Fall 2006

Differentiated Teacher Training for Differentiated Instruction

Kristi Steele
Regis University

Follow this and additional works at: https://epublications.regis.edu/theses

Part of the Education Commons

Recommended Citation
https://epublications.regis.edu/theses/428

This Thesis - Open Access is brought to you for free and open access by ePublications at Regis University. It has been accepted for inclusion in All Regis University Theses by an authorized administrator of ePublications at Regis University. For more information, please contact epublications@regis.edu.
Disclaimer

Use of the materials available in the Regis University Thesis Collection ("Collection") is limited and restricted to those users who agree to comply with the following terms of use. Regis University reserves the right to deny access to the Collection to any person who violates these terms of use or who seeks to or does alter, avoid or supersede the functional conditions, restrictions and limitations of the Collection.

The site may be used only for lawful purposes. The user is solely responsible for knowing and adhering to any and all applicable laws, rules, and regulations relating or pertaining to use of the Collection.

All content in this Collection is owned by and subject to the exclusive control of Regis University and the authors of the materials. It is available only for research purposes and may not be used in violation of copyright laws or for unlawful purposes. The materials may not be downloaded in whole or in part without permission of the copyright holder or as otherwise authorized in the “fair use” standards of the U.S. copyright laws and regulations.
DIFFERENTIATED TEACHER TRAINING FOR
DIFFERENTIATED INSTRUCTION

by

Kristi Steele

A Research Project Presented in Partial Fulfillment
Of the Requirements for the Degree
Master of Education

REGIS UNIVERSITY

August, 2006
ABSTRACT

Differentiated Teacher Training for Differentiated Instruction

Gifted, bright, unusual, struggling, and special education students are all intermixed in classrooms today. As a result, teachers are expected to differentiate their instruction to meet the varying needs of these students. Unfortunately, the training teachers receive is often inadequate. Experienced and inexperienced teachers have different needs. In this project, the author attempted to solve this problem by designing a staff development workshop that is broken into two sections. The first section is to discuss the reasoning behind differentiated instruction. The second section is for all teachers. This section examines how differentiated instruction stems from a clear purpose of instruction. At the end of the workshop, grade level teams leave with one or two units of study that are differentiated.
**TABLE OF CONTENTS**

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION ......................................................... 1</td>
<td></td>
</tr>
<tr>
<td>Statement of the Problem ........................................... 1</td>
<td></td>
</tr>
<tr>
<td>Purpose of the Project ............................................. 2</td>
<td></td>
</tr>
<tr>
<td>Chapter Summary ..................................................... 2</td>
<td></td>
</tr>
<tr>
<td>2. REVIEW OF LITERATURE ................................................. 3</td>
<td></td>
</tr>
<tr>
<td>Defining Differentiated Instruction ................................ 3</td>
<td></td>
</tr>
<tr>
<td>The Purpose of Differentiated Instruction ......................... 4</td>
<td></td>
</tr>
<tr>
<td>Special Education Students ........................................... 4</td>
<td></td>
</tr>
<tr>
<td>Gifted Students ....................................................... 5</td>
<td></td>
</tr>
<tr>
<td>Average Students ...................................................... 5</td>
<td></td>
</tr>
<tr>
<td>Differentiated Instruction in Action ................................ 6</td>
<td></td>
</tr>
<tr>
<td>Planning a Unit .......................................................... 6</td>
<td></td>
</tr>
<tr>
<td>Essential Questions ................................................... 7</td>
<td></td>
</tr>
<tr>
<td>Heacox (2002) ............................................................. 8</td>
<td></td>
</tr>
<tr>
<td>Wiggins and McTighe (2005) ............................................. 8</td>
<td></td>
</tr>
<tr>
<td>Points of Departure .................................................... 10</td>
<td></td>
</tr>
<tr>
<td>Process ................................................................. 10</td>
<td></td>
</tr>
<tr>
<td>Content ................................................................. 13</td>
<td></td>
</tr>
<tr>
<td>Product ................................................................. 14</td>
<td></td>
</tr>
<tr>
<td>Bloom and Gardner ..................................................... 15</td>
<td></td>
</tr>
<tr>
<td>Flexible Grouping ...................................................... 18</td>
<td></td>
</tr>
<tr>
<td>Assessment ............................................................... 18</td>
<td></td>
</tr>
<tr>
<td>Tools ................................................................. 19</td>
<td></td>
</tr>
<tr>
<td>Grading ................................................................. 21</td>
<td></td>
</tr>
<tr>
<td>Chapter Summary ....................................................... 21</td>
<td></td>
</tr>
<tr>
<td>3. METHOD ................................................................. 23</td>
<td></td>
</tr>
<tr>
<td>Target Audience ....................................................... 23</td>
<td></td>
</tr>
<tr>
<td>Procedures ............................................................ 23</td>
<td></td>
</tr>
<tr>
<td>Goals of the Workshop ................................................. 24</td>
<td></td>
</tr>
<tr>
<td>Peer Assessment ....................................................... 24</td>
<td></td>
</tr>
<tr>
<td>Chapter Summary ....................................................... 24</td>
<td></td>
</tr>
<tr>
<td>4. RESULTS ............................................................... 25</td>
<td></td>
</tr>
<tr>
<td>Staff Development Workshop ......................................... 26</td>
<td></td>
</tr>
<tr>
<td>...............................................................</td>
<td></td>
</tr>
</tbody>
</table>


