

**Appendix 3\_9h Extended Assessment Mathematics Middle Factor Analysis**

Oregon 2008 Extended Assessment

Middle Grade Band MATH Task Factor Analysis

**Math Items Across all Tasks**

N of Cases = 1275

N of Items = 50

**Inter-item Correlations**

**Summary Item Statistics**

	Mean	Min	Max	Range	Maxi / Min	Var	N Items
Item Means	.870	.290	1.313	1.023	4.524	.076	50
Item Variances	.775	.299	.996	.697	3.333	.041	50
Inter-Item Correlations	.201	-.031	.427	.458	-13.664	.006	50

Alpha = .926

Standardized item alpha = .926

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.963
Bartlett's Test of Sphericity	Approx. Chi-Square	14694.767
	df	1225
	Sig.	.000

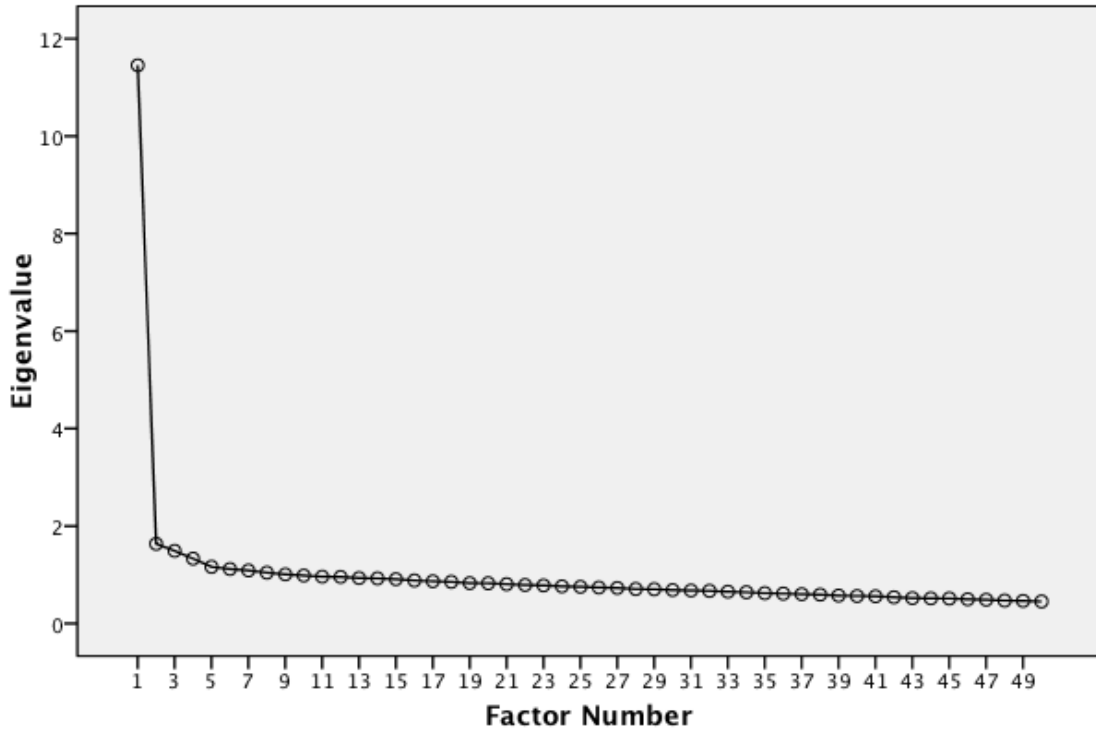
**Factor Analysis**

**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	11.454	22.907	22.907	10.782	21.565	21.565	5.345	10.691
2	1.635	3.271	26.178	.902	1.805	23.370	2.745	5.489	16.180
3	1.491	2.982	29.160	.809	1.619	24.989	1.765	3.531	19.711
4	1.332	2.663	31.824	.652	1.304	26.292	1.440	2.880	22.591
5	1.164	2.327	34.151	.451	.902	27.194	.980	1.960	24.551
6	1.119	2.238	36.389	.404	.808	28.002	.842	1.684	26.235
7	1.090	2.179	38.568	.390	.779	28.781	.758	1.517	27.752
8	1.045	2.090	40.658	.333	.666	29.447	.735	1.470	29.222
9	1.008	2.016	42.674	.312	.624	30.072	.425	.850	30.072

Extraction Method: Maximum Likelihood.

