070	.039	-.016	.002
t9r05	.097	.194	.278	.167	.177	.056	.010	-.014
t10r01	.298	.129	.410	.143	.167	.086	.114	.056
t10r02	.576	.138	.367	.070	.133	.073	-.005	.048
t10r03	.222	.188	.404	.234	.084	.050	-.044	.084
t10r04	.196	.169	.425	.200	.116	.081	.070	.008
t10r05	.319	.185	.314	.163	.104	.068	.103	.137
t11r01	.194	.546	.223	.197	8.761E-5	.043	.105	.059
t11r02	.256	.343	.232	.260	.095	.059	.093	.115
t11r03	.105	.294	.295	.262	.024	.043	.117	.002
t11r04	.390	.362	.481	.091	.014	.090	.172	.257
t11r05	.192	.054	.305	.326	-.034	-.003	.028	.056

Extraction Method: Maximum Likelihood.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

Task Level Factor Analysis**Descriptive Statistics**

	Mean	Std. Deviation	Analysis N
t2tot	5.02	2.601	2051
t3tot	3.78	2.664	2051
t4tot	5.32	2.400	2051
t5tot	5.89	2.673	2051
t6tot	5.64	2.700	2051
t7tot	6.29	2.773	2051
t8tot	5.35	2.877	2051
t9tot	4.94	2.651	2051
t10tot	5.21	2.717	2051
t11tot	4.16	2.738	2051

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.962
Bartlett's Test of Sphericity	Approx. Chi-Square	13223.047
	df	45
	Sig.	.000

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.307	63.068	63.068	5.907	59.071	59.071
2	.631	6.314	69.383			
3	.502	5.024	74.406			
4	.466	4.658	79.064			
5	.418	4.176	83.240			
6	.399	3.991	87.231			
7	.372	3.720	90.952			
8	.328	3.279	94.231			

9	.318	3.185	97.416		
10	.258	2.584	100.000		

Extraction Method: Maximum Likelihood.

Factor Matrix^a

	Factor
	1
t2tot	.712
t3tot	.647
t4tot	.751
t5tot	.760
t6tot	.748
t7tot	.820
t8tot	.852
t9tot	.779
t10tot	.804
t11tot	.794

Goodness-of-fit Test

Chi-Square	df	Sig.
260.987	35	.000