Chapter Summary ................................................. 51

5. DISCUSSION ...................................................... 52
   Contribution of the Project ............................... 52
   Resolution of the Original Problem ................... 52
   Limitations of Project .................................. 52
   Peer Assessment ......................................... 53
   Recommendations for Future Research and Study .... 53
   Project Summary .......................................... 53

REFERENCES .......................................................... 54

APPENDICES
   A. Unit Plan .................................................. 58
      1. Unit Plan with Targets and Essential Questions 61
      2. Unit Plan with Assessments .......................... 64
      3. Unit Plan with Learning Activities ................. 67
   B. Essential Questions ..................................... 71
   C. Fraction Test ............................................. 73
   D. Fraction Menu ............................................ 77
   E. Constitution Graphic Organizer ....................... 79
   F. Writing Goals ............................................ 81
   G. Area and Perimeter Learning Activities ............. 83
   H. Performance Assessment on Fractions ................ 86
   I. Biography Project ...................................... 90
LIST OF TABLES

1. Fourth Grade Science Unit on Ocean Biosphere ........................................... 9
2. Geometry Unit .................................................................................................. 11
3. Matrix for Use with Bloom’s Taxonomy ......................................................... 16
4. Matrix for Use with Bloom’s Taxonomy and Gardner’s Multiple Intelligences .. 17
Chapter 1

INTRODUCTION

In 1997, the members of United States Department of Education reauthorized the Individuals with Disabilities Act (IDEA; Special Education Law Overview, 2005), which requires that teachers educate students with learning disabilities (LD) in the least restrictive environment (LRE). Children with exceptional academic gifts are placed within the same classrooms, especially elementary classrooms, as are the special education students. As communities have become global with the advent of the Internet as well as cheaper travel, students from many countries and, therefore, most languages may be placed within these same classrooms as well. As a result, education must change with the times. In Colonial America, education was meant for boys; now many schools are coeducational. Prior to the 1960s, schools could be segregated based on race; now, many ethnicities are represented within the public schools. Currently, the challenge to educators is to make learning accessible to all regardless of their backgrounds or abilities.

Statement of the Problem

At the beginning of each school year, elementary teachers meet a classroom full of students. These students may be in the same grade level, but their skills and abilities vary widely. To meet the needs of all students, many teachers turn to the educational model of differentiated instruction. In the Littleton Public School (LPS), teachers are trained in this complex technique each year. Prior to the commencement of each school year, the Coordinator of the Gifted Program for LPS provides training in differentiated
instruction for all teachers. Unfortunately, it is inadequate. Teachers with little
experience with differentiated instruction leave the training with only a vague
understanding of differentiated instruction and with no specific techniques to implement.
Teachers who do differentiate their instruction leave the same training with no new ideas.