**Scree Plot**



**Goodness-of-fit Test**

Chi-Square	df	Sig.
962.189	811	.000

**Difference Between Model Fit for 1 Factor and Multiple Factor Models**

chisq1	chisq2	chidiff	df1	df2	dfdifff	prob
2553.76	962.19	1591.58	1175	811	364	.00

Rotated Factor Matrix<sup>a</sup>

	Factor							
	1	2	3	4	5	6	7	8
t2r01	.372	.240	.221	.060	-.013	.406	.034	.031
t2r02	.313	.168	.325	.110	.132	.390	-.002	-.028
t2r03	.163	.056	.393	.088	.020	.053	.011	.044
t2r04	-.013	.028	.393	.025	.030	.093	.020	.110
t2r05	.403	.133	.168	.146	.015	.203	.018	.140
t3r01	.057	.033	.307	.001	.024	.010	.077	.029
t3r02	.105	.182	.209	.103	.205	.108	.024	.072
t3r03	.136	.188	.201	.029	.161	.114	.035	.083
t3r04	.086	.074	.153	.015	.225	.048	.097	.173
t3r05	.414	.173	.079	.168	.124	.218	-.019	.143
t4r01	.353	.148	.342	.073	-.018	-.023	9.73E-5	.130
t4r02	.423	.189	.051	.139	.185	.125	.032	.140
t4r03	.468	.202	.152	.215	.143	.203	-.045	.064
t4r04	.338	.108	.178	-.007	.154	.052	.009	.167
t4r05	.208	.038	.103	.103	.212	.258	.186	.144
t5r01	.505	.161	.090	.099	.136	.094	.021	.018
t5r02	.445	.194	.145	.118	.117	.052	.087	.126
t5r03	.429	.247	.050	.132	.188	.079	-.116	.002
t5r04	.503	.141	.096	.059	.163	.090	.022	.115
t5r05	.556	.216	.111	.093	.105	.117	.093	.093
t6r01	.318	.160	.159	.047	.178	.124	.169	.209
t6r02	.208	.119	.233	.197	.111	.153	.153	.089
t6r03	.317	.205	.259	.157	.022	.042	.052	.079
t6r04	.234	.128	.021	.154	.505	.005	.246	.016
t6r05	.396	.265	.239	.088	.024	.095	.184	.125
t7r01	.490	.135	.237	.133	.007	.029	-.042	-.022
t7r02	.432	.359	.136	.148	.159	.031	-.173	.054
t7r03	.387	.024	.378	.139	.071	.003	.040	-.129
t7r04	-.032	.002	.158	.083	.142	.020	.494	.034
t7r05	.506	.132	.113	.126	-.044	.021	.055	.120

t8r01	.168	.334	.131	.187	.138	.024	-.015	.089
t8r02	.434	.245	.069	.082	.186	.095	.222	-.002
t8r03	.143	.153	.186	.002	.052	-.006	.051	.128
t8r04	.423	.205	.210	.110	.056	.072	.140	.069
t8r05	.334	.191	.173	.219	.117	.032	.102	.106
t9r01	.417	.519	.132	.107	.033	.083	-.060	.008
t9r02	.273	.509	.001	.080	.203	.099	-.040	.043
t9r03	.110	.293	.198	.002	.089	.030	.061	.066
t9r04	.149	.209	.171	.216	.143	.115	.112	.152
t9r05	.250	.098	.141	.412	.131	.156	-.024	.106
t10r01	.178	.419	.139	.211	-.035	.099	-.017	.320
t10r02	.114	.357	.079	.217	.031	.013	.120	.050
t10r03	.309	.159	.151	.293	-.037	.082	.117	.152
t10r04	.169	.273	.020	.505	.041	-.020	.107	.050
t10r05	.115	.069	.138	.098	.071	.011	.021	.418
t11r01	.273	.489	.066	.111	.009	.102	.040	.053
t11r02	.308	.204	.048	.284	.189	.083	.059	.074
t11r03	.404	.298	.055	.216	.136	.005	.161	.036
t11r04	.191	.193	.225	.193	.133	.085	.103	.047
t11r05	.343	.374	.054	.293	.034	.259	.234	-.047

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	3.93	2.572	1305
t3tot	3.44	2.301	1305
t4tot	4.05	2.438	1305
t5tot	5.05	3.027	1305
t6tot	3.76	2.679	1305
t7tot	4.24	2.810	1305
t8tot	4.40	2.724	1305
t9tot	4.22	2.692	1305
t10tot	4.57	2.883	1305
t11tot	5.34	3.124	1305

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.954
Bartlett's Test of Sphericity	Approx. Chi-Square	6965.499
	df	45
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.808	58.078	58.078	5.351	53.514	53.514
2	.694	6.935	65.013			
3	.599	5.995	71.008			
4	.510	5.101	76.109			
5	.455	4.553	80.662			
6	.446	4.456	85.119			
7	.421	4.214	89.333			

8	.383	3.831	93.164		
9	.355	3.554	96.719		
10	.328	3.281	100.000		

Extraction Method: Maximum Likelihood.

### Factor Matrix<sup>a</sup>

	Factor
	1
t2tot	.677
t3tot	.612
t4tot	.752
t5tot	.786
t6tot	.741
t7tot	.741
t8tot	.770
t9tot	.757
t10tot	.674
t11tot	.786

Extraction Method:  
Maximum  
Likelihood.

a. 1 factors  
extracted. 3  
iterations required.

### Goodness-of-fit Test

Chi-Square	df	Sig.
183.188	35	.000