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## Gifted Education Factsheet #001: Identification Requirements for Students who are Gifted in Superior Cognitive Ability

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The Ohio Revised Code 3324.01-.07 and Ohio Administrative Code 3301-51-15 define the requirements to identify gifted students in the area of Superior Cognitive Ability as follows:

A child shall be identified as exhibiting "superior cognitive ability" if the child did either of the following within the preceding twenty-four months:

Scored two standard deviations above the mean, minus the standard error of measurement, on an approved individual standardized intelligence test administered by a licensed or certified school psychologist or licensed psychologist;

**OR**

Accomplished any one of the following:

- Scored at least two standard deviations above the mean, minus the standard error of measurement, on an approved standardized group intelligence test;
- Performed at or above the ninety-fifth percentile on an approved individual or group standardized basic or composite battery of a nationally normed achievement test or;
- Attained an approved score on one or more above grade-level standardized, nationally normed approved tests.

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### Calculating Identification Scores

It is the district's responsibility, when purchasing testing materials, to include in the order a copy of the technical or examiner's manual. The technical manual will contain information on the administration, scoring and interpretation of the specific test for which it written. In addition to learning information about evaluator qualification and how to administer the test, Gifted Coordinators will use the technical manual to determine cut-off scores, accommodations or modifications with special populations and the specific psychometric qualities of the instrument that makes it appropriate for use with all gifted students, including those who come from diverse cultural backgrounds, are economically disadvantaged, who have a learning disability or for whom English is a second language. For the purposes of this factsheet, the discussion will be confined to the recommended practices on calculating the mean, standard deviation and standard error of measurement needed to create a cut-off score for identification.

The mean and standard deviation scores are defined by the test publisher based on the data collected during the validation of the instrument. Scores used for gifted screening and identification must come from standardized, norm referenced instruments. The very nature of the standardization process requires the scores to be derived according to the normal curve. Raw scores are converted to standard scores which are also defined in terms of their distance from the mean, or standard deviation (SD). There are two types of scores that are calculated from the raw scores. The first level of score is the subtest score which is generally calculated using z-scores that have a range of 1-19, mean of 10 and SD of  $\pm 3$ . This tells us how well the individual scored in a specific area of the test. The subtest scores are then combined into index scores which result in deviation IQ scores with a mean of 100 and a test specific SD of 15 or 16. On a test with a mean of 100 and SD of 15, you would **begin** calculating a cutoff score at 130 but on a test with a SD of 16 it would be 132. The next consideration is that calculation is the standard error of measurement (SEM).

Calculating a "true" test score is difficult and the obtained score on any test should be considered an estimate of ability. To increase confidence in the obtained scores, it is recommended that said scores take into account the estimate of expected error called the standard error of measurement. The SEM is calculated using a formula that includes the standard deviation and reliability coefficient of the instrument. Therefore, large SEMs indicate a less precise

measurement, and a small SEM indicates a more accurate measure because the error is reduced. Many instruments will indicate different SEM by age or grade level, and these should be considered when making a determination of the reliability of that instrument for a specific age or grade level. To aid in the calculation of schoolwide cut-off scores, it is recommended to use an average score when available. In addition, some test publishers have calculated separate SEM for exceptional or clinical populations. These should be used ONLY when gifted students are included in the definition of these populations provided by the publisher.

To determine the SEM for an instrument, apply an additive rounding system. This method defines a whole number as including any fraction of the previous number. For example, the number 4.2 would be rounded to the next higher number because the additional .2 indicates additional error beyond 4.0. The next round number therefore is 5.0. This is the SEM that should be subtracted from the score at 2 SD above the mean for the test to create a cut-off score for gifted identification.

A sample list of scores for instruments from the Chart of Approved Instruments is included for further demonstration. All score calculations are based on Full Scale Index Scores. This list is intended for comparison purposes only. It is the responsibility of the gifted coordinator to verify any information used in making decisions about students in the district; mistakes on this list does not hold the user harmless.

Name of Approved Instrument	Mean	SD	SEM	Score for Gifted ID
Cognitive Abilities Test (CogAT), Form 6	100	16	Gr. K-2 = 5 Gr. 3-12 = 3	Gr. K-2 = 127 Gr. 3-12 = 129
Das-Naglieri Cognitive Assessment Systems (CAS)	100	15	4.0	126
Differential Ability Scales – 1 <sup>st</sup> or 2 <sup>nd</sup> Edition	100	15	4.0	126
InView – A Measure of Cognitive Abilities	100	16	4.0	128
Kaufman Assessment Battery for Children, 2nd Ed. (KABC-II)	100	15	MPI Scoring Gr. K-2 = 3.0 Gr. 3-12 = 4.0	MPI Scoring Gr. K-2 = 127 Gr. 3-12 = 126
			FCI Scoring Gr. K-12 = 3.0	FCI Scoring Gr. K-12 = 127
Leiter International Performance Scale-Revised (Leiter-R)	100	15	Age 2-10 = 5.0 Age 11-20 = 4.0	Age 2-10 = 125 Age 11-20 = 126
Naglieri Nonverbal Ability Test- 1 <sup>st</sup> or 2 <sup>nd</sup> Edition – Group Administration	100	15	6.0	124
Naglieri Nonverbal Ability Test – 1 <sup>st</sup> or 2 <sup>nd</sup> Edition – Individual Administration	100	15	Gr. K-6 = 5 Gr. 7-12 = 4	Gr. K-6 = 125 Gr. 7-12 = 126
Otis Lennon School Ability Test- 8 <sup>th</sup> or 7 <sup>th</sup> Edition	100	16	6.0	126
Pruebas de habilidad cognitiva – Revisada	100	15	2.0	128
Stanford-Binet Intelligence Scales- 5th Edition	100	15	3.0	127
Test of Cognitive Skills, Second Edition (TCS/2)	100	16	5	127
Universal Nonverbal Intelligence Test (UNIT) Standard & Extended Battery	100	15	4.0	126
Wechsler Intelligence Scale for Children – 4 <sup>th</sup> Edition, Spanish (WISC-IV Spanish)	100	15	3.0	127
Wechsler Intelligence Scale for Children, 4 <sup>th</sup> Edition (WISC-IV)	100	15	3.0	127
Wechsler Nonverbal Scale of Ability	100	15	5.0	125
Wechsler Preschool & Primary Scale of Intelligence- 3 <sup>rd</sup> Edition	100	15	3.0	127
Woodcock-Johnson III (WJIII), Tests of Cognitive Abilities (including NU edition)	100	15	3.0	127