Purpose of the Project

The purpose of this project was to provide staff development training on
differentiated instruction that meets the varied needs of the staff at Lois Lenski
Elementary School in LPS. This inservice is differentiated to meet the varied needs of
the staff and provides useful, pertinent information that can be utilized immediately by all
teachers. Teachers have the opportunity to plan units of study in grade level teams which
enhance their understanding of the curriculum and differentiated instruction.

Chapter Summary

This researcher believes that effective teacher training in differentiated instruction
is necessary to meet the varied needs of students today. Also, the training itself must be
differentiated to meet the needs of the staff.

In Chapter 2, a review of literature is presented to provide the reader with
background material on differentiated instruction and the current trends in this technique.
In Chapter 3, this author details the procedure used to develop this research project. The
staff development training is presented in Chapter 4. In the final chapter, the author
discusses the outcomes of the project.
Chapter 2

REVIEW OF LITERATURE

The purpose of this applied project was to develop a staff development training for elementary educators in the technique of differentiated instruction. It is the expectation of the administrators of Littleton Public Schools (LPS; 2005) that all teachers provide classroom opportunities so that all students can achieve and meet high standards. Yet, part of the student population is labeled with some type of disability that interferes with their learning. Additionally, others in the student population are identified as gifted, which indicates that they learn more quickly than their peers. Furthermore, the varied socioeconomic, primary language, and parental involvement of the student population affects the success of students. Teachers have little or no influence over these factors; however, they do have a great deal of influence over the instruction that their students receive.

Defining Differentiated Instruction

Differentiated instruction is a philosophy of teaching (Gregory & Chapman, 2002; Heacox, 2002). Teachers who differentiate believe that all students can learn if given the opportunities to succeed. For differentiated instruction to be successful, Heacox further described differentiation as being rigorous, relevant, flexible, and varied, as well as complex.
The Purpose of Differentiated Instruction

The ultimate goal of differentiation is for all students to obtain growth academically. If a student started the school year reading at a fourth grade level, for instance, the student should progress forward from that level regardless of his/her grade placement.

Special Education Students

Despite the expectations of the Individuals with Disabilities Act (1995, as cited in Waldron & McLesky, 1998), which requires students to be educated in the least restrictive environment (LRE), special education students have continued to be educated in pull-out programs. Nonetheless, Waldron and McLesky demonstrated that students with mild disabilities achieve more academic growth when they are placed in classrooms with their regular education peers in comparison to being pulled out for instruction. For these students in the regular education classrooms, academic growth can occur only if there are modifications for their abilities. These modifications or adaptations are easily made within a differentiated classroom.

For the best success with struggling students, teachers should: (a) communicate to students clear expectations/outcomes to students, (b) support students so they can attain those expectations/outcomes, (c) relate learning to students’ lives, (d) teach in many modalities, and (e) demonstrate a genuine belief in students’ abilities (Tomlinson, 2001). In this researcher’s opinion, Tomlinson’s recommendations can become second nature for use with all students when teachers internalize the belief that differentiated instruction is a teaching philosophy rather than a technique.
Gifted Students

Gifted students have different needs than their peers (Tomlinson, 2001). When the expectations for these advanced learners are below their ability, often, they become mentally lazy, focus on the grade rather than the learning, and lack the skills necessary to deal with challenges or failures. Tomlinson suggested the use of clearly stated high standards for advanced students as well as the support necessary for these students to achieve success.

Additionally, a common problem, according to Ford (2005), in the identification of gifted students is the disproportionate rate of identification based upon race. Students who are not Anglo American tend to be overlooked for gifted services. The use of differentiated instruction can help to counter balance this trend. All students have the opportunity to demonstrate their personal strengths when given choices within a differentiated classroom (Gregory & Chapman, 2002; Heacox, 2002; Tomlinson, 2001). Often, strengths outside the traditional area of giftedness (e.g., mathematics and language) are options for projects within a differentiated classroom. With the use of differentiated instruction, children who are gifted interpersonally or are highly creative can be provided with opportunities to demonstrate their gifts with or without the label of gifted student.

Average Students

Even students who are not labeled as disabled or gifted have different learning needs in this author’s experience. Some students are self-motivated to achieve, but do not have the innate ability to learn new material easily or quickly. Other students have the ability to achieve a great deal but do only enough to receive a passing grade. While
some may have a great wealth of knowledge, it is difficult for them to express their ideas in writing. All of these students are considered average, yet every teacher knows that average is a misnomer. Last year, in this researcher’s classroom, there was a range of average fifth grade students, from those who could not write in complete sentences to those who could craft a narrative piece far beyond grade level expectations. In any public school classroom, there will be a wide variety of abilities that the teacher must accommodate. The use of differentiated instruction helps teachers to provide appropriate activities to facilitate student learning.

Differentiated Instruction in Action

Organized chaos is one description of the activity in a differentiated classroom (Heacox, 2002). Everyone may be learning about Colonial America, for example, but no one does exactly the same thing or sits quietly in desks. Students have chosen specific topics within the broad topic of Colonial America. Some students compare information in several books at different reading levels while others find facts on the Internet. Students share information they found with classmates. Students move freely about the room and sit where they feel comfortable. Everyone reads, takes notes, and learns, but no one does it in the same manner. This is an example of 1 day within a differentiated classroom.

Planning a Unit

Planning is essential in differentiated instruction (Heacox, 2002; Tomlinson, 2001). A teacher must ensure that all students will be able to end a unit of study with an increase in knowledge. This means that the struggling student as well as the advanced student will move forward in their learning.
Essential Questions

Essential questions are the starting point for any unit of study (Heacox, 2002; Wiggins & McTighe, 2005). An essential question becomes the framework for the entire unit. All components of the unit refer back to the essential question(s). This is the starting and ending point.

Yet, to craft good essential questions takes time and practice. The questions must be broad enough to encompass an entire unit of study, but specific enough to have definite answers (Heacox, 2002; Wiggins & McTighe, 2005). Also, the questions must be broad enough to engage the students who already have knowledge of the subject as well as those who have no background knowledge. “Why do people move?” and “What happens because they moved?” are two good essential questions for a unit on exploration or immigration (Tomlinson & Eidson, 2003). These questions are broad enough to help the advanced learner delve deeper into the subject, while those with no background knowledge have a place to start.

Essential questions are different from the essential learning outcomes that some districts use instead of standards, targets, or objectives (Wiggins & McTighe, 2005). There are two main differences. One, essential questions are formed as questions which lead to engagement (Heacox, 2002). Students are more apt to find an answer to a question than find a list of facts to satisfy a stated objective. Students tend to be curious, so why not tap into that curiosity? Two, essential questions are written with students in mind. The questions are shared with students and, therefore, are student friendly. The Littleton Public Schools (LPS; 2001) objectives for the fifth grade exploration unit used as an example above are: “The learner will 1) Investigate the early European explorers
and their impact on the settlement of the U.S. . . [and] 2. Describe the effect that the
search for the Northwest Passage had on colonization” (p. 3). The previously mentioned
questions are much more accessible to students than these objectives.

Heacox (2002)

Heacox (2002) provided a format for the development of a differentiated unit of
study. She started with essential questions, but these questions are overarching questions
for the entire year rather than a specific unit of study. With these questions, students can
make connections between different units of study throughout the year. Unit questions
are developed to help students delve deeper into a specific topic while they refer back to
the essential questions. The combination of the questions helps the teacher and students
stay focused on the important aspects of the subject matter.

After the questions have been established, Heacox (2002) suggested mapping out
the curriculum. This consists of: (a) the state and/or district standards to be taught, (b)
topics to be covered, (c) skills to be learned, and (d) the products to demonstrate
understanding for a particular unit of study. Presented in Table 1 is Heacox’s example of
a unit of study on ocean biospheres for the fourth grade. Learning activities are planned
last. These will be discussed in greater detail in the section entitled Points of Departure.

Wiggins and McTighe (2005)

Another format that can be used to plan a unit of study was provided by Wiggins
and McTighe (2005). The first stage of their format included: (a) the goal of the unit, (b)
what the students will understand, (c) essential questions, (d) what students will know,
and (e) what students will be able to do. The second stage was for summative and
formative assessments. The final stage of planning was the learning activities for the unit
Table 1

*Fourth Grade Science Unit on Ocean Biosphere*

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Unit Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the characteristics of a biosphere?</td>
<td>1. What are the characteristics of oceans?</td>
</tr>
<tr>
<td>2. What are some typical plants and animals that live in each biosphere?</td>
<td>2. What plants and animals live in oceans?</td>
</tr>
<tr>
<td>3. How do plants and animals interact in each biosphere?</td>
<td>3. What food chains link ocean plants with ocean animals?</td>
</tr>
<tr>
<td>5. How have human beings affected biospheres?</td>
<td>5. How have human beings affected oceans?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Curriculum Standards&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Contents/Topics&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Skills&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Projects/Products&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write and speak for a variety of academic purposes.</td>
<td>Geography of oceans</td>
<td>Identifying attributes</td>
<td>Scale drawing</td>
</tr>
<tr>
<td>Inquire</td>
<td>Ocean habitats</td>
<td>Determining cause/effect</td>
<td>Food chain web</td>
</tr>
<tr>
<td>Gather information to answer questions.</td>
<td>Oceans animals</td>
<td>Classifying</td>
<td>Chart</td>
</tr>
<tr>
<td>Geography</td>
<td>Ocean plants</td>
<td>Comparing/contrasting</td>
<td>Illustration, mural, poster</td>
</tr>
<tr>
<td>Understand the interactions of people, places, and locations.</td>
<td>Environmental issues/Concerns</td>
<td>Identifying relationships</td>
<td>Venn diagram</td>
</tr>
<tr>
<td>Living Systems</td>
<td></td>
<td>Inventing</td>
<td>Belief statement</td>
</tr>
<tr>
<td>Understand the interactions and interdependence of living system.</td>
<td></td>
<td>Problem solving</td>
<td>Action plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drawing conclusions</td>
<td>Lyrics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Examining viewpoints</td>
<td>Scrapbook</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Role play</td>
</tr>
</tbody>
</table>

Wiggins and McTighe placed assessment before activities to force teachers to keep the end results in mind. When activities are left to the end, many teachers will understand which activities support the unit plan and which are extraneous. Table 2 is an example for a geometry unit in the State of Illinois using this format. From this unit plan or from Heacox’s (2002), one can then differentiate instruction based upon the needs of the students.

_points of Departure_

Once teachers have a firm idea of what is to be taught, they can then plan how to teach it based on the diversity within their classrooms. The goal is to have all students attain the unit objectives; however, the path that every student takes can be different.

_process_

The learning activities in which students participate, the process, are areas that can be differentiated (Heacox, 2002; Tomlinson, 2001). The difficulty of the task can be tiered so that students of different readiness abilities can successfully accomplish the task. For example, the use of literature circles provides all students the opportunity to read a mystery book, but there could be four different mysteries at different reading levels. In this example, each student would read the book that is closest to his/her reading ability, and all students would learn about the same genre despite the fact they read different books.

Student learning preferences is an additional method that can be used to differentiate the process (Heacox, 2002; Tomlinson, 2001). To continue the example from above, students could have the option to read silently to themselves before they discuss specific chapters with their group; or students could read aloud with a classmate.
Table 2

Geometry Unit

Stage 1: Desired Results

Established Goals:
- IL Math 7C3b, 4b: Use models and formulas to find surface areas and volume
- IL Math 9A: Construct models in 2D/3D; make perspective drawings

Students will understand that . . .
- The adaptation of mathematical models and ideas to human problems requires careful judgment and sensitivity to impact.
- Mapping three dimensional onto two (or two onto three) may introduce distortions. Sometimes the best mathematical answer is not the best solution to real world problems.

Essential Questions:
- How well can pure mathematics model messy, real world situations?
- When is the best mathematical answer not the best solution to a problem?

Students will know . . .
- Formulas for calculating surface area and volume
- Cavalieri’s Principle

Students will be able to . . .
- Calculate surface area and volume for various 3-dimensional figures
- Use Cavalieri’s Principle to compare volume

Stage 2: Assessment Evidence

Performance Tasks:
1. Packaging problem: What is the ideal container for shipping bulk quantities of M&Ms’ packages cost effectively to stores? (Notes: the “best” mathematical answer—a sphere—is not the best solution to this problem.)
2. As a consultant to the United Nations, propose the least controversial 2-dimensional map of the world. Explain your mathematical reasoning.

Other evidence:
- Odd numbered problems in full Chapter Review, pp. 516-519
- Progress on self-test, p. 515
- Homework: each third question in subchapter reviews and all explorations
Table 2 (continued)

Stage 3: Learning Plan

Leaning Activities:
- Investigate the relationship of surface areas and volume of various containers (e.g., tuna fish cans, cereal boxes, Pringles, candy packages)
- Investigate different map projections to determine their mathematical accuracy (i.e., degree of distortion).

a. Read chapter 10 in UCSMP Geometry
b. Exploration 22, p. 504
c. Exploration 22, p. 482
d. Exploration 25, p. 509


and confer about the content prior to the group meeting; or students could read chorally as a group, then stop to discuss the story as they read. These choices allow students the opportunity to gain the most from the experience based upon their preferred method of reading.

Alternatively, learning activities could be focused on the visual, auditory, or kinesthetic modes of learning. In the geometry unit discussed earlier (Wiggins & McTighe, 2005), students would have the opportunity to see, discuss, and draw different versions of the map of the world. Use of all three learning modalities allows all students a pathway into understanding the distortion that occurs when one moves from a 3 dimensional model to a 2 dimensional model.

Tomlinson (2001) suggested the use of a student’s interest to further differentiate the process. If all students learn the skill of writing a persuasive piece of writing, each
student can learn the same content while they write about a topic that is personally important. The writing skills are the same whether the student writes about the dangers of smoking or the perceived injustice of a school rule.

Content

What is taught to students can be differentiated (Heacox, 2002; Tomlinson, 2001). Based upon student background knowledge and ease of learning new facts and concepts, two to three learning tasks can be created. For example, students who have knowledge of the history of slavery in the United States could compare U.S. history to the current slave trade in the world while students who have difficulty with new concepts or have no background knowledge could study slavery in Colonial America and/or in early U.S. history.

Alternatively, a pretest could be utilized (Gregory & Chapman, 2002; Heacox, 2002; Tomlinson, 2001). For a unit on fractions, a pretest could ascertain which students need additional instruction and practice with basic fractional concepts and which students are ready for more advanced ideas.

Also, this method can lead to curriculum compacting (Gregory & Chapman, 2002; Tomlinson, 2001). When a student demonstrates knowledge of most, or all, of the concepts to be covered in a unit, that student will then have the opportunity to fill in any gaps in his/her learning in an alternative manner and/or complete an individualized project. This allows advanced students to further their learning rather than stagnating while they repeat already learned material.

The type of materials that are made available to students is another method in which content can be differentiated (Heacox, 2002; Tomlinson, 2001). Textbooks are but
one resource within a differentiated classroom. Books at many reading levels are available on the subject areas taught. Usually, the quality of information contained in each book will increase as the reading level increases. In this manner, students can learn basic to complex material based on their reading abilities. For example, books on the Bill of Rights are available at different reading levels. Some books simply supply a general description of each of the amendments while others detail the history of the amendment as well as a thorough explanation of the meaning. By the use of sets of these books, students will learn different content while all students gain an understanding of the Bill of Rights.

Product

How students demonstrate their learning over an extended period of time is considered a product (Heacox, 2002; Tomlinson, 2001). Often, these products come at the end of a unit in place of a traditional test. The extent of knowledge and skills used and expanded upon is the main difference between a product activity and a process activity. Usually, due to the extended period of time, product activities require students to apply their new learnings to new situations or new ways of thinking.

Many teachers supply students with a few choices of projects or even a menu of options. Frequently, this ability to choose how they demonstrate their learning will motivate students to accomplish more than with traditional assessments (Tomlinson, 2001). The choices can be based upon learning modalities, complexity, readiness, or other criteria so long as all students are required to meet or exceed unit expectations.
Bloom and Gardner

As a way to efficiently differentiate student activities, Heacox (2002) developed two matrices to help teachers differentiate with the use of Bloom’s Taxonomy (Bloom, 1984, as cited in Heacox) and Gardner’s Multiple Intelligences (MI; Gardner, 2000, as cited in Heacox). With the use of Bloom’s Taxonomy, the complexity of the tasks increases as one moves through the six levels. The six levels are: (a) knowledge or basic facts and information, (b) comprehension or understanding the information, (c) application or utilizing the information, (d) analysis or examining the information, (e) synthesis or formulating new ideas based on the information, and (f) evaluation or judging the value of the information. When differentiating instruction, a teacher can create activities of different complexities based upon a student’s readiness and Bloom’s Taxonomy. A struggling student may need additional practice and complete activities at the first two levels, while an advanced student may work at the final level and combine past learning and the new learning.

Currently, Gardner’s (Gardner, 2000, as cited in Heacox, 2002) MI include eight intelligences: (a) verbal/linguistic, (b) visual/spatial, (c) logical/mathematical, (d) naturalistic, (e) musical, (f) bodily/kinesthetic, (g) intrapersonal, and (h) interpersonal. The use of these intelligences in the planning of a unit of study requires teachers to know the strengths of their students. Asking a student who is overactive to write a journal or essay is not as effective as asking the student to create a skit that is more compatible with his/her nature.

The use of MI (Gardner, 2000, as cited in Heacox, 2002) allows teachers to develop project options that work with the strengths of students while high standards are
maintained for all. For example, this researcher utilized the following options for her students to show their understanding of the life of the slave: (a) create a skit (e.g., linguistic and kinesthetic); (b) write a poem (e.g., linguistic and intrapersonal); (c) write a song/lyrics (e.g., linguistic and musical); (d) create a visual representation (e.g., spatial and kinesthetic); and (e) create a chart comparing student life with a slave’s life (e.g., spatial and logical). Although not all intelligences were provided as options in this case, all were available as choices throughout the year.

The matrices that Heacox (2002) developed ensure that all levels of complexity and all intelligences are utilized throughout a unit. Heacox’s first matrix, Table 3, is focused on Bloom’s Taxonomy (Bloom, 1984, as cited in Heacox). Within the blank spaces, a teacher can fill in the learning activities that students will complete throughout a unit under the corresponding level. Additionally, the matrix can be used to differentiate specific activities for different levels of readiness such as seen in Activity 3.

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Analysis</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities 1</td>
<td>Activity 3a</td>
<td>Activity 2</td>
<td>Activity 3b</td>
<td>Activity 6</td>
<td></td>
</tr>
<tr>
<td>Activity 5</td>
<td>Activity 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second matrix that Heacox (2002) developed combines both Bloom’s Taxonomy (Bloom, 1984, as cited in Heacox) and Gardner’s MI (Gardner, 2000, as cited in Heacox, 2002). This matrix, Table 4, is used to ensure that students of all readiness levels have the opportunity to work within each of the intelligences. Again, the teacher

Table 4

*Matrix for Use with Bloom’s Taxonