Reaching and Teaching our Gifted Learners

What the gifted identification tells us about children’s learning needs

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Gifted Education Director, Paradise Valley Unified School District
Relevant Disclosures

I am coauthor of:

- *Helping All Gifted Children Learn: A Teacher’s Guide to Using the Results of a nonverbal ability test* (Naglieri, Brulles, & Lansdowne)

- *The Cluster Grouping Handbook: How to challenge gifted students and improve achievement for all* (Winebrenner & Brulles)

- *Teaching Gifted Kids in Today’s Classrooms* (Winebrenner & Brulles)
Presentation Outline

- What gifted tests measure
- How the gifted identification relates to learning needs
- Creating optimal learning environments
- Using school data to inform instruction
- Exploring gifted programming options
- Reaching and teaching gifted learners
What tests measure

- IQ tests measure ability.

- Achievement tests measure what a child already knows.
Reasons for Testing

- To provide details about learning needs, including strengths and weaknesses
- To identify a child for a gifted program
- To discover any learning potential and possible disabilities that require intervention
- To help advocate for appropriate educational placements and accommodations
MOST COMMONLY USED TESTS
for gifted identification

Ability tests:
- Cognitive Abilities Test (CogAT)
- Naglieri Nonverbal Ability Test (NNAT)

Intelligence tests:
- WISC IV
- Stanford Binet V
Tests of General Ability

- The content of the activities may vary but they all require general ability.

- Tests of general ability may be divided on the basis of the content of the questions... verbal, quantitative, or nonverbal.

...but that does not mean that different abilities are being measured.
Cognitive Abilities Test
CogAT

Verbal Battery- verbal classification, sentence completion, verbal analogies.

Quantitative Battery - quantitative relations, number series, equation building.

Non-Verbal Battery - figure classification, figure analogies, figure analysis.
Measures General Intelligence

Nonverbal describe the construct of the test items:
- not the type of thinking;
- not the type of learning.
Individual Assessments

- Licensed Psychologist
- Most commonly used:
  - WISC-IV
  - Stanford Binet
## IQ overview

<table>
<thead>
<tr>
<th>Score</th>
<th>IQ Range</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
<td>Very Superior</td>
<td>1 in 10,000</td>
</tr>
<tr>
<td>150</td>
<td>Very Superior</td>
<td>9 in 10,000</td>
</tr>
<tr>
<td>140</td>
<td>Very Superior</td>
<td>7 in 1,000</td>
</tr>
<tr>
<td>130</td>
<td>Superior</td>
<td>3 in 100</td>
</tr>
<tr>
<td>120</td>
<td>Superior</td>
<td>11 in 100</td>
</tr>
<tr>
<td>110</td>
<td>Bright</td>
<td>27 in 100</td>
</tr>
</tbody>
</table>
Why do gifted students need differentiated instruction?

Figure 1
The Normal Distribution of IQ Scores

Scanned from: "SENSE AND NONSENSE ABOUT IQ"
General Ability

- General ability is what allows people to solve a number of different kinds of problems that may involve words, pictures, or numbers.
- These problems may involve:
  
  - reasoning, memory, sequencing, verbal and math skills, patterning, connecting ideas across and within content areas, insights, making connections, drawing inferences, analyzing simple and complex ideas…
High Ability Relates to…

• Making relationships between ideas and things
• Acquiring and retaining information quickly
• Learning advanced content more quickly than age peers
Holistic Thinkers *(Gestalt)*

- Process information in “whole to part” way
- Function opposite of sequential learner
- May “see” the solution w/o using the same steps as others
- Interweave concepts and ideas
- Sometimes think faster than they can write
Asynchronous Development...

*Refers to uneven intellectual, physical, and emotional development.*

- In average children, intellectual, physical, and emotional development progress at about the same rate. *Development is in "sync."*

- In gifted children, the areas do not progress at the same rate. *The development of those areas is out of "sync."*
Giftedness is found in all ethnic, socioeconomic, and cultural groups.
Atypical gifted student populations

- Creatively gifted people
- Gifted Perfectionists
- Culturally and linguistically diverse gifted students
- Twice-exceptional gifted students
- Non-productive gifted students
Many Gifted Children Have…. 

- A wide range of interests
- Highly developed curiosity and a limitless supply of questions
- Interest in experimenting and doing things differently
- Tendency to put ideas of things together in ways that are unusual and not obvious
- Unusual interest in justice, ethics, and morality
- Ability to retain a great deal of information
Gifted children typically…

- Are intensely curious and have many interests
- Process information with great speed and deep understanding
- Remember forever what they learn
- Readily grasp underlying principles and make generalizations
- Are highly sensitive
- Prefer to work alone
- Relate well with older students and adults
- Demonstrate advanced sense of humor
- Require little direction
- Sustain long periods of attention and concentration

*These behaviors apply to all content areas, all day long.*
What are the learning needs of gifted students?

All students deserve consistent opportunities to learn new material.

With gifted students, this means having opportunities to engage in intellectually stimulating endeavors that go beyond grade level curriculum.
Gifted children learn differently

They may not need to go through the same sequential steps that others must follow when learning new content.
National, State & Local Trends in Gifted Education
National Trends

According to the “State of the States Report”, NAGC 2011

- “Inadequate commitment to G/T children”
- Estimated 3 million gifted students in US.
- Federal support: 2 cents of every $100 spent on K-12 ed. Until 2011
State Trends

According to the “State of the States Report”, NAGC 2010-11

- “Few states provide reliable and adequate funding, leaving local districts to decide how and how much to invest in their gifted children.”
- Only a few states require any teacher training in gifted ed.

![Graph showing required GT education for general education teachers](image-url)
Mandatory K-12 Services for Gifted Education in AZ:
ARS~ 15-2003, -163, -1201, -779

- Gifted students must be provided special education services commensurate with academic ability and potential
- Gifted curriculum must be differentiated in content, process, product, and learning environment from standard classroom curriculum
- Gifted services must be provided to students who score at the 97% + on the V, Q, or NV sub-test of a state approved test
- Teachers of the gifted must hold, or be working toward obtaining, a gifted endorsement
All Gifted is Local

“Without a national strategy or federal mandate, gifted education depends on decisions made at state and local levels. Leading to a bewildering system of services.”

“State of the Nation Report”, NAGC
What various school options can offer

- Public schools
- Charter schools
- Private schools
- Homeschooling Programs
- Online Programs
Effective gifted programs:

- Flexible grouping
- Differentiation
- Continuous progress
- Intellectual peer interaction
- Continuity
- Teachers with specialized education
Program Options
Self Contained Program

*Designed to serve highly and profoundly gifted students whose needs may not be met by other gifted programs.*

Students in self-contained gifted programs generally work at levels far beyond their chronological age peers.
Cluster Grouping Model

An inclusion model in which gifted students in each grade are grouped together in classrooms with a narrowed range of ability levels.

Gifted cluster teachers should have specialized training in gifted education and in methods of differentiation effective with gifted students.
Pull-out Services

A model that removes gifted students from the mainstream class for specific instruction.

Pull-out gifted programs vary in the amount of time gifted students receive services, and are typically enrichment-based.
Content Replacement Services

A program model in which gifted students receive advanced curriculum and instruction in the content areas.

- Typically in mathematics and/or reading depending upon the students’ area(s) of identification and strength.

- Provided by a gifted education teacher outside the regular classroom at the home school.
Twice Exceptional Program

A program designed for students identified as gifted with another documented diagnosis that indicates a learning challenge.

These students may also be referred to as having dual exceptionalities, or as being GT/LD.
A Continuum of Gifted Services*

Gifted Preschool ~ Age 4+
Self-contained Kindergarten for the Gifted & Talented ~ K
Schoolwide Cluster Grouping Model ~ K-6
Content Replacement / Honors Math and Language Arts ~ Gr. 4+
Enrichment classes ~ 4-8
Self-contained Programs for the Highly Gifted~ gr. 1- 6
Uniquely Gifted ~ gr. 1- 8
Nonverbal Honors Core ~ MS
Digital Learning Center ~ MS
Digital Academy for Advanced Placement Scholars ~ HS
Honors Academies for Pre-engineering & Foreign Lang. ~ MS
Honors & Advanced Placement Classes ~ MS & HS
International Baccalaureate ~ K-12
Online Honors ~ ES/MS/HS

*Offered in Paradise Valley USD
Instructional Provisions

All schools can make!
# Gifted students and their learning needs

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>LEARNING NEEDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are curious and have many interests</td>
<td>Extended learning opportunities</td>
</tr>
<tr>
<td>Process information quickly</td>
<td>Acceleration</td>
</tr>
<tr>
<td>Possess great memory</td>
<td>Testing out</td>
</tr>
<tr>
<td>Grasp underlying principles</td>
<td>Compacting</td>
</tr>
<tr>
<td>Make generalizations</td>
<td>Holistic approach</td>
</tr>
<tr>
<td>Are highly sensitive</td>
<td>Community building</td>
</tr>
<tr>
<td>Prefer to work alone</td>
<td>Independent learning</td>
</tr>
<tr>
<td>Relate well with older students</td>
<td>Mentoring, apprenticeships, acceleration</td>
</tr>
<tr>
<td>Have advanced sense of humor</td>
<td>Leadership opportunities</td>
</tr>
<tr>
<td>Require little direction</td>
<td>Student directed learning</td>
</tr>
<tr>
<td>Maintain deep concentration</td>
<td>Focus with metacognition</td>
</tr>
</tbody>
</table>

Dina Brulles
Acceleration

_Faster presentation of content to more closely match the speed at which gifted students learn._

This can occur:
- within the students' class in one or more subject areas
- outside the class in one or more subject areas in a higher grade
- when the student requires a full year acceleration in all classes
Flexible Grouping

Temporary groupings formed according to students’ interests, achievement levels, learning preferences, or content objectives.

Flexible Groups are formed:
- Within the class
- Within the grade level
- Beyond the grade level
Ability Grouping

Placing students of similar ability in the same class or group for purposes of instruction.

When students work with like minded peers, and at challenge levels commensurate with ability…

- they experience fewer negative social-emotional issues, and
- academic achievement increases
Compacting

Eliminating repetition,
Minimizing drill,
Accelerating instruction,

in basic skills so that gifted students can move to more challenging material.
Enrichment

Learning activities that emphasize critical and creative thinking.

Enrichment activities may--or may not--be connected to the academic standards.
Gifted Program Models

[There is] no single best way to develop programs for these students, who are so varied in their interests, talents, abilities, and learning styles. Thus, programs should be flexible and dynamic, multi-leveled, and designed to meet the individual needs of each child who receives services. The goal is to expand students’ abilities, not just to establish a program”.

Aiming for Excellence: Gifted Program Standards, Landrum and Shaklee (2001)
Tracking Academic Achievement
within a district, school, and classroom
Showing yearly achievement of gifted students in ea. content area tested by the state.  

Example of gifted students in one school: 

### 2012

<table>
<thead>
<tr>
<th>Content</th>
<th>Gifted - MATH</th>
<th>Gifted - READ</th>
<th>Gifted - WRIT</th>
<th>Gifted - SCIEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>8%</td>
<td>50%</td>
<td>45%</td>
<td>0%</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

### 2011

<table>
<thead>
<tr>
<th>Content</th>
<th>Gifted - MATH</th>
<th>Gifted - READ</th>
<th>Gifted - WRIT</th>
<th>Gifted - SCIEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>0%</td>
<td>54%</td>
<td>67%</td>
<td>0%</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The bars represent the percentage of gifted students achieving at or above the state standards in each content area.
### 4th Grade

<table>
<thead>
<tr>
<th>Subject</th>
<th>MATH - Gifted</th>
<th>READ - Gifted</th>
<th>SCIEN - Gifted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percent of Students</strong></td>
<td>5%</td>
<td>40%</td>
<td>0%</td>
</tr>
</tbody>
</table>

- **Math:**
  - 5% of students are gifted.

- **Reading:**
  - 40% of students are gifted.

- **Science:**
  - 0% of students are gifted.

### Graph

- **Math:**
  - 5% of students are gifted.
  - 95% of students are not gifted.

- **Reading:**
  - 40% of students are gifted.
  - 60% of students are not gifted.

- **Science:**
  - 0% of students are gifted.
  - 100% of students are not gifted.
## Gifted vs. Others

### Reading

<table>
<thead>
<tr>
<th></th>
<th>READ - Gifted</th>
<th>READ - Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>A</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>M</td>
<td>50%</td>
<td>74%</td>
</tr>
<tr>
<td>E</td>
<td>50%</td>
<td>19%</td>
</tr>
</tbody>
</table>
Comparing schools within a feeder system

Desert Shadows
MATH

Desert Springs
MATH

North Ranch
MATH

Sandpiper
MATH

Sonoran Sky
MATH
Identifying training needs: Using Surveys

Teacher Assessment Survey

Information from this survey will be used to help the school provide training and assistance to enable teachers to provide the best possible differentiation opportunities for students in the Schoolwide Cluster Grouping Model (SCGM). Thank you for taking the time to complete the survey.

Classroom Differentiation Opportunities for Gifted Students Parent/Guardian Assessment Survey

Information from this survey will be used to help the school provide the best possible differentiation opportunities—modifications of curriculum content, pace, process, products, and learning environment—for your child as part of the Schoolwide Cluster Grouping Model (SCGM). If more than one family adult wishes to respond, you may make a copy of the survey and return both at the same time. Thank you for taking the time to complete the survey.

Classroom Differentiation Opportunities Student Assessment Survey

Information from this survey will be used to help the school provide the best possible learning opportunities for you. You do not have to sign your name, so please be as truthful as you can.
An Administrator’s Perspective

Is there evidence of:

- Yearly academic growth?
- Pre-testing and flexible grouping?
- Compacting curriculum?
- Differentiated learning?
- Student directed learning?
- Small & large group instruction?

Using Data and the Administrator Observation Form
For Classrooms with a Gifted Cluster

**Note to administrators:** The left-hand column describes a specific condition that gifted students need to have available in their classes in order to thrive and learn. When you observe that the element is available to gifted students, use the center column to describe how it was accommodated. If that particular condition is absent, place a checkmark in the right-hand column.

In a pre-observation conference, ask the teacher to identify one or two of the elements he/she is currently providing. Limit your formal observation notes to those elements….

<table>
<thead>
<tr>
<th>Desirable Elements</th>
<th>Present (describe evidence)</th>
<th>Absent (check box)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretests are used whenever possible to document previous mastery of content.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students who demonstrate mastery on pretests are engaged in alternate activities while the rest of the class works with teacher.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher spends time with students who are working on alternate activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher encourages students to take risks and make mistakes as they learn rather than always expecting perfect outcomes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students who need faster pacing with new content are working on independent study projects at the same time other students are working directly with the teacher.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students’ interests are incorporated into their project work; choices are available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many types of products besides formal reports are encouraged for students to demonstrate what they have learned.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reflecting on teaching practices

- Does your teacher training address your students’ learning needs?
- Are you providing a variety of differentiated learning opportunities for your gifted students?
- Is it working?

Using the Teacher Self-Assessment Checklist

Classroom Differentiation Opportunities Teacher Assessment Survey

Information from this survey will be used to help the school provide training and assistance to enable teachers to provide the best possible differentiation opportunities for students in the Schoolwide Cluster Grouping Model (SCGM). Thank you for taking the time to complete the survey.
TEACHER SELF-ASSESSMENT CHECKLIST

How Well Am I Challenging My Gifted Students?

*Note to teachers:* You will quickly notice that this is a very comprehensive list of teaching behaviors. The checklist serves as a guide and self-evaluation tool. It is not expected that any one teacher will demonstrate all the listed behaviors. You may want to use the checklist several times during the school year to observe your own growth as a gifted-cluster teacher.

**Survey Code**

1 = Not yet tried  
2 = Currently trying  
3 = Comfortable with this method

**Curriculum Content**

1  2  3  Do I regularly provide compacting opportunities?
1  2  3  Do I locate or prepare extension activities when I prepare my lesson plans?

**Learning Processes**

1  2  3  Do I use pretests to find out what students already know?
1  2  3  Do I allow students who finish compacted work early to do other activities?

**Learning Products**

1  2  3  Have I provided access to a variety of products from which students may choose to demonstrate what they have learned?
1  2  3  Are there rubrics available for those products to help students produce high-quality work?

**Learning Environment**

1  2  3  Have I provided opportunities for students to work outside the classroom or on the Internet if that will facilitate their project work?
1  2  3  Have I taught students the precise skills they will need to work independently in a successful manner?
**Differentiated Education Plans**

**Differentiated Education Plan for Gifted Elementary Students**

<table>
<thead>
<tr>
<th>Method</th>
<th>Subject Area(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compacting</td>
<td></td>
</tr>
<tr>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>Flexible Grouping</td>
<td></td>
</tr>
<tr>
<td>Tiered Assignments</td>
<td></td>
</tr>
<tr>
<td>Extension Menus</td>
<td></td>
</tr>
<tr>
<td>Interest Centers/Groups</td>
<td></td>
</tr>
<tr>
<td>Learning Centers</td>
<td></td>
</tr>
<tr>
<td>Learning Contracts</td>
<td></td>
</tr>
<tr>
<td>Mentorships/Apprenticeships</td>
<td></td>
</tr>
<tr>
<td>Questioning Strategies</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

**Gifted-Identification Areas and Scores**

Include all scores even if they are not in the required range for gifted identification.

- **Name of Test:**
- **Verbal Score:**
- **Quantitative Score:**
- **Nonverbal Score:**

**Instructional and Management Strategies Used for Differentiation**

Check the strategies you plan to use and indicate the appropriate subject area(s).

**Description of Implementation**

**Evaluation of Effectiveness**

**Social-Emotional Needs Being Targeted**
Differentiated Education Plans

Definition of Strategies

Compacting
Giving students full credit for what they know about an upcoming unit and/or providing advanced students opportunities to learn new material in a shorter time period than needed by classmates

Independent Study
Ongoing in-depth research on a topic of a student’s own choosing

Flexible Grouping
Grouping and regrouping students throughout the year according to readiness, interest, learning style, achievement level, activity preference, or special needs

Tiered Assignments
Varying the level of complexity, depth, or novelty of a lesson so students can go beyond basic requirements of an assignment

Extension Menu
A selection of topics from which a student can choose to pursue an independent study that extends the learning beyond already mastered content standards

Interest Centers/Groups
Ways to organize students to work together on learning activities or projects

Learning Center
Location of a collection of students’ tasks and activities

Learning Contract
A signed agreement between student and teacher regarding specific tasks to be done by the student

Mentorships/Apprenticeships
Opportunities for students to work with a mentor for guidance in a particular area

Questioning Strategies
Using high-level, open-ended questions meant to challenge thinking and learning
<table>
<thead>
<tr>
<th>School</th>
<th>Gifted Specialist</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
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<tbody>
<tr>
<td>Cluster Handbook Ch. 1</td>
<td>Cluster Handbook Ch. 2</td>
<td>Cluster Handbook Ch. 3</td>
<td>Cluster Handbook Ch. 4</td>
<td>Cluster Handbook Ch. 5</td>
</tr>
<tr>
<td>Topic(s)</td>
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<td>DI Strategy</td>
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<td>GRS Element(s)</td>
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<td>School Initiative</td>
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<table>
<thead>
<tr>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>Other Staff Development</th>
</tr>
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<tbody>
<tr>
<td>Cluster Handbook Ch. 6</td>
<td>Cluster Handbook Ch. 7</td>
<td>Cluster Handbook Ch. 8</td>
<td>Cluster Handbook Ch. 5, 6</td>
<td></td>
</tr>
<tr>
<td>Topic(s)</td>
<td>Topic(s)</td>
<td>Topic(s)</td>
<td>Topic(s)</td>
<td></td>
</tr>
<tr>
<td>DI Strategy</td>
<td>DI Strategy</td>
<td>DI Strategy</td>
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</tr>
<tr>
<td>GRS Element(s)</td>
<td>GRS Element(s)</td>
<td>GRS Element(s)</td>
<td>GRS Element(s)</td>
<td></td>
</tr>
</tbody>
</table>
Staff Development Topics

- Characteristics of gifted learners
- Nomination & ID procedures
- Parent communication
- DI strategies for all teachers
- How to pre-asses for student entry points
- Teaching holistic thinkers
- Forming flexible groups
- Creating tiered assignments
- Curriculum compacting
Lesson Extensions 
Lesson Extensions provide menu formatted activities that can be used by the cluster teacher and gifted specialist to extend the learning of students in an individualized and independent manner. Extensions are written utilizing Bloom’s Taxonomy as well as Gardner’s Multiple Intelligences.

Organization of the resources by grade level and by subject. Extensions can be adapted for use with students in multiple grades. They are designed to meet the unique needs of the gifted student as they journey through their learning day. We are
Extension menus and other DI lesson plans posted by grade level and content area
<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Level Grammar</td>
<td>View</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>View</td>
</tr>
<tr>
<td>Critical Thinking – Fluency</td>
<td>View</td>
</tr>
<tr>
<td>Differentiated Instruction</td>
<td>Teaching in a gifted classroom using compacting and Bloom's Taxonomy.</td>
</tr>
<tr>
<td>Does Innovation Increase Motivation?</td>
<td>Teaching with and without technology.</td>
</tr>
<tr>
<td>Socratic Seminar – Gov't</td>
<td>View</td>
</tr>
<tr>
<td>Teaching with Technology</td>
<td>Innovative technology in a 1st and 2nd grade self-contained gifted classroom.</td>
</tr>
</tbody>
</table>
Using Formative and Summative Assessments to Guide Instruction and Document Growth
Out of level testing and instruction in the cluster classroom

Teachers document at and above grade level standards to determine instruction and show growth.

Process: Create grade level essential maps with curriculum notations and standards documentation for each quarter.

- Documents acceleration for parent and teacher
- Allows instruction based on student need and challenge level
- Standards-based instruction holds students and teachers accountable

Procedure: 1. Pretest on grade level by quarter with SAMS Form A
   2. Document standards mastered
   3. Pretest above grade level by quarter with SAMS Form A
   4. Instruct based on student challenge level
   5. Post test with SAMS Form B or alternate assessment
Create essential maps each grade level, for each quarter. Skills & standards are aligned with district adopted curriculum.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Content: Need to know</th>
<th>Skills: Need to be able to do</th>
<th>Standard</th>
<th>Curriculum Harcourt Grade 5</th>
<th>Mastery Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>NUMERICAL OPERATIONS: COMPUTATION A. Addition and subtraction of decimals</td>
<td>A. Add and subtract in writing, decimals through thousandths.</td>
<td>1.2.1</td>
<td>Chapter 4 Lessons 1-5</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>NUMERICAL OPERATIONS: COMPUTATION A. Multiplication</td>
<td>A. Multiply in writing, multi-digit whole numbers. (Any number of digits)</td>
<td>1.2.2</td>
<td>Chapter 9 Lessons 1-5</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>NUMERICAL OPERATIONS: COMPUTATION A. Division</td>
<td>A. Divide in writing, multi-digit whole numbers by whole number divisors without remainders. A.2. Divide in writing, multi-digit whole numbers by whole number divisors with remainders. (Divisors can be any number of digits)</td>
<td>1.2.3</td>
<td>Chapter 11 Lessons 1-6</td>
<td>Chapter 12 Lessons 1-6</td>
</tr>
<tr>
<td>I</td>
<td>NUMERICAL OPERATIONS: COMPUTATION A. Properties B. Raised dot representing multiplication</td>
<td>A. Apply in writing, the associative property to solve numerical problems. A.2. Apply in writing, the commutative property to solve numerical problems. A.3. Apply in writing, the distributive property to solve numerical problems. A.4. Identify in writing the appropriate property(ies) to be used to solve a problem. B1. Recognize visually the raised dot and identify in writing the process to be used (multiplication). B2. Solve in writing, problems using the raised dot.</td>
<td>1.2.4</td>
<td>A. Chapter 5 Lesson 4</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>NUMERICAL OPERATIONS: COMPUTATION A. Order of operations with symbols B. Order of operations without symbols</td>
<td>A.3. Simplify in writing numerical expressions (including decimals) using the order of operation with grouping symbols. B.2. Simplify in writing numerical expressions (including decimals) using the order of operation without grouping symbols.</td>
<td>1.2.5</td>
<td>A &amp; B Chapter 6 Lessons 1 &amp; 2, 5 &amp; 6 But does not include decimals. Need to supplement</td>
<td></td>
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<tr>
<td>I</td>
<td>ESTIMATION: COMPUTATION A. Whole numbers C. Decimals D. Identification of appropriate use E. Level of accuracy F. Appropriate method G. Verification and reasonableness</td>
<td>A. Determine in writing, appropriate estimates for computation with whole numbers. C1. Determine in writing, appropriate estimates for computation with decimals. D1. Identify in writing if estimation is appropriate to a given situation or computation. E1. Identify in writing the level of accuracy needed in estimating the solution in given situation or computation. F1. Identify in writing the appropriate method of estimation to a given situation or computation. G1. Identify in writing, the validity of a solution or the reasonableness of a situation using various estimation strategies. Estimation strategies include but are not</td>
<td>1.3.1</td>
<td>A, D, E, F, G Chapter 3 Lessons 1 &amp; 2, Chapter 9 Lessons 1 Chapter 11 Chapter 12 Lesson 1</td>
<td></td>
</tr>
</tbody>
</table>
Teachers pre-assess standards, ‘at’ and ‘above’ gr. level for each quarter and record results on documentation checklists to determine instructional level for each student.

### 1st Quarter Math Standards: 5th Grade

<table>
<thead>
<tr>
<th>Name _______________________________</th>
<th>Date ______</th>
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</table>

Your student was pre-assessed on the grade level standards for the 1st quarter. He/she has demonstrated mastery of the identified areas. Any areas not mastered will be addressed through focus group instruction. A second assessment will be given following the instruction.

**Strand 1: Number and Operations**  
**Concept 2: Numerical Operations**

- PO 1 Add and subtract decimals through hundredths including money to $1000.00 and fractions with like denominators.
- PO 2 Use multiple strategies to multiply whole numbers
  - two-digit by two-digit and
  - multi-digit by one-digit.
- PO 3 Demonstrate fluency of multiplication and division facts through 12.
- PO 4 Use multiple strategies to divide whole numbers.
- PO 5 Apply associative and distributive properties to solve multiplication and division problems.

**Concept 3: Estimation**

- PO 1 Use benchmarks as meaningful points of comparison for whole numbers, decimals, and fractions.

**Strand 2: Data Analysis, Probability, and Discrete Mathematics**

**Concept 3: Systematic Listing**

- PO 1 Construct tree diagrams to solve problems in context by
  - representing all possibilities for a variety of counting problems,
  - explaining how its properties relate to the problem,
  - representing the same counting problem in multiple ways, and
  - drawing conclusions.
- PO 2 Justify that all possibilities have been enumerated without duplication

**Strand 4: Geometry and Measurement**

- PO 1 Compute elapsed time to the minute.

**Strand 5: Structure and Logic**

**Concept 1: Algorithms**
Create a bridge for when teaching multiple levels in one class.

<table>
<thead>
<tr>
<th>Quarter 2</th>
<th>4th Grade</th>
<th>5th Grade</th>
<th>6th Grade</th>
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</thead>
<tbody>
<tr>
<td><strong>Numerical Operations:</strong></td>
<td><strong>Number Sense:</strong></td>
<td><strong>Numerical Operations:</strong></td>
<td><strong>Numerical Operations:</strong></td>
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<tr>
<td>• Multiplication (double digit)</td>
<td>• Fractions, decimals, ratios</td>
<td>• Review x/÷</td>
<td>• Fractions +/- Review</td>
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<tr>
<td>• Division w/remaiders</td>
<td></td>
<td>• Prime/Composite</td>
<td>• Fractions – Multiplication</td>
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<tr>
<td>• LCM</td>
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<td>• LCM/GCF</td>
<td>• Fractions – Division</td>
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<tr>
<td>• GCF</td>
<td></td>
<td>• Fractions – Comparing, Ordering</td>
<td></td>
</tr>
<tr>
<td>• Prime/Composite</td>
<td></td>
<td>• Fractions - +/- w/unlike denom.</td>
<td></td>
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<tr>
<td>• +/- Fractions w/unlike denom.</td>
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<tr>
<td><strong>Estimation:</strong></td>
<td><strong>Estimation:</strong></td>
<td><strong>Estimation:</strong></td>
<td><strong>Given Situation</strong></td>
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<tr>
<td>• Fractions</td>
<td>• Fractions</td>
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<td><strong>Data Analysis:</strong></td>
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<tr>
<td>• Problem Solving Questions</td>
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<td>• Measures of Central Tendency</td>
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<tr>
<td>• Measures of Central Tendency</td>
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<td>• Data Trends</td>
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<td>• Graphs formats</td>
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<td>• Problem Solving Questions</td>
<td>• Venn Diagram</td>
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<td>• Events</td>
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<td>• Outcomes</td>
<td>• Multiple Trials</td>
<td>• Multiple Trials</td>
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<td></td>
<td>• Theoretical Probability</td>
<td>• Theoretical Probability</td>
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<td></td>
<td>• Experimental Probability</td>
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</table>
Teacher Workshops  (open to all PV teachers)

- Teaching in the Cluster Grouping Model
- Understanding Giftedness: How the Identification Relates to Teaching and Learning
- Interactive and Fun: Vocabulary Activities that Engage
- Using Socratic Questioning & Critical Thinking Skills in Language Arts
- Advancing Differentiation: Thinking and Learning in the 21st Century
- Divergent Thinking through Junior Great Books
- It's Not About More, It's About Different! Teaching Middle School Honors Classes
- Pop Culture in the Classroom? Absolutely (ES/MS/HS)
- Developing Tiered Assignments & Extensions Menus to Increase Challenge Levels
- If Albert Only Tried Harder... Understanding the Twice Exceptional Student
- Unlock the Strategies to Teaching the Nonverbal Identified Gifted Student
- Nonverbal Identification of Giftedness: Using the Test Results to Guide Instruction
- Reaching All Learners: Making Differentiation Work for Gifted Students
- Using Khan Academy to Differentiate Math
- Are You Ready for Some Football? (Using math stats.)
- Project Based Learning: The What and the How To
- Nonfiction Here We Come: Higher Order Thinking through Document Based Questions
- Understanding Giftedness: How the Identification Relates to Teaching and Learning
- Where's the Rigor in Social Studies and Science?
- Arts Integration in the Content Areas
SUGGESTED RESOURCES

ASU Master’s Program: Gifted Education

National Association for gifted Children
www.nagc.org

Supporting Emotional Needs of the Gifted
www.sengifted.org

Hoagies Gifted
www.hoagiesgifted.org