

Training for the New Georgia Performance Standards

Day 5: Differentiation

Content Participant's Guide
Mathematics Grades 3-5

We will lead the nation in improving student achievement.

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Use of This Guide

This training program was developed by the Georgia Department of Education as part of a series of professional development opportunities to help teachers increase student achievement through the use of the Georgia Performance Standards.

The module materials, including a Content Facilitator's Guide, Participant's Guide, and PowerPoint Presentation are available on a CD to designated trainers throughout the state of Georgia who have successfully completed a Train-the-Trainer course offered through the Georgia Department of Education. These trainers have also received supplementary materials.

Materials (guides, presentations, etc.) will be available electronically on <http://www.georgiastandards.org> under the training tab after all trainings of Day 5 have occurred. Consult the trainer for availability.

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<http://www.glc.k12.ga.us/contact/contact.asp?groupname=ESOL+District+Coordinators>

Gifted and Talented

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Agenda

Introduction to Differentiation

- Four Corners
- Calvin's Day at School
- Grade 3 Task: Unit 6: We're Having a Party!

What is Differentiation?

- What is it?
- Standards-Based Education Model
- Self-Assessment

Why and How Do We Differentiate?

- Why do we differentiate?
- How do we differentiate?
- Grade 3 Task: Unit 6: We're Having a Party!

What Does a Differentiated Classroom Look Like?

- True/False Quiz: What Does Differentiation Look Like?
- Grade 4 Unit 4: Polygon Challenge
- Setting Personal Goals for Differentiating

Summary and Field Assignment

Overview

Day 5

By the end of Day 5 of training, participants will be able to:

1. Define differentiation and explain the importance of differentiation in the standards-based education process.
2. Explain key elements in planning for differentiation.
3. Describe and develop procedures for differentiating instruction in a flexible classroom.
4. Describe and develop effective classroom management strategies in a differentiated classroom.
5. Describe the roles of the teacher in a differentiated classroom.
6. Set individual goals for differentiating instruction in each classroom.
7. Cultivate a strong awareness of standards-based teaching and learning.
8. Become familiar with the 3rd-5th grade mathematics GPS along with the expected depth and rigor.
9. Have a deeper understanding of the content addressed within the module.

3 -5 Mathematics Georgia Performance Standards

K-12 Mathematics Introduction

The Georgia Mathematics Curriculum focuses on actively engaging the students in the development of mathematical understanding by using manipulatives and a variety of representations, working independently and cooperatively to solve problems, estimating and computing efficiently, and conducting investigations and recording findings. There is a shift towards applying mathematical concepts and skills in the context of authentic problems and for the student to understand concepts rather than merely follow a sequence of procedures. In mathematics classrooms, students will learn to think critically in a mathematical way with an understanding that there are many different ways to a solution and sometimes more than one right answer in applied mathematics. Mathematics is the economy of information. The central idea of all mathematics is to discover how knowing some things well, via reasoning, permit students to know much else—without having to commit the information to memory as a separate fact. It is the connections, the reasoned, logical connections that make mathematics manageable. As a result, implementation of Georgia's Performance Standards places a greater emphasis on problem solving, reasoning, representation, connections, and communication.

Georgia Mathematics Performance Standards Grade 3

By the end of grade three, students will understand place value. They will further develop their understanding and their skills with addition and subtraction of whole numbers and decimals. They will also expand their knowledge base of multiplication and division of whole numbers. Students will understand the concepts of length, perimeter, area, and time. Students will broaden their understanding of characteristics of previously studied geometric figures. They will solve problems by collecting, organizing, displaying and interpreting data.

Instruction and assessment should include the use of manipulatives and appropriate technology. Topics should be represented in multiple ways including concrete/pictorial, verbal/written, numeric/data-based, graphical, and symbolic. Concepts should be introduced and used in the context of real world phenomena.

NUMBER AND OPERATIONS

Students will use decimal fractions and common fractions to represent parts of a whole. They will also understand the four arithmetic operations for whole numbers and use them in basic calculations, and apply them in problem solving situations.

M3N1. Students will further develop their understanding of whole numbers and ways of representing them.

- a. Identify place values from tenths through ten thousands.

- b. Understand the relative sizes of digits in place value notation (10 times, 100 times, $1/10$ of a single digit whole number) and ways to represent them.

M3N2. Students will further develop their skills of addition and subtraction and apply them in problem solving.

- a. Use the properties of addition and subtraction to compute and verify the results of computation.
- b. Use mental math and estimation strategies to add and subtract.
- c. Solve problems requiring addition and subtraction.

M3N3. Students will further develop their understanding of multiplication of whole numbers and develop the ability to apply it in problem solving.

- a. Describe the relationship between addition and multiplication, i.e., multiplication is defined as repeated addition.
- b. Know the multiplication facts with understanding and fluency to 10×10 .
- c. Use arrays and area models to develop understanding of the distributive property and to determine partial products for multiplication of 2- or 3-digit numbers by a 1- digit number.
- d. Understand the effect on the product when multiplying by multiples of 10.
- e. Apply the identity, commutative and associative properties of multiplication and verify the results.
- f. Use mental math and estimation strategies to multiply.
- g. Solve problems requiring multiplication.

M3N4. Students will understand the meaning of division and develop the ability to apply it in problem solving.

- a. Understand the relationship between division and multiplication and between division and subtraction.
- b. Recognize that division may be two situations: the first is determining how many equal parts of a given size or amount may be taken away from the whole as in repeated subtraction, and the second is determining the size of the parts when the whole is separated into a given number of equal parts as in a sharing model.
- c. Recognize problem-solving situations in which division may be applied and write corresponding mathematical expressions.
- d. Explain the meaning of a remainder in division in different circumstances.
- e. Divide a 2 and 3-digit number by a 1-digit divisor.
- f. Solve problems requiring division.

M3N5. Students will understand the meaning of decimal fractions and common fractions in simple cases and apply them in problem-solving situations.

- a. Understand a decimal fraction (i.e., 0.1) and a common fraction (i.e., $1/10$) represent parts of a whole.
- b. Understand the fraction a/b represents a equal sized parts of a whole that is divided into b equal sized parts.
- c. Understand a one place decimal fraction represents tenths, i.e., $0.3 = 3/10$.

- d. Know and use decimal fractions and common fractions to represent the size of parts created by equal divisions of a whole.
- e. Understand the concept of addition and subtraction of decimal fractions and common fractions with like denominators.
- f. Model addition and subtraction of decimal fractions and common fractions.
- g. Solve problems involving fractions.

MEASUREMENT

Students will understand and measure time and length. They will also model and calculate perimeter and area of simple geometric figures.

M3M1. Students will further develop their understanding of the concept of time by determining elapsed time of a full, half and quarter-hour.

M3M2. Students will measure length choosing appropriate units and tools.

- a. Use the units kilometer (km) and mile (mi.) to discuss the measure of long distances.
- b. Measure to the nearest $\frac{1}{4}$ inch, $\frac{1}{2}$ inch and millimeter (mm) in addition to the previously learned inch, foot, yard, centimeter, and meter.
- c. Estimate length and represent it using appropriate units.
- d. Compare one unit to another within a single system of measurement.

M3M3. Students will understand and measure the perimeter of simple geometric figures (squares and rectangles).

- a. Understand the meaning of the linear unit and measurement in perimeter.
- b. Understand the concept of perimeter as being the boundary of a simple geometric figure.
- c. Determine the perimeter of a simple geometric figure by measuring and summing the lengths of the sides.

M3M4. Students will understand and measure the area of simple geometric figures (squares and rectangles).

- a. Understand the meaning of the square unit and measurement in area.
- b. Model (by tiling) the area of a simple geometric figure using square units (square inch, square foot, etc.).
- c. Determine the area of squares and rectangles by counting, addition, and multiplication with models.

GEOMETRY

Students will further develop their understanding of characteristics of previously studied geometric figures.

M3G1. Students will further develop their understanding of geometric figures by drawing them. They will also state and explain their properties.

- a. Draw and classify previously learned fundamental geometric figures and scalene, isosceles and equilateral triangles.
- b. Identify and explain the properties of fundamental geometric figures.
- c. Examine and compare angles of fundamental geometric figures.
- d. Identify the center, diameter, and radius of a circle.

ALGEBRA

Students will understand how to express relationships as mathematical expressions.

M3A1. Students will use mathematical expressions to represent relationships between quantities and interpret given expressions.

- a. Describe and extend numeric and geometric patterns.
- b. Describe and explain a quantitative relationship represented by a formula (such as the perimeter of a geometric figure).
- c. Use a symbol, such as \square and Δ , to represent an unknown and find the value of the unknown in a number sentence.

DATA ANALYSIS

Students will gather, organize, and display data and interpret graphs.

M3D1. Students will create and interpret simple tables and graphs.

- a. Solve problems by organizing and displaying data in bar graphs and tables.
- b. Construct and interpret bar graphs using scale increments of 1, 2, 5, and 10.
- c. Develop and evaluate mathematical arguments and proofs.
- d. Select and use various types of reasoning and methods of proof.

Process Skills

Each topic studied in this course should be developed with careful thought toward helping every student achieve the following process standards.

M3P1. Students will solve problems (using appropriate technology).

- a. Build new mathematical knowledge through problem solving.
- b. Solve problems that arise in mathematics and in other contexts.
- c. Apply and adapt a variety of appropriate strategies to solve problems.
- d. Monitor and reflect on the process of mathematical problem solving.

M3P2. Students will reason and evaluate mathematical arguments.

- a. Recognize reasoning and proof as fundamental aspects of mathematics.
- b. Make and investigate mathematical conjectures.
- c. Develop and evaluate mathematical arguments and proofs.
- d. Select and use various types of reasoning and methods of proof.

M3P3. Students will communicate mathematically.

- a. Organize and consolidate their mathematical thinking through communication.
- b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- c. Analyze and evaluate the mathematical thinking and strategies of others.
- d. Use the language of mathematics to express mathematical ideas precisely.

M3P4. Students will make connections among mathematical ideas and to other disciplines.

- a. Recognize and use connections among mathematical ideas.
- b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
- c. Recognize and apply mathematics in contexts outside of mathematics.

M3P5. Students will represent mathematics in multiple ways.

- a. Create and use representations to organize, record, and communicate mathematical ideas.
- b. Select, apply, and translate among mathematical representations to solve problems.
- c. Use representations to model and interpret physical, social, and mathematical phenomena.

Terms / Symbols:

whole number, , decimal point, place value of $\frac{1}{10}$ (tenth), numerator, denominator, second, sign of equality, sign of inequality, \div , \times , decimal fraction, common fraction, elapsed time, scalene triangle, isosceles triangle, equilateral triangle, bar graph, mile,

Standards

Grade 4

By the end of grade four, students will add and subtract decimal fractions and common fractions with common denominators. They will also understand how and when it is appropriate to use rounding. Students will use common measurement units to determine weight. Students will develop their understanding of measuring angles with appropriate units and tools. Students will understand the characteristics of geometric plane and solid figures. They will also use tables, graphs, and charts to record and analyze data.

Instruction and assessment should include the use of manipulatives and appropriate technology. Topics should be represented in multiple ways including concrete/pictorial, verbal/written, numeric/data-based, graphical, and symbolic. Concepts should be introduced and used in the context of real world phenomena.

NUMBER AND OPERATIONS

Students will further develop their understanding of whole numbers and master the four basic operations with whole numbers by solving problems. They will also understand rounding and when to appropriately use it. Students will add and subtract decimal fractions and common fractions with common denominators.

M4N1. Students will further develop their understanding of how whole numbers are represented in the base-ten numeration system.

- a. Identify place value names and places from hundredths through one million.
- b. Equate a number's word name, its standard form, and its expanded form.

M4N2. Students will understand and apply the concept of rounding numbers.

- a. Round numbers to the nearest ten, hundred, or thousand.
- b. Describe situations in which rounding numbers would be appropriate and determine whether to round to the nearest ten, hundred, or thousand.
- c. Understand the meaning of rounding a decimal fraction to the nearest whole number.
- d. Represent the results of computation as a rounded number when appropriate and estimate a sum or difference by rounding numbers.

M4N3. Students will solve problems involving multiplication of 2-3 digit numbers by 1-2 digit numbers.**M4N4. Students will further develop their understanding of division of whole numbers and divide in problem solving situations without calculators.**

- a. Know the division facts with understanding and fluency.
- b. Solve problems involving division by a 2-digit number (including those that generate a remainder).
- c. Understand the relationship between dividend, divisor, quotient, and remainder.
- d. Understand and explain the effect on the quotient of multiplying or dividing both the divisor and dividend by the same number. ($2050 \div 50$ yields the same answer as $205 \div 5$).

M4N5. Students will further develop their understanding of the meaning of decimal fractions and use them in computations.

- a. Understand decimal fractions are a part of the base-ten system.
- b. Understand the relative size of numbers and order two digit decimal fractions.
- c. Add and subtract both one and two digit decimal fractions.
- d. Model multiplication and division of decimal fractions by whole numbers.
- e. Multiply and divide both one and two digit decimal fractions by whole numbers.

M4N6. Students will further develop their understanding of the meaning of common fractions and use them in computations.

- a. Understand representations of simple equivalent fractions.
- b. Add and subtract fractions and mixed numbers with common denominators. (Denominators should not exceed twelve.)
- c. Convert and use mixed numbers and improper fractions interchangeably.

M4N7. Students will explain and use properties of the four arithmetic operations to solve and check problems.

- a. Describe situations in which the four operations may be used and the relationships among them.
- b. Compute using the order of operations, including parentheses.
- c. Compute using the commutative, associative, and distributive properties.
- d. Use mental math and estimation strategies to compute.

MEASUREMENT

Students will measure weight in appropriate metric and standard units. They will also measure angles.

M4M1. Students will understand the concept of weight and how to measure it.

- a. Use standard and metric units to measure the weight of objects.
- b. Know units used to measure weight (gram, kilogram, ounces, pounds and tons).
- c. Compare one unit to another within a single system of measurement.

M4M2. Students will understand the concept of angles and how to measure it.

- a. Use tools, such as a protractor or angle ruler, and other methods such as paper folding, drawing a diagonal in a square, to measure angles.
- b. Understand the meaning and measure of a half rotation (180°) and a full rotation (360°).

GEOMETRY

Students will understand and construct plane and solid geometric figures. They will also graph points on the coordinate plane.

M4G1. Students will define and identify the characteristics of geometric figures through examination and construction.

- a. Examine and compare angles in order to classify and identify triangles by their angles.
- b. Describe parallel and perpendicular lines in plane geometric figures.
- c. Examine and classify quadrilaterals (including parallelograms, squares, rectangles, trapezoids, and rhombi).
- d. Compare and contrast the relationships among quadrilaterals.

M4G2. Students will understand fundamental solid figures.

- Compare and contrast a cube and a rectangular prism in terms of the number and shape of their faces, edges, and vertices.
- Describe parallel and perpendicular lines and planes in connection with the rectangular prism.
- Construct/collect models for solid geometric figures (cube, prisms, cylinder, etc.).

M4G3. Students will use the coordinate system.

- Understand and apply ordered pairs in the first quadrant of the coordinate system.
- Locate a point in the first quadrant in the coordinate plane and name the ordered pair.
- Graph ordered pairs in the first quadrant.

ALGEBRA

Students will investigate and represent mathematical relationships between quantities using mathematical expressions in problem-solving situations.

M4A1. Students will represent and interpret mathematical relationships in quantitative expressions.

- Understand and apply patterns and rules to describe relationships and solve problems.
- Represent unknowns using symbols, such as \square and Δ .
- Write and evaluate mathematical expressions using symbols and different values.

DATA ANALYSIS

Students will gather, organize, and display data. They will also compare features of graphs.

M4D1. Students will gather, organize, and display data according to the situation and compare related features.

- Represent data in bar, line and pictographs.
- Investigate the features and tendencies of graphs.
- Compare different graphical representations for a given set of data.
- Identify missing information and duplications in data.

Process Skills

Each topic studied in this course should be developed with careful thought toward helping every student achieve the following process standards.

M4P1. Students will solve problems (using appropriate technology).

- Build new mathematical knowledge through problem solving.

- b. Solve problems that arise in mathematics and in other contexts.
- c. Apply and adapt a variety of appropriate strategies to solve problems.
- d. Monitor and reflect on the process of mathematical problem solving.

M4P2. Students will reason and evaluate mathematical arguments.

- a. Recognize reasoning and proof as fundamental aspects of mathematics.
- b. Make and investigate mathematical conjectures.
- c. Develop and evaluate mathematical arguments and proofs.
- d. Select and use various types of reasoning and methods of proof.

M4P3. Students will communicate mathematically.

- a. Organize and consolidate their mathematical thinking through communication.
- b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- c. Analyze and evaluate the mathematical thinking and strategies of others.
- d. Use the language of mathematics to express mathematical ideas precisely.

M4P4. Students will make connections among mathematical ideas and to other disciplines.

- a. Recognize and use connections among mathematical ideas.
- b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
- c. Recognize and apply mathematics in contexts outside of mathematics.

M4P5. Students will represent mathematics in multiple ways.

- a. Create and use representations to organize, record, and communicate mathematical ideas.
- b. Select, apply, and translate among mathematical representations to solve problems.
- c. Use representations to model and interpret physical, social, and mathematical phenomena.

Terms / Symbols:

sum, difference, product, quotient, mixed fraction, proper fraction, improper fraction, point, ray, line, line segment, parallel, perpendicular, diagonal line, plane, weight, ounce, pound, ton, gram, kilogram, protractor, degree, rotation, parallelogram, trapezoid, rhombus, quadrilateral, congruent, cube, rectangular prism, coordinate system, ordered pair, ratio, proportion, variable, line graph, pictograph

Grade 5

By the end of grade five, students will further develop their understanding of multiplication and division of whole numbers and decimal fractions. They will also understand and investigate algebraic mathematical expressions. Students will also expand their understanding of computing area and volume of simple geometric figures. Students will understand the meaning of congruent geometric shapes and the relationship of the circumference of a circle to its diameter. They will also use percentages and circle graphs to interpret statistical data.

Instruction and assessment should include the use of manipulatives and appropriate technology. Topics should be represented in multiple ways including concrete/pictorial, verbal/written, numeric/data-based, graphical, and symbolic. Concepts should be introduced and used in the context of real world phenomena.

Concepts/Skills to Maintain

Add and subtract decimal fractions
Whole numbers and decimal fraction computation
Angle measurement
Length, area, and weight
Number sense
Add and subtract common fractions with like denominators
Data usage and representation
Characteristics of 2D and 3D shapes
Order of Operations

NUMBER AND OPERATIONS

Students will further develop their understanding of the concept of whole numbers.

They will also understand the meanings of multiplication and division of decimal fractions and use decimal fractions and common fractions in computation, as well as in problem solving situations.

M5N1. Students will further develop their understanding of whole numbers.

- a. Classify the set of counting numbers into subsets with distinguishing characteristics (odd/even, prime/composite).
- b. Find multiples and factors.
- c. Analyze and use divisibility rules.

M5N2. Students will further develop their understanding of decimal fractions as part of the base-ten number system.

- a. Understand place value.
- b. Analyze the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01.

M5N3. Students will further develop their understanding of the meaning of multiplication and division with decimal fractions and use them.

- a. Model multiplication and division of decimal fractions by another decimal fraction.
- b. Explain the process of multiplication and division, including situations in which the multiplier and divisor are both whole numbers and decimal fractions.
- c. Multiply and divide with decimal fractions including decimal fractions less than one and greater than one.
- d. Understand the relationships and rules for multiplication and division of whole numbers also apply to decimal fractions.

M5N4. Students will continue to develop their understanding of the meaning of common fractions and compute with them.

- a. Understand division of whole numbers can be represented as a fraction ($a/b = a \div b$).
- b. Understand the value of a fraction is not changed when both its numerator and denominator are multiplied or divided by the same number because it is the same as multiplying or dividing by one.
- c. Find equivalent fractions and simplify fractions.
- d. Model the multiplication and division of common fractions.
- e. Explore finding common denominators using concrete, pictorial, and computational models.
- f. Use $<$, $>$, or $=$ to compare fractions and justify the comparison.
- g. Add and subtract common fractions and mixed numbers with unlike denominators.
- h. Use fractions (proper and improper) and decimal fractions interchangeably.
- i. Estimate products and quotients.

M5N5. Students will understand the meaning of percentage.

- a. Model percent on 10 by 10 grids.
- b. Apply percentage to circle graphs.

MEASUREMENT

Students will compute the area of geometric plane figures. They will also understand the concept of volume and compute the volume of simple geometric solids and measure capacity. Students will convert from one unit to another within one system of measurement.

M5M1. Students will extend their understanding of area of fundamental geometric plane figures.

- a. Estimate the area of fundamental geometric plane figures.
- b. Derive the formula for the area of a parallelogram (e.g., cut the parallelogram apart and rearrange it into a rectangle of the same area).
- c. Derive the formula for the area of a triangle (e.g. demonstrate and explain its relationship to the area of a rectangle with the same base and height).

- d. Find the areas of triangles and parallelograms using formulae.
- e. Estimate the area of a circle through partitioning and tiling and then with formula (let $\pi = 3.14$). (Discuss square units as they apply to circles.)
- f. Find the area of a polygon (regular and irregular) by dividing it into squares, rectangles, and/or triangles and find the sum of the areas of those shapes.

M5M3. Students will measure capacity with appropriately chosen units and tools.

- a. Use milliliters, liters, fluid ounces, cups, pints, quarts, and gallons to measure capacity.
- b. Compare one unit to another within a single system of measurement (e.g., 1 quart = 2 pints).

M5M4. Students will understand and compute the volume of a simple geometric solid.

- a. Understand a cubic unit (u^3) is represented by a cube in which each edge has the length of 1 unit.
- b. Identify the units used in computing volume as cubic centimeters (cm^3), cubic meters (m^3), cubic inches (in^3), cubic feet (ft^3), and cubic yards (yd^3).
- c. Derive the formula for finding the volume of a cube and a rectangular prism using manipulatives.
- d. Compute the volume of a cube and a rectangular prism using formulae.
- e. Estimate the volume of a simple geometric solid.
- f. Understand the similarities and differences between volume and capacity.

GEOMETRY

Students will further develop their understanding of geometric figures.

M5G1. Students will understand congruence of geometric figures and the correspondence of their vertices, sides, and angles.

M5G2. Students will understand the relationship of the circumference of a circle to its diameter is pi ($\pi \approx 3.14$).

ALGEBRA

Students will represent and investigate mathematical expressions algebraically by using variables.

M5A1. Students will represent and interpret the relationships between quantities algebraically.

- a. Use variables, such as n or x , for unknown quantities in algebraic expressions.
- b. Investigate simple algebraic expressions by substituting numbers for the unknown.
- c. Determine that a formula will be reliable regardless of the type of number

(whole numbers or decimal fractions) substituted for the variable.

DATA ANALYSIS

Students will gather, organize, and display data and interpret graphs.

M5D1. Students will analyze graphs.

- a. Analyze data presented in a graph.
- b. Compare and contrast multiple graphic representations (circle graphs, line graphs, bar graphs, etc.) for a single set of data and discuss the advantages/disadvantages of each.

M5D2. Students will collect, organize, and display data using the most appropriate graph.

Process Skills

Each topic studied in this course should be developed with careful thought toward helping every student achieve the following process standards.

M5P1. Students will solve problems (using appropriate technology).

- a. Build new mathematical knowledge through problem solving.
- b. Solve problems that arise in mathematics and in other contexts.
- c. Apply and adapt a variety of appropriate strategies to solve problems.
- d. Monitor and reflect on the process of mathematical problem solving.

M5P2. Students will reason and evaluate mathematical arguments.

- a. Recognize reasoning and proof as fundamental aspects of mathematics.
- b. Make and investigate mathematical conjectures.
- c. Develop and evaluate mathematical arguments and proofs.
- d. Select and use various types of reasoning and methods of proof.

M5P3. Students will communicate mathematically.

- a. Organize and consolidate their mathematical thinking through communication.
- b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- c. Analyze and evaluate the mathematical thinking and strategies of others.
- d. Use the language of mathematics to express mathematical ideas precisely.

M5P4. Students will make connections among mathematical ideas and to other disciplines.

- a. Recognize and use connections among mathematical ideas.
- b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
- c. Recognize and apply mathematics in contexts outside of mathematics.

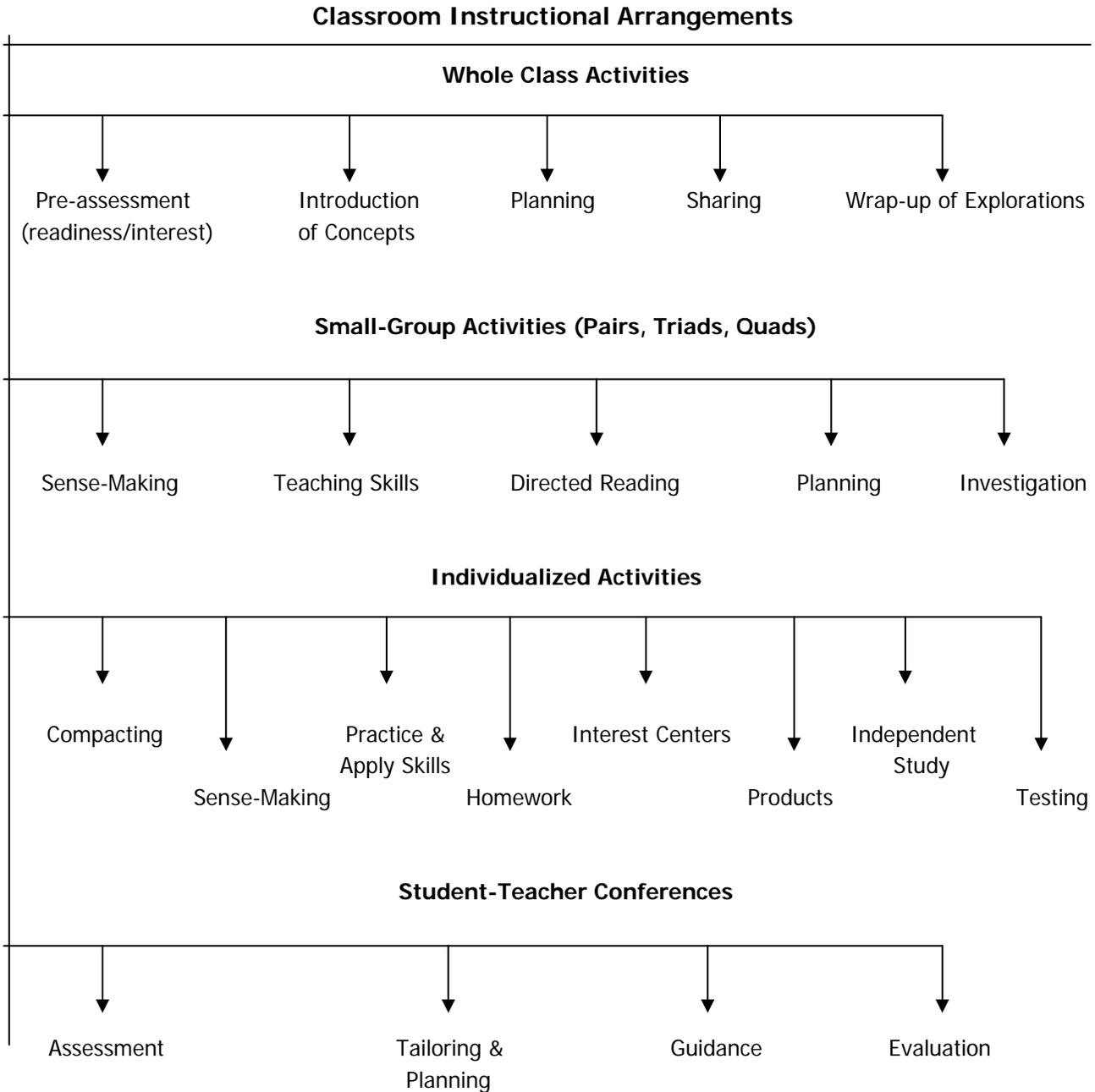
M5P5. Students will represent mathematics in multiple ways.

- a. Create and use representations to organize, record, and communicate mathematical ideas.
- b. Select, apply, and translate among mathematical representations to solve problems.
- c. Use representations to model and interpret physical, social, and mathematical phenomena.

Terms / Symbols:

simplify, common denominator, greatest common factor, least common multiple, congruence, %, percent, improper fraction, divisibility, multiple, factor, estimate, volume, tiling, irregular polygon, polygon, capacity, circumference, diameter, pi, circle graph, cup, pint, quart, gallon

Range of Activities in a Differentiated Classroom



Carol Ann Tomlinson, *How to Differentiate in Mixed-Ability Classrooms*, 2nd ed., Alexandria: ASCD, 2001, 25.

Pre-Assessment Strategies

- ✓ teacher prepared pretest
- ✓ KWL charts and other graphic organizers
- ✓ writing prompts/samples
- ✓ questioning
- ✓ guess box
- ✓ picture interpretation
- ✓ prediction
- ✓ teacher observation/checklists
- ✓ student demonstrations and discussions
- ✓ initiating activities
- ✓ informational surveys/questionnaires/inventories
- ✓ student interviews
- ✓ student products and work samples
- ✓ self-evaluations
- ✓ portfolio analysis
- ✓ game activities
- ✓ show of hands to determine understanding: every pupil response
- ✓ drawing related to topic or content
- ✓ standardized test information
- ✓ reader response survey
- ✓ anticipation journals

Glossary

Ability Grouping—Grouping students according to similar readiness levels or learning profiles.

Alternate Assignment—Assignments given to particular students or groups of students in lieu of the assignment given to the other members of the class. These assignments are designed to capitalize on student readiness levels, interests, or learning profiles.

Anchor Activity—A task or activity that a student automatically moves to upon completion of other assigned work.

Cluster Grouping—Flexible grouping and regrouping of students within a classroom to accommodate different instructional needs at different times and/or for different subject or content, different readiness levels, interests, or learning profiles.

Compacting—Modifying or streamlining content, process, or product in order to eliminate repetition of previously mastered material.

Contracting—Students contract for grades and/or choose from a variety of available project/product options.

Cooperative Learning—Students work with other students in groups to achieve a specific goal or purpose. Each group member has a particular, predetermined role in helping the group reach its goal.

Exit Cards—Teacher distributes index cards to students a few minutes before the end of class. Students respond quickly to a specific prompt such as “What’s the most important thing you learned today?” Exit cards provide a quick and easy method of assessing understanding.

Flexible Grouping—Purposeful reordering of students into a variety of different groups in a short amount of time in order to ensure that all students work with a number of different students on a regular basis. Criteria for grouping—readiness, interest, learning profile, activity or task, content—will vary regularly as well.

Interest Centers/Groups—Interest centers (often used with younger learners) and groups (often used with older learners) allow students choice in an area or areas of study.

Independent Study Projects—A student or small group of students pursues an area of interest related to a specific topic, curricular area, or individual area of interest.

Literature Circles—Small groups of students read and/or study different books with varying degrees of difficulty and/or focusing on a variety of topics of interest.

Product/Project Options—Students chose from a variety of options the way that they will provide evidence of learning. These options allow students to utilize their individual strengths and interests.

Pyramid Activities—Any activity that begins with students working individually, progresses through pairs, groups of four, etc., until ending with the whole-class group. A good way to review material or to practice test-taking strategies. Students may begin by individually recording what they know and then add to or change their responses as they collaborate with other students.

Questioning Strategies—Different types of questions are employed before, during, and after an activity, a lesson, or a unit of instruction to engage and challenge students to demonstrate their understanding from the knowledge level to the evaluation level. These questions allow students to clarify their thinking, increase their knowledge, and deepen their understanding.

RAFT Activities—Students select a Role, Audience, Format, and Topic for a particular task. The task vary but may include writing, oral presentations, skits, review activities, etc.

Reader's Workshop—This student-centered, instructional model for “real reading” uses authentic literature and allows students to self-select books. Students read at their own pace, reflect on what they read, and talk about their reading with others.

Reading Buddies—One name for peer reading partners, pairs of students who assist each other in reading for comprehension. They may take turns: one reading aloud and the other summarizing OR one reading aloud while the other formulates questions about that reading, etc.

Scaffolding—This refers to any support system that enables students to succeed with tasks they find genuinely challenging.

Subject/Content Acceleration—A student or group of students moves to a higher level of at an earlier time or age than the other students.

Thinking Maps—Visual representations of ideas that allow students to “unpack” their thinking and organize ideas in a visual format rather than solely in sentences or paragraphs.

Tiered Assignments—Teachers adjust the degree of difficulty for a particular assignment or task in order to meet the needs of students with varying levels of readiness, varying interests, and/or varying learner profiles.

Writer's Workshop—This student-centered, instructional model for “real writing” uses authentic assignments that allow students to participate in differentiated activities while participating in all stages of the writing process. Students spend time on self-selected writing activities.



Recommended Readings/Viewings/Websites: Differentiation

Note: A more general list of resources for the standards-based education process is contained in the materials for Day 1 of training.

At Work in the Differentiated Classroom. Alexandria, VA: ASCD, 2001.

This excellent resource includes three VHS tapes and a Facilitator's Guide. The videos provide clips of real differentiated classrooms and include commentary by Carol Ann Tomlinson. One set of these materials is being sent to each local system.

Berger, Sandra L. "Differentiating Curriculum for Gifted Students." 1991. Information Center on Disabilities and Gifted Children. Council on Exceptional Children, 1996. <http://ericec.org/digests/e510.html>.

Berger provides an overview of four areas of differentiation: content, process, product, and learning environment. In addition, she lists seven guiding principles for curriculum differentiation developed by the curriculum committee of the Leadership Training Institute.

Hall, Tracey, Nicole Strangman, and Anne Meyer. "Differentiated Instruction and Implications for UDL Implementation: Effective Classroom Practices Report." *Ideas that Work*. National Center on Accessing the General Curriculum. U.S. Office of Special Education Programs. CAST, Inc. 1999-2005. http://www.cast.org/publications/ncac/ncac_diffinstructudl.html.

This report examines information on the theory and research behind differentiated instruction and the intersection with Universal Design for Learning (UDL), a curriculum designed approach to increase flexibility in teaching and decrease the barriers that frequently limit student access to materials and learning in classrooms. The report includes a number of links to sites with more information about differentiated instruction.

"Interact Graphic Organizers." *Write Design Online*. zNet. <http://www.writedesignonline.com/organizers/interact.html#interaction>.

Using varying types/levels of graphic organizers provides one means of differentiating content or process. This website includes a number of different types of graphic organizers along with explanations and suggestions for their use. Links to other resources may also be valuable.

"The I-Search Curriculum Unit." *Literacy Matters*. Education Development Center, Inc., 2003-04. <http://www.literacymatters.org/content/isearch/intro.htm>.

Individual and group investigations, valuable strategies for differentiation, may be organized as I-Searches. An I-Search can actively engage students in the research process as they pursue questions of importance that they care about. This site explains one version of the I-Search process.

Laternau, Joseph. "Standards-Based Instruction for English Language Learners." Honolulu: **Pacific Resources for Education and Learning**. http://www.prel.org/products/pc_standards-based.htm.

This article examines the potential benefits of standards-based instruction for English Language Learners (ELLs), presents a standards-based process for designing standards-based instructional units, and reviews the design of two standards-based units for ELLs. The benefits of performance standards for ELLs are clearly represented in a chart included in the article.

Murawski, Wendy W., Dieker, Lisa A. (2004, Vol. 36, No. 5). Tips and Strategies of Co-Teaching at the Secondary Level. *Teaching Exceptional Children*, 52-58.

Teaching Styles Inventory. Texas Collaborative for Teaching Excellence. CORD, 2005. <http://www.texascollaborative.org/tools/TSI.pdf>.

Use this twelve item teaching style inventory to self-assess and self-score your teaching style in the areas of concept representation, learning, interaction, and cognitive processing.

Tomlinson, Carol Ann. *How to Differentiate in Mixed-Ability Classrooms*. 2nd ed. Alexandria, ASCD, 2001.

This valuable resource explains both the theory behind and the means to achieve differentiation in mixed-ability classrooms. Each school received one copy of this resource along with other materials in the fall of 2004.

----- "Mapping a Route Toward Differentiated Instruction." *Educational Leadership* 57.1 (Sept. 1999): 12-16. http://pdonline.ascd.org/pd_online/diffinstr/e1199909_tomlinson.html.

Tomlinson provides a view into three separate classrooms to illustrate what a differentiated classroom does and does not look like.

-----. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, ASCD, 1999.

In this book, Tomlinson discusses the what, how, and why of differentiation, and provides examples from a number of differentiated classrooms.

Tomlinson, Carol Ann, and Caroline Cunningham Eidson. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades K-5*. Alexandria, VA: ASCD, 2003.

This resource provides a brief primer on differentiation, as well as six differentiated units of instruction for grades K-5: two language arts units, two mathematics units, one science unit, and one social studies unit.

-----. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades 5-9*. Alexandria, VA: ASCD, 2003.

This resource provides a brief primer on differentiation, as well as six differentiated units of instruction for grades 5-9: one language arts unit, one mathematics unit, one science unit, two social studies units, and one French unit.

-----. *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades 9-12*. Alexandria, VA: ASCD, 2005.

This resource is scheduled to be published in August of 2005.

Mathematics

Danielson, Charlotte. *A Collection of Performance Tasks and Rubrics: Middle School Mathematics*. Larchmont, NY: Eye on Education, 1997.

Illuminations. <http://illuminations.nctm.org/index.asp>

Intermath. <http://www.intermath.uga.gatech.edu>

National Library of Virtual Manipulatives. <http://nlvm.usu.edu/en/nav/vlibrary.html>

Northey, Sheryn Spencer. *Handbook on Differentiated Instruction for Middle and High Schools*. Larchmont, NY: Eye on Education, 2005.

Strong, R., Thomas, E., Perini, M., & Silver, H. (2004, February). Creating a Differentiated Mathematics Classroom [Electronic version]. *Educational Leadership*, 61(5), 73-78. http://www.ascd.org/members/ed_lead/200402/strong.html.

Van de Walle, John A. *Elementary and Middle School Mathematics: Teaching Developmentally, Fifth Edition*. New York, NY: Longman Press, 2004.

Van de Walle, John A. and LouAnn Lovin. *Teaching Student-Centered Mathematics: Grades 5-8*. Boston, MA: Pearson Allyn & Bacon, 2006.

Suggested Learning Style Inventories

Style Delineator

- Dr. Anthony Gregorc
- <http://www.gregorc.com>

The Learning Type Measure (LTM)

- <http://64.226.183.123/ltm-purchase.htm> (cost \$8.00)

Index of Learning Styles Questionnaire

- Solomon and Felder, 1993
- <http://engr.ncsu.edu/learningstyles/ilsweb.html>

Myers-Briggs Type Indicator (MBTI)

- Myers, McCaulley, 1985
- <http://www.humanmetrics.com/cgi-win/JTypes2.asp>

Kiersey Temperament Sorter II

- Kiersey, 1998
- <http://www.advsorteam.com>

Brain Scan

- Dr. Ron Rubenzer
- *Handbook on Differentiated Instruction for Middle and High Schools*, Sheryn Spencer Northey, Eye on Education, Inc. 2005, p. 8.

Learning Styles Inventory

- Dr. Pat Wyman
- www.howtolearn.com

Learning Channel Preferences

- Dr. Lynn O'Brien, 1990
- www.way2go.com

4Mat System

- Bernice McCarthy, 1981
- *Handbook on Differentiated Instruction for Middle and High Schools*, Sheryn Spencer Northey, Eye on Education, Inc. 2005, p. 13.

Four Learning Styles

- Silver, Strong, and Perini, 2000
- Creating a Differentiated Mathematics Classroom [Electronic version]. *Educational Leadership*, 61(5), 73-78. http://www.ascd.org/members/ed_lead/200402/strong.html

What Kind of Fruit Are You?

- Katherine Butler, 1987
- <http://www.learnersdimension.com>

Multiple Intelligences

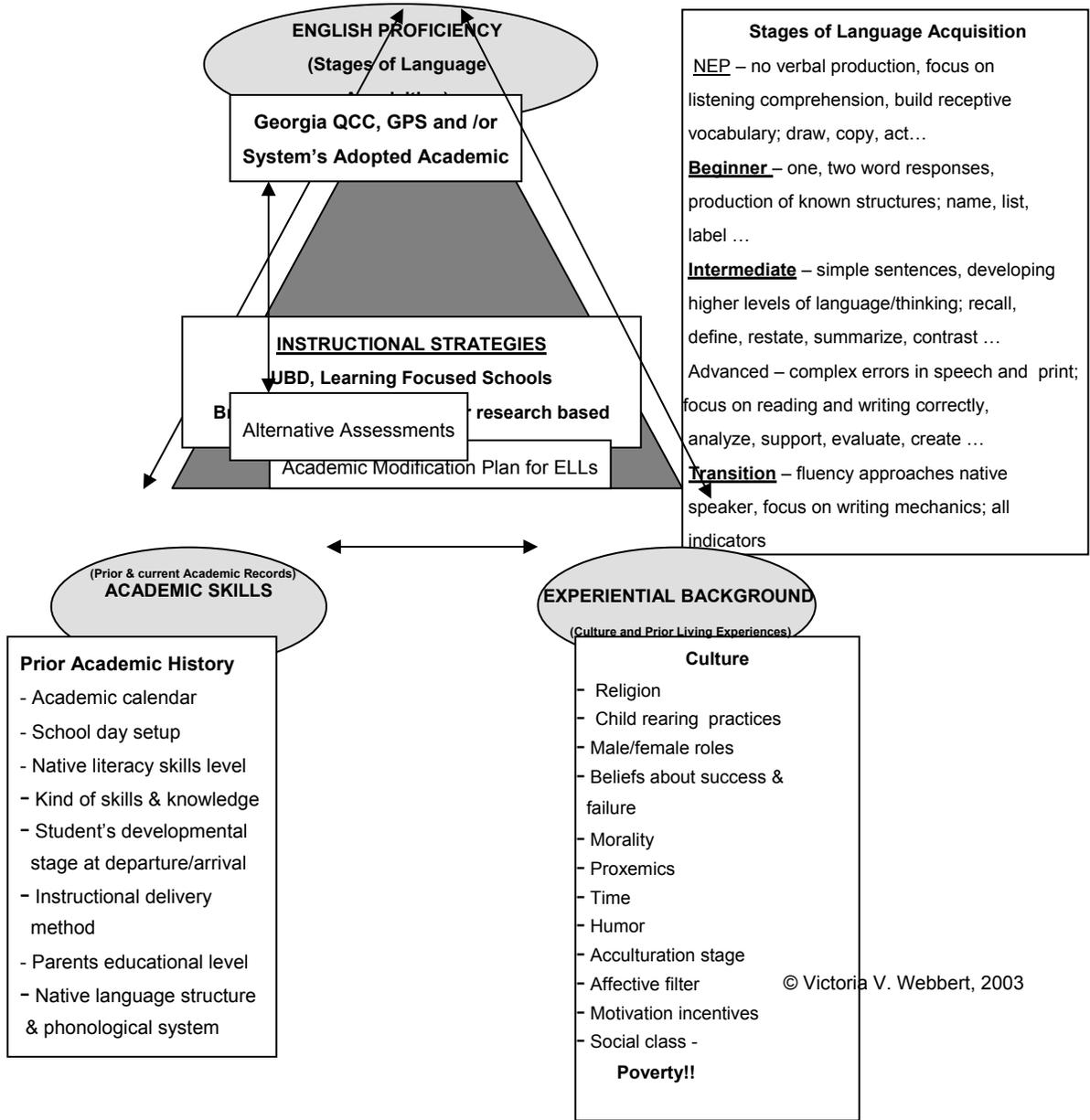
- Harold Gardner, 1993
- *Multiple Intelligences: The Theory in Practice*. New York. Basic Books.

Multiple Intelligences Checklist

- A Personal Tour of Multiple Intelligences, 1994
- Citizens Education Center. *Teaching and Learning through the Multiple Intelligences*
- 310 First Avenue South, Suite 330, Seattle, WA 98104, ISBN: 206-624-9955

Pre-Assessing the English Language Learner

Framework for Understanding the Learning of PHLOTE & ELL Students: Who Am I Teaching?



Instructional Accommodations for ELLs

Accommodations for ELLS are appropriate and effective only to the level that these match the English language learners proficiency in English, prior academic knowledge and cultural learning patterns.

<p>give tests orally rather than in written form give more time to complete assignments allow same-language buddy to assist require fewer responses to demonstrate mastery permit incomplete sentences in responses permit ungrammatically correct sentences in responses provide lower level text on content material provide video on content material provide text on tape highlight key points reduce number of key points that student is responsible for knowing give advanced organizers/study guides permit open book tests use graphic organizers give written instructions as well as oral make a written record of instruction and display it on chart paper take time to develop students' prior knowledge of new topics increase % of student talk about topic (more discussions) break students into small groups for discussion plan for group work use demonstrations when possible present model of work done well at the beginning of the assignment use hands-on activities when possible give sufficient wait time after asking questions adapt homework requirements to reflect stage of language development</p>	<p>use performance based assessment when possible adapt project/assignment requirements so students can participate provide learning centers (language masters, books on tape, magazines for classifying and developing picture dictionaries, language based games) provide additional examples pair verbal directions with visual clues provide computer time (phonics software, <i>Kidspiration</i> graphic organizer software, internet) seat student near teacher or positive role models relate content to real life present tasks from easy to hard reduce details needed to learn main concepts use simpler vocabulary or paraphrase look at students when talking use audio-visual aids frequently provide student with outline of lesson notes use peer assisted note taking use role-playing use games provide self-checking materials use different colors for worksheets use enlarged type on worksheets reduce the length or amount of work mark only correct answers do NOT write the name of a Korean student in red...it means death give short quizzes/avoid long tests allow the use of a dictionary during tests allow student to take tests until passes/emphasize mastery</p>
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What Does Differentiated Instruction Look Like?

Differentiated Instruction is...	Differentiated Instruction is NOT...
1. Assessing students before a unit of instruction to determine what they already know	1. All students in the class completing the same work for a unit/chapter
2. Adjustment of the core curriculum by content (below to above grade level), process (concrete to abstract), and product (simple to complex)	2. Limiting how and what is taught by teaching to the average student
3. Providing assignments tailored for students of different levels of achievement	3. Assigning more work at the same level to high achieving students
4. Having high expectations for ALL students	4. Focusing on student weaknesses and ignoring student strengths
5. Educational experiences which extend, replace, or supplement standard curriculum	5. Activities that all students will be able to do
6. Structuring class assignments so they require high levels of critical thinking and allow for a range of responses	6. Giving the same kind of problems or questions and expecting more
7. Students participating in respectful work	7. Creating more work-extra credit, do when done
8. Students and teachers collaborating in learning	8. Using higher standards when grading
9. Putting students in situations where they don't know the answer- often	9. Providing free-time challenge activities
10. Differing the pace of instruction	10. Using capable students as tutors
11. A blend of whole class, group, and independent learning	11. Using individualized instruction

Georgia Department of Education, GPS Differentiation Menu

For students who have difficulty with writing/composing written material:

- cooperative learning groups
- word processing application
- dictation to a scribe or onto a tape
- demonstrate/role play
- oral responses, presentation, and assessments
- multi-media presentation
- graphic organizer
- extended time on timed tasks
- word prediction software
- *Co-Writer*, *Write Out Loud*, *Dragon Naturally Speaking*, or other software
- voice output computer programs
- spell check/grammar check (not allowed on standardized tests)
- task item rubrics
- teacher prepared format
- break work into manageable parts
- individual or small group test taking
- story starters
- sentence starters
- outlines
- tape recorded essays and oral presentations
- voice activated software
- portable word processor
- prewriting conference/prewriting activities
- illustrations
- K-W-L chart
- provide sample work
- debates
- proofreading checklist
- word bank/word wall
- matrix usage
- note taking assistance
- provide student with key words on essay tests
- abbreviate assignments
- adapted writing tools or other assistive technology, as appropriate

For students who have difficulty with reading/accessing written material:

- cooperative learning groups/group discussion
- extended time on timed tasks
- voice output computer programs
- talking dictionaries
- break work into manageable parts/presentation of small chunks of a passage
- individual or small group test taking
- testing with reader or scanable text readers
- books on tape/listening to recording/viewing film version of story
- text read to the student by adult or peer
- reading guides (highlighted text, summaries, etc.)
- Language Master
- tracking light or other tracking device
- colored overlays
- computer generated books
- answer "yes/no" questions for comprehension checks
- choral reading
- pre-reading summary

- electronic text (text reader)
- oral (or audio) presentation to student
- teacher introduction of vocabulary words
- paired reading
- picture cues
- illustrations to show comprehension
- *CoWriter*, *Write Out Loud*, other software
- K-W-L chart
- previewing topics to introduce vocabulary and key concepts
- listening guide to facilitate note taking
- links to prior knowledge/personal experience
- debates
- word bank/word wall
- other assistive technology, as appropriate

For students who have difficulty speaking:

- sign language interpreter/transliterator
- augmentative communication devices
- communication boards
- cooperative learning groups
- usage of other preferred means of communication
- demonstrate/play act tasks
- picture symbol program
- object symbols
- voice output computer programs
- object symbols
- voice output computer programs
- break work into manageable parts
- provide time to respond
- ask "yes/no" questions
- indicating correct answer by pointing
- assign written rather than oral reports
- avoid situations that create pressure
- other assistive technology, as appropriate

For students who have difficulty listening:

- cooperative learning groups
- visual presentation using computer software, such as *PowerPoint* or *Inspiration*
- break work into manageable parts
- repeat, rephrase, simplify statements and instructions
- provide time to respond
- use of literal, concrete speech
- visual aids
- preferential seating
- note taking assistance (copy or notes/note-taking guides/note taker)
- have student repeat instructions
- reinforce oral instructions with written instructions
- assistive technology, as appropriate

For students who have difficulty with mobility:

- cooperative learning groups
- switch use
- touch screen
- modified keyboards
- extended time on timed tasks (or waive timed tasks)
- modified handwriting and/or grid paper
- weighted pencils and other motoric devices

- slant board or wedge
- magnets, tape, or other paper stabilizers
- stabilized materials
- break work into manageable parts
- individual or small group test taking
- provide time to respond
- page turner
- flexible schedule/scheduled rest breaks
- provide assistance in manipulating classroom and personal materials
- note taking assistance
- adaptive or special furniture
- dictation to a scribe or onto a tape
- other assistive technology, as appropriate

For students who have difficulty attending to task:

- cooperative learning groups with specific tasks assigned
- rubrics
- graphic organizers
- extended time on timed tasks
- break work into manageable parts
- individual or small group test taking
- task analysis
- task analysis graphically displayed
- proximity control
- visual, verbal, and tactile cues
- gain student's attention before delivery of information
- flexible schedule/scheduled rest breaks
- preferential seating
- note taking assistance
- provide study guides for tests
- have student repeat instructions
- regular notebook/agenda checks
- give abbreviated assignments
- set time allotments for tasks
- organizer/daily planner/homework notebook/folders
- fewer items on each page
- allow students to mark answers in workbooks and test booklets
- select optimal time of day for assessments
- provide study carrel or other quiet work space with minimal distractions
- assistive technology, as appropriate

For students who have difficulty with organizations/study skills:

- cooperative learning groups
- graphic organizers
- extended time on timed tasks
- break work into manageable parts
- individual or small group test taking
- task analysis
- task analysis graphically displayed
- organizer/daily planner/homework notebook/folders
- provide time to respond
- preferential seating
- provide sample work
- task item rubrics
- provide study guides for tests
- have student repeat instructions
- regular notebook/agenda checks

- set time allotments for task
- fewer items on each page
- provide study carrel or other quiet work space with minimal distractions
- provide books to remain at home
- establish and post daily routines
- allow students to mark answers in workbooks and test booklets
- assistive technology, as appropriate

For students who are Deaf/Hard of Hearing:

- sign language interpreter/transliterater
- amplification equipment
- sound-treated classrooms/special acoustics
- visual presentation using computer software, such as *PowerPoint* or *Inspiration*
- highlighted vocabulary
- closed captioning for viewing movies and other video presentations
- cooperative learning groups
- demonstrate/play act tasks
- voice output computer programs
- individual or small group test taking
- give short, specific verbal instructions
- story webs
- story starters
- *Write Out Loud*, *CoWriter*, or other software
- peer scribe
- note taking assistance
- provision of class notes with critical information, test questions, and highlighted vocabulary
- preferential seating
- refrain from speaking with back turned to students
- provide a work space with minimal noise
- other communication aids (assistive technology), as appropriate

For students who are Visually Impaired:

- Braille text/Braille writer
- enlarged print
- print with optical devices
- tactile symbols
- calendar system
- auditory and electronic formats
- dark or raised line paper
- cooperative learning groups
- slant board
- individual or small group test taking
- low vision devices/magnifying equipment
- screen readers/text scanners
- audiotaped directions and text (Talking Books for the Blind)
- word processing program with voice output
- electronic Braille note takers
- positioning in class away from glare
- black print handouts
- primary typewriter
- preferential seating
- usage of grid paper
- special or adapted lighting
- other alternate formats, communication aids, or assistive technology, as appropriate

Student-Created Products

<p>Verbal</p> <p>anecdote audio recording ballad book report campaign speech characterization choral reading cinquain comedy act comparison conference couplet debate description dialog discussion documentary dramatization explanation fairytale/tall tale free verse interview jingle joke lecture lesson limerick mock interview monologue myth newscast nursery rhyme oral report panel discussion quatrain radio show radio commercial rap recorded dialogue rhyme weaving wire sculpture</p>	<p>riddle role-play song speech story telling survey</p> <p>Visual</p> <p>advertisement CD cover anagram animation annotated biblio. area graph artifact collection award banner bar graph blueprint book jacket booklet bookmark brochure bulletin board calendar cardboard relief cartoon chart checklist collage collection comic book costume cross-section crossword puzzle design diagram diorama display drawing film dialog dictionary</p>	<p>filmstrip flag flashcard flip chart flowchart game graphic greeting card hieroglyphic icon id chart illustration layout map mask mobile mosaic movie newscast outline painting pattern pennant photo essay photograph picture dictionary picture story pie chart playing card print puzzle scatter graph scenario scrap book scroll sign silk screen slide show stencil TV commercial timeline letter to editor limerick</p>	<p>transparency travel ad travel log tree chart video tape wall hanging weather map weaving web web page window shade word game word search</p> <p>Kinesthetic</p> <p>apparatus aquarium artifacts card game cardboard relief ceramics charade circuit boards clothing collage collection dance demonstration discovery center display dramatization equipment etching experiment fair food furniture gadget game hat imaginary play patent pen pal</p>	<p>improvisation instrument invention jigsaw puzzle kite laboratory learning center macramé mime mobile model origami parallel play paper mache play prototype puppet finger puppet marionette hand puppet puppet show puzzle quilt relief rubbing role play sand casting scavenger hunt service sewing cards shadow box simulation skit soap sculpture stage set stitchery terrarium tie-dye tool toy uniform vehicle riddle satire</p>
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<u>Written</u> advertisement autobiography book report booklet brochure business letter characterization classified ad comic book comparison computer prog. couplet creative writing critique database description	editorial essay fairy tale/tall tale field manual free verse friendly letter glossary guidebook handbook handout interview script job description joke book jot list journal article label law lesson plan	list log lyrics magazine magazine article manual metaphor myth new story ending newsletter newspaper newspaper article notes novel oath outline pamphlet parody	petition plan play poem prediction profile puppet show questionnaire questions radio script rating scale rationale recipe reference report research paper review rewritten ending	science fiction scroll short story skit slogan speech story story problems survey telegram TV script term paper test travel log vocabulary list yearbook
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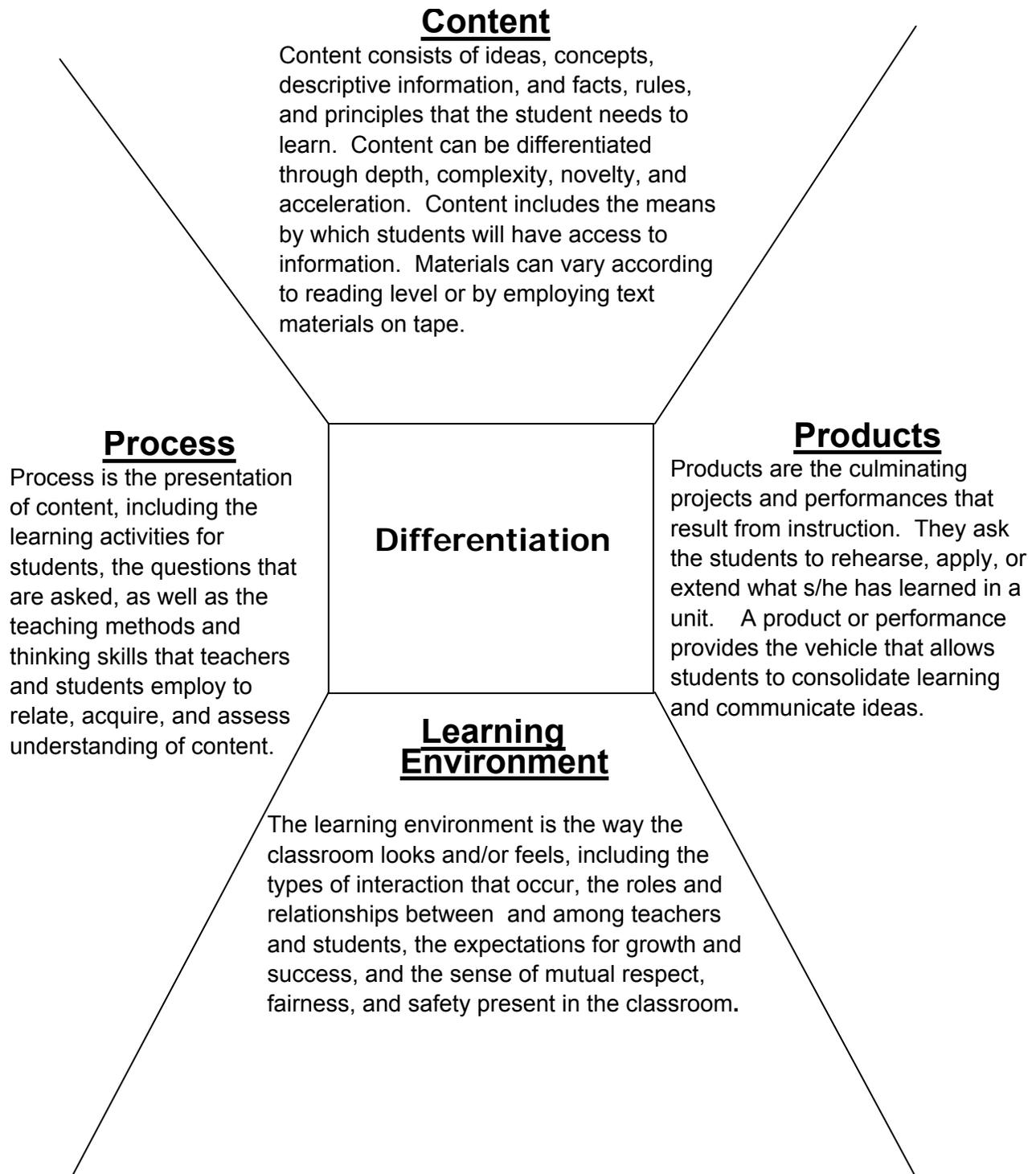
from GA Dept. of Education *Curriculum Guide for the Education of Gifted Students*, by Jim Curry and John Samara

Product Possibilities

Design a web page	Design political cartoons	Compile a newspaper
Develop a solution to a community problem	Formulate & defend a theory	Develop an exhibit
Create a public service announcement	Conduct a training session	Conduct an ethnography
Write a book	Design & teach a class	Write a biography
Design a game	Do a demonstration	Present a photo-essay
Generate & circulate a petition	Present a news report	Hold a press conference
Write a series of letters	Write a new law & plan for its passage	Develop & use a questionnaire
Present a mime	Make learning centers	Conduct a debate
Design & create a needlework	Create authentic recipes	Make a video documentary
Lead a symposium	Choreograph dances	Create a series of illustrations
Build a planetarium	Present a mock trial	Write poems
Conduct a series of interviews	Make a plan	Develop tools
Develop a collection	Compile & annotate a set of Internet resources	Design or create musical instruments
Submit writings to a journal, magazine, or newspaper	Design a new product	Compile a booklet or brochure
Interpret through multimedia	Write a series of songs	Draw a set of blueprints
Design a structure	Create a subject dictionary	Present a radio program
Design & conduct an experiment	Make and carry out a plan	Do a puppet show
Collect & analyze samples	Design a simulation	Create a series of wall hangings
Plan a journey or an odyssey	Write a musical	Go on an archeological dig
Make an etching or a woodcut	Develop a museum exhibit	Design & make costumes
Write letters to the editor	Be a mentor	Present an interior monologue
	Write or produce a play	Generate charts or diagrams to explain ideas

Carol Ann Tomlinson, *How to Differentiate in a Mixed-Ability Classroom*, 2nd ed., Alexandria, ASCD, 2001, 89.

What to Differentiate



Strategies for Managing a Differentiated Classroom

Carol Ann Tomlinson

1. Have a strong rationale for differentiation instruction based on student readiness, interest, and learning profile.
2. Begin differentiating at a pace that is comfortable for you.
3. Time differentiated activities to support student success.
4. Use an “anchor activity” to free you up to focus your attention on your students.
5. Create and deliver instructions carefully
6. Assign students into groups or seating areas smoothly.
7. Have a “home base” for students.
8. Be sure students have a plan for getting help when you're busy with another student or group.
9. Minimize noise.
10. Make a plan for students to turn in work.
11. Teach students to rearrange furniture.
12. Minimize “stray movement”.
13. Promote on-task behavior.
14. Have a plan for “quick finishers”.
15. Make a plan for “calling a halt”.
16. Give your students as much responsibility for their learning as possible.
17. Engage your students in talking about classroom procedures and group process.

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COLORED
PAPER!**

SCRAP WORK AND/OR NOTES:

Grade 3 Unit 6

Culminating Task “We’re Having a Party!”

You have square tables which will seat four people, one on each side. For the party, you will place the tables together to form a rectangle (no holes in the middle, solid rectangles!). Describe all the ways that you could arrange the tables to seat 48 people. Use pictures and charts for your solution.

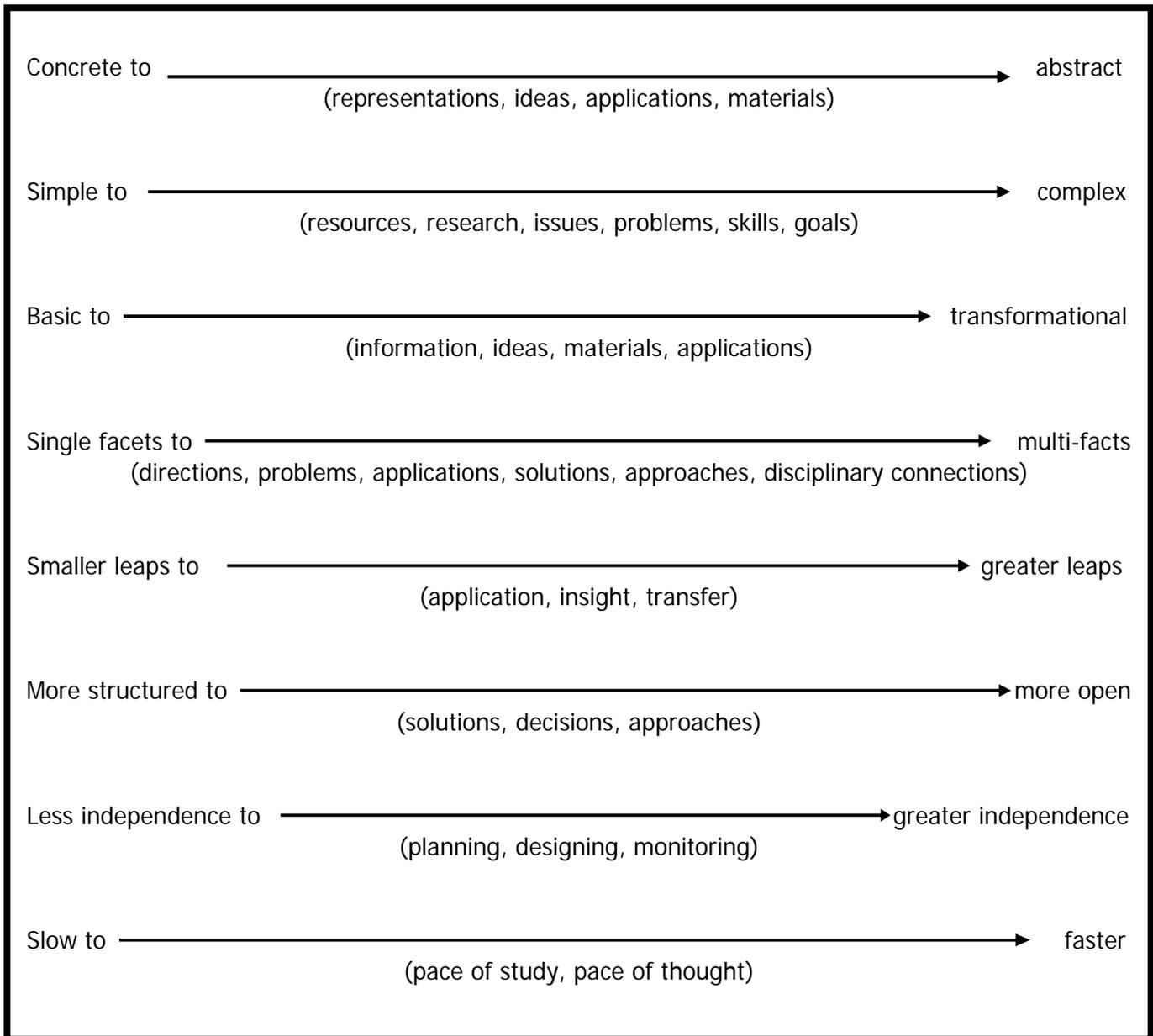
Find the largest number of tables that one can use as well as the smallest number of tables.

SCRAP WORK AND/OR NOTES:

Read each assumption and assess your own "way of thinking about teaching" by marking the star if this assumption is implicit when planning instruction, the smiley face if you take this assumption into consideration in some way during planning and the question mark if you need to think about your practice in terms of this assumption.

The Underlying Assumption	☆	😊	?
1. When planning, I accommodate multiple and varied learning needs (social as well as cognitive), rather than attempting to accommodate them after student frustration or failure.			
2. I work to create and maintain a classroom community where students feel safe and valued as they are; at the same time I support each student in order to maximize his or her potential.			
3. I interact with each student with positive regard and positive expectations.			
4. I recognize every student has both talents and areas of need, and I emphasize the student's strengths rather than accentuating labels, deficits, or differences. At the same time, I do not call attention to the differentiation, but rather I help students appreciate varied ways in which all of them can find personal success with important goals.			
5. I use multiple and alternative forms of assessment at all stages of student learning in order to uncover and address a full range of learning needs and strengths.			
6. I gather and employ knowledge and information about my students in order to identify and address their varied readiness levels, interests, and learning profiles.			
7. I find ways to provide opportunities for all students to access meaningful and powerful ideas, information, and skills rather than reducing the standards, watering down the curriculum, or assigning busy work.			
8. I use multiple methods to engage students in active learning. Although I may employ whole-class instruction, I question and encourage student discussions and explanations to enrich and remediate throughout the instruction.			
9. I work to develop classroom management skills that allow 1) multiple tasks to proceed smoothly in the classroom, 2) students to take increasing responsibility for their learning, and 3) the time to monitor student activity and coach for student growth and quality work.			

Based on the work of Stephanie Corrigan, Utah Valley State College. Adapted and modified from "The Facilitator's Guide," *At Work in the Differentiated Classroom*, Alexandria: ASCD, 2001, 57-58.

 **The Equalizer**

Differentiation

	Mastery	Understanding	Interpersonal	Self-Expressive

**Grade 4 Unit 4
Culminating Task "Polygon Challenge"**

You have been given the task of building at least two different polygons using pattern blocks. There are specific guidelines you must follow.

Part One:

Select the appropriate blocks for beginning your challenge. Here are the requirements for your building materials.

- Use a total of 8 blocks.
- You may only use trapezoids, triangles, hexagons, and rhombi pattern blocks for this activity.
- List the number of each shape and color that was used to build your polygon.
- Draw and color your polygon on graph paper.
- Label your polygon with the correct name.

Part Two:

Design a second polygon that is different from the first one that you built.

- List the number of each shape and color that was used to build your polygon.
- Draw and color your polygon on graph paper.
- Label your polygon with the correct name.

Directions: Mark the item T if it is TRUE for a differentiated classroom or F if it is FALSE for a differentiated classroom. After you have responded individually, compare your answers to the others in your table group. When you disagree, discuss your various points and attempt to reach consensus.

- _____ 1. Allowing all students in the class to complete the same work for a unit/chapter.
- _____ 2. Assessing students before a unit of instruction to determine what they already know.
- _____ 3. Adjusting the **core** curriculum by content (below to above grade level),
- _____ 4. Limiting how and what is taught by teaching to the average student.
- _____ 5. Providing assignments tailored for students of different levels of achievement.
- _____ 6. Having high expectations for **ALL** students.
- _____ 7. Providing educational experiences which extend, replace, or supplement Standard curriculum.
- _____ 8. Assigning more work at the same level to high achieving students.
- _____ 9. Focusing on student weaknesses and ignoring student strengths.
- _____ 10. Using activities that **all** students will be able to do.
- _____ 11. Structuring class assignments so they require high levels of critical thinking and allow for a range of responses.
- _____ 12. Giving the same kind of problems or questions and expecting more.
- _____ 13. Creating more work-extra credit, to do when done.
- _____ 14. Having students participating in respectful work.
- _____ 15. Putting students in situations where they don't know the answer often.
- _____ 16. Ensuring that students and teachers collaborating in learning.
- _____ 17. Providing free-time challenge activities.
- _____ 18. Differing the pace of instruction.
- _____ 19. Using capable students as tutors.
- _____ 20. Using higher standards when grading.
- _____ 21. Blending of whole class, group, and independent learning.
- _____ 22. Using individualized instruction.

A Traditional Classroom Compared to a Differentiated One

Traditional Classroom	Differentiated Classroom
1. Student differences are masked or acted upon when problematic.	1. Student differences are studied as a basis for planning.
2. Assessment is most common at the end of learning to see "who got it."	2. Assessment is ongoing and diagnostic to understand how to make instruction more responsive to learner need.
3. A relatively narrow sense of intelligence prevails.	3. Focus on multiple forms of intelligence is evident.
4. A single definition of excellence exists.	4. Excellence is defined by individual growth from a starting point.
5. Student interest is infrequently tapped.	5. Students are frequently guided in making interest-based learning choices.
6. Relatively few learning profile options are	6. Many learning profile options are provided. taken into account.
7. Whole class instruction dominates.	7. Many instructional arrangements are used.
8. Coverage of texts and/or curriculum guides drives instruction.	8. Student readiness, interest, and learning profile shape instruction.
9. Mastery of facts and skills out-of-context focus of learning.	9. Use of essential skills to make sense of the key concepts and principles is the focus of learning.
10. Single-option assignments are the norm.	10. Multi-option assignments are frequently used.
11. Time is relatively inflexible.	11. Time is used flexibly in accordance with student need.
12. A single text prevails.	12. Multiple materials are provided.
13. Single interpretations of ideas and events	13. Multiple perspectives on ideas and events are routinely sought.
14. The teacher directs student behavior.	14. The teacher facilitates students' skills at becoming more self-reliant learners.
15. The teacher solves problems.	15. Students help one another and the teacher solve problems.
16. A single form of assessment is often used.	16. Students are assessed in multiple ways.

Carol Tomlinson

<p>You are a very bright student. You can remember most factual information the first time it is presented. However, you have a problem remaining focused during traditional instructional activities (lectures, worksheets, etc.) When you stop working you will sometimes look around the class. If you finish work early, it is difficult to simply sit still and you may pester other students.</p>	<p>You are a gifted student. You are very interested in science. You often seek out information pertaining to science outside the normal course curriculum. You excel on your daily class work, but will become bored if you are required to complete whole class assignments instead of small group assignments.</p>
<p>You are an extremely quiet, intelligent young lady. You do not participate in class discussions, but consistently perform well on standardized tests. You turn in all of your homework and class work assignments. You receive A's in all of your courses, but dislike completing more difficult or challenging assignments.</p>	<p>You love to draw. You have a book of cartoon characters that you use your sketch paper to reproduce. You often put off individual classroom assignments to continue drawing the characters in your book. Your classmates have acknowledged your talent, and often comment on your superior ability.</p>
<p>You are a very smart student. However, you like to entertain the class with your jokes and spontaneous comments during whole class sessions. You make "funny" comments that actually go far beyond humor. The cutting effect of such comments is intentional. Your classmates often become distracted by your "off the wall" statements. Though you enjoy amusing the class, you complete your assignments on time. You receive A's and B's in all of your classes.</p>	<p>You are an average student. You like school because you are with people during the day. You are an only child and it is very quiet at home. Your favorite past time is reading adventure or science fiction novels.</p>
<p>You participate in various sports. You are a member of the basketball, football, and track teams. However, you are not consistent in turning in daily class work assignments. You rarely complete homework assignments, and are a mediocre student. You read sports magazines when you think you can get away with it. You are not a discipline problem, but do not seem to show an interest in anything besides sports.</p>	<p>You are an inclusion student. You feel a little uncomfortable being in a large class after years in a smaller setting. You think that many of the kids in your class are smarter than you are. As a result, you tend to withdraw during class discussions. You exhibit little or no effort on class assignments or projects. You can understand basic concepts and show potential when you try to complete the work you are given.</p>

<p>You like to write poetry and listen to music. You often look up your favorite artist's lyrics on the internet and attempt to memorize them. During class sessions it is not unusual for you to hum or sing quietly to yourself. Recently, your CD player was collected in class while you were listening to your favorite singing group. You aspire to become a famous singer and go on tour all over the world.</p>	<p>You are happy with your A's and B's on your report card. It makes you feel good inside when you finish a challenging assignment and you work very hard to make it perfect. However, you see no reason to do mundane or routine tasks and tend to make poorer grades on those types of assignments.</p>
<p>You are very talkative. You cannot wait for a break in the class session so you can exchange the latest gossip with one of your friends. You are a very poor listener and often do not realize you are talking. The teacher often has to tell you to stop talking at inappropriate times. You are a very bright student, but allow your talking to interfere with completing individual assignments.</p>	<p>You have trouble with your reading. Your standardized test scores reflect that you read several years below grade level. When you read aloud, some of the students laugh at you. You have trouble pronouncing basic words, and you possess low reading comprehension skills. You feel uncomfortable reading aloud in class because of the comments other children make toward you.</p>
<p>You always challenge the teacher's fairness regarding major tests. You seek out alternative measures to prove your ability. You may suggest to the teacher to take a different type of test or to be tested after the class is tested. You often argue over the correctness of answers on the test. The teacher feels you may be trying to escape blame for your failures, and use your behavior to gain attention from your peers.</p>	<p>You are a constant worrier. You worry so often it may lead you to becoming upset physically and mentally. You worry about tests, projects, and how people perceive you. You expect failure, and this expectation often deepens your worrying. Your feelings tend to lead to lack of participation and withdrawal during class activities.</p>
<p>You question everything. You ask an abnormal number of questions about every conceivable subject. You tend to ask questions even when you know the answer. You even interrupt lectures or class activities to ask questions. You make very good grades, and your favorite subject is math. You would love to become a math teacher someday.</p>	<p>You are extremely quiet and do not participate in class sessions. You sit in class and do nothing most of the time. You do enjoy playing various games on the computer, and you seem to make attempts to participate in class sessions that involve review games (i.e., Jeopardy, Wheel of Fortune).</p>

<p>You approach every task with an "I can't" attitude. Your teacher thinks you lack self-confidence. You even claim to be unable to complete assignments that you have done previously. You feel it is much better to say, "I can't" than to attempt any task. You will attempt to do rudimentary assignments, but refuse to do anything that requires you to complete complex tasks.</p>	<p>You are an average student. You receive B's and C's in your core classes. You infrequently complete your homework and class work. Your dad taught you how to work on cars. You know how to change oil, check tire pressure, and make other minor car repairs. You enjoy taking things apart and putting them back together. You also enjoy working on electronic devices such as game boys, radios, and even computers.</p>
<p>You seem to be satisfied with second place. You intentionally identify the classmate who is first or the most intelligent pupil. You feel that you are only worthy of second place. You are capable of being a top student, but you seem to have a sense of inferiority. You tend to idolize the first-place student, and your lack of self-confidence makes you feel you could never be first.</p>	<p>You are overwhelmed with the number of assignments you have yet to complete. You get so far behind you cannot seem to catch up. Every class day seems to dig you deeper and deeper into the hole of failure. You get very frustrated when you are unable to finish your class work or assigned projects. You try to do your best, but you can never seem to catch up.</p>
<p>You are an inclusion student. You demonstrate a high degree of ability on the individual assignments you turn in. However, you always want to do what the group is doing. You have a tendency to see yourself as always "part of the group." You can complete assignments on your own, but seek attention from your classmates to validate yourself.</p>	<p>You love school. At home, you sometimes pretend that you are still at school. You enjoy learning new things and are happy to do whatever the teacher asks you to do. After school, you take ballet lessons and have actually become very good on your toes.</p>
<p>You make strange sounds or noises in the classroom. Some of your common odd noises include: hums, whistles, throat noises, and tapping on your desk. You play the violin in the orchestra, and love listening to classical music. Sometimes the noise you make prevents you from completing your assignments and may distract other students.</p>	<p>You never finish a project. You love to plan large-scale projects, but you never come close to completion. When you work in a group situation, you will praise those that go along with your elaborate ideas and ridicule the more conservative group members. Your goals are often too high for successful achievement, and you leave the majority of the work for your group members to complete.</p>

<p>You are a student that has been retained several times during your schooling. Many of your past teachers passed you reluctantly because they did not want to deal with your disrespectful behavior another year. You have the ability to perform on a satisfactory level in a school setting, but you have yet to reach your full potential. You do not work up to your ability level, and have taken on an indifferent attitude toward school because of past failures. You feel uncomfortable at times because you are older than the other students, and this makes you feel a little insecure.</p>	<p>You have a lot of energy. You can't sit still for more than 10 to 15 minutes at a time. You appear to be fidgety and have a very short attention span. You frequently get out of your seat without permission and walk around the classroom. If you are not out of your seat, you are raising your hand to ask permission to leave the room. Your most common requests include: a) "Can I go to the restroom?" b) "I left my book in my locker. Can I go get it?" or c) "Can I go see the counselor?"</p>
<p>You display an "I don't care" attitude toward school. You repeatedly say, "I don't care" to teachers, students, and other school personnel. You show disgust and lack of interest in many of your class activities.</p>	<p>You are an above average student, and a perfectionist. You take more time to complete assignments than other students in the class because you want to make sure your answers are correct and your penmanship is neat.</p>
<p>You like to be the first person finished with your assignments. You are an intelligent young man, but you rush through your work so you can be the first person complete. Occasionally, the speed at which you complete your assignments results in incorrect answers.</p>	<p>You are a good student. However, English is not your first language. Sometimes you struggle with comprehending the content of your textbooks because you are primarily a Spanish-speaking student.</p>
<p>You are every teacher's favorite student. You consistently work to the best of your ability on every assignment. If you finish early, you gladly assist the teacher or help other students complete their work.</p>	<p>You have to work harder to understand ideas and concepts; but once you do, you never forget. You are always willing to spend extra time on assignments.</p>
<p>You are happy where ever you are and whoever you are with at the time. It makes you feel good to help other people and school is no exception. You volunteer at the homeless shelter and enjoy helping the little old lady that lives next door.</p>	<p>You are very shy. Because your parents just recently went through a divorce, you and your Mom have just moved to Georgia after living your entire life up to now in the same house. You miss your friends back 'home' very much and fear that you will never make any new ones here. You made B's and C's before, but you are determined to make better grades in your 'new life'.</p>

<p>You are an extremely bossy student. You are very opinionated, and do not hesitate to interrupt lectures or class activities to challenge the validity of a concept presented. You do not work well in groups because you attempt to perform all the tasks yourself without the assistance of other group members. Your classmates despise you and avoid working with you whenever possible.</p>	<p>You enjoy playing on-line games in your spare time and have become very proficient at it. Because of the many hours that you spend with this activity, it is easy for you to think quickly and make decisions. However, most of the assignments at school are not as exciting as the games and sometimes you daydream a little in class when the teacher talks for long periods of time.</p>
<p>You do not complete your assignments because you say, "I've never seen this before" or "I don't know anything about that". You repeatedly make comments like, "What?" "How did you do that?" "Huh?" and "Could you do that again?" The teacher questions whether you really do not understand or if you are "playing dumb." You may be using this as a means to excuse yourself from performing in the classroom.</p>	<p>You have discovered the opposite sex! It is very hard to focus in class because of the really cute student sitting across the room. Whenever the teacher calls on you, all you want to do is make a good impression and be noticed. You like to make good grades and usually do, but recently, your grades have started to fall.</p>
<p>You complain about every assignment you are given. Your teacher usually writes the assignment on the board or tells the class when a project is due with very little input from the students. You complete the majority of your work, but dislike the redundant tasks you complete in class. In your spare time you write and perform in plays for your local community center. You recruit younger kids from the neighborhood to participate in your productions. You often wish your classes at school were just as exciting as the performances at the community center.</p>	<p>You are new to the USA and know very little English. Math has always been your favorite subject and you expect to do well in class because the numbers are the same. However, you have noticed that there is a good bit of reading required in your new math class. This has you very motivated to learn the language as fast as you can, but it is very frustrating at the moment.</p>

Grade 5 Unit 2 Culminating Task “Bargain Shopping”

****Adapted from A Collection of Performance Tasks and Rubrics: Upper Elementary School Mathematics by C. Danielson.***

It is time to go shopping for school supplies for next school year. You have ads from two local stores indicating their prices (which include sales tax) for different school supplies. Your mother has given you \$45.50 to spend, and wants you to find the best prices on things you will need.

While working this task, consider how you may differentiate the Content, Process, and Product to accommodate the various mathematical learning styles.

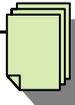
**mastery style,
understanding style,
interpersonal style, and
self-expressive style.**

School Supplies Needed

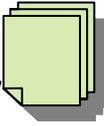
Eight folders
One calculator
Four packs of regular lined notebook paper (pack of 500 sheets)
Three ruler
Three bottles of glue
Thirty-three pencils
Ten pens
Five spiral notebooks
Two backpacks

1. Determine the cheapest store for each item on your list of school supplies needed. From which store would you buy each school supply? How much money will you have to spend? How much of the \$45.50 will you have left over?
2. With the money left over, you decide to buy each of your three siblings the same school supply item. What item would you purchase?
3. Is one store better than the other? Why or why not?
4. If you could only choose one store, which would it be? Explain your reasoning by writing an overall summary of your findings.

See bargain ads from two different stores shown below.

CHEROKEE DISCOUNTS		
<p>Calculator \$6.99</p> 	<p>Lined Paper 250 sheets Regular Price \$.93 One pack free with purchase of calculator</p> 	<p>Folder \$.15 each</p> 
<p>Erasers – large \$.52 each</p> 	<p>Clipboard \$2.15</p> 	<p>Book Covers 4 for \$2.00</p> 
<p>Glue 2 oz. bottle \$.95</p> 	<p>Backpack \$8.97</p>	<p>Pencils \$.11 each 10 pack -- \$1.01</p>
<p>Scissors \$1.75</p> 	<p>Pens \$.29 each \$3.56 – 15 pack</p>	<p>Ruler \$1.45 each</p>
	<p>Spiral Notebooks \$.99 each BUY FIVE GET ONE FREE</p>	

More bargain ads from a different store are shown below.

CANTON SUPPLIES		
<p>Calculator \$12.98 – regular price ON SALE FOR 1/2 OFF REGULAR PRICE</p> 	<p>Lined Paper 250 sheets Regular Price - \$.47</p> 	<p>Folders \$.11 each Buy 3 get one FREE</p> 
<p>Erasers – large \$.60 each</p> 	<p>Clipboard \$1.99</p> 	<p>Book Covers \$1.50</p> 
<p>Glue 2 oz. bottle \$.39</p>	<p>Backpack \$8.37</p>	<p>Pencils \$.69 each 10 pack -- \$2.02</p>
<p>Scissors \$2.13</p> 	<p>Pens \$.35 each \$4.08 – 15 pack</p>	<p>Ruler \$1.14 each</p>

Low-Prep and High-Prep Differentiation

Low-Prep Differentiation

Choice of books
 Homework options
 Use of reading buddies
 Varied journal prompts
 Orbitals
 Varied pacing with anchor options
 Student-teacher goal setting
 Work alone/work together
 Whole-to-part and part to whole explanations
 Flexible seating
 Varied computer programs
 Design-A-Day
 Varied supplementary materials
 Options for varied modes of expression
 Varying scaffolding on same organizer
 Let's Make a Deal projects
 Computer mentors
 Think-Pair-Share by readiness, interest,
 learning profile
 Use of collaboration, independence, and
 cooperation
 Open-ended activities
 Miniworkshops to reteach or extend skills
 Jigsaw
 Negotiated Criteria
 Explorations by interest
 Games to practice mastery of information
 and skill
 Multiple levels of questions

High Prep-Differentiation

Tiered activities and labs
 Tiered products
 Independent studies
 Multiple texts
 Alternative assessments
 Learning contracts
 4-MAT
 Multiple intelligence options
 Compacting
 Spelling by readiness
 Entry Points
 Varying organizers
 Lectures coupled with
 graphic organizers
 Interest groups
 Tiered centers
 Interest centers
 Personal agendas
 Literature Circles
 Stations
 Complex instruction
 Group investigation
 Tape-recorded materials
 Teams, Games, and
 Tournaments
 Tic-Tac-Toe
 Simulations
 Problem-Based Learning
 Graduated rubrics
 Flexible reading formats
 Student-centered writing
 Formats

Tomlinson, *How to Differentiate in Mixed-Ability Classrooms*, 34.

Redelivery Action Plan

Directions: Complete the following chart to create your individual plan for building a differentiated classroom. Consider the following:

- What am I already doing to differentiate?
- How can I assess and use student readiness, interests, and learning profiles to maximize learning growth for every student?
- How can I differentiate content, process, products, or the learning environment?
- How can I employ Tomlinson's Equalizer to create tiered assignments, activities, tasks, and products?

Step/Activity	Who	By When	How	Resources and Ideas

Assignments for Days 6 and 7 of GPS Training

For Day 6 for all grade levels and all content areas:

Each participant should bring a student work sample to Day 6 of training. Please use tasks from the Grade 8 Framework. This sample should include 4 copies of the student work, 4 copies of the assignment that generated the work including the standard(s) being assessed via this student work, and 1 copy of each of the two permission forms (teacher permission form and student/parent permission form). These forms are in the Participant's Guide for Day 5 of the training and in the back of this guide.

For Day 7 for all grade levels and all content areas:

As you work to implement the GPS standards this first year, please record your experiences in a notebook, journal, or other calendar format. Note any tasks, strategies, assessments, etc., that worked especially well; critical comments about particular standards (e.g., gaps that need filling, elements that are problematic, terms that need defining, etc.); suggestions for teachers/instructional leaders in high school who will be implementing the following year; thoughts or ideas about the second year of your implementation; etc. Please bring this record with you to Day 7 of training. The State Board of Education will be reviewing the GPS each year, and your comments will provide information for this review, as well as topics for discussion in training.

Teacher Permission Form for Student Work
CONSENT AND ASSIGNMENT

This Consent and Assignment (the "Assignment") is effective when signed by the undersigned Georgia educator ("Educator") and is between Educator and the Georgia Department of Education (the "GDOE"). For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree:

1. GDOE gratefully acknowledges the contribution Educator is hereby making to GDOE of the original work product (the "Work Product") created, developed, worked on or revised by Educator in connection with GDOE's Georgia Performance Standards Project (the "Project"). So that GDOE may fully use the Work Product in any manner it sees fit, including making copies, modifications and derivative works, Educator hereby fully and unconditionally transfers, assigns and conveys to GDOE all of Educator's copyright, ownership interests and other intellectual property rights in the Work Product (collectively, the "Intellectual Property Rights"). Educator further agrees that GDOE may publicly recognize and acknowledge Educator's contribution to, and involvement in, the Project.
2. This Assignment is governed by Georgia law, can only be amended if both parties do so in writing, is assignable solely by GDOE and supersedes any contrary oral or written agreement or understanding. Educator grants to GDOE the power and authority to execute any documentation deemed necessary by GDOE to register or protect the Work Product or Intellectual Property Rights therein or complete the full transfer of the Work Product and Intellectual Property Rights to GDOE which is the purpose of this Assignment.

"Educator"

Name:

Signature:

Print:

"GDOE"

Georgia Department of Education

By:

Title:

Date:

Parent/Guardian Permission Form for Student Work
CONSENT AND ASSIGNMENT

This Consent and Assignment (the "Assignment") is effective when signed by the undersigned legal guardian ("Guardian") on behalf of the Guardian and minor Georgia student named below ("Student"), and is among Guardian, Student and the Georgia Department of Education (the "GDOE"). For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree:

1. GDOE gratefully acknowledges the contribution Student and Guardian are hereby making to GDOE of the original work product (the "Work Product") created, developed, worked on or revised by Student. So that GDOE may fully use the Work Product in any manner it sees fit in connection with GDOE's Georgia Performance Standards Project (the "Project"), including making copies, modifications and derivative works, Guardian on behalf of Guardian and Student (and their heirs and successors) hereby fully and unconditionally transfer, assign and convey to GDOE all of Student's and Guardian's copyright, ownership interests and other intellectual property rights in the Work Product (collectively, the "Intellectual Property Rights"). Guardian further agrees that GDOE may publicly recognize and acknowledge Student's contribution to, and involvement in, the Project.

2. This Assignment is governed by Georgia law, can only be amended if both parties do so in writing, is assignable solely by GDOE and supersedes any contrary oral or written agreement or understanding. Student grants to GDOE the power and authority to execute any documentation deemed necessary by GDOE to register or protect the Work Product or Intellectual Property Rights therein or complete the full transfer of the Work Product and Intellectual Property Rights to GDOE which is the purpose of this Assignment.

"Guardian"

"GDOE"

Signature:

Georgia Department of Education

By:

Print Name:

Title:

Guardian's Relationship to Minor:

Date:

Print Minor's Name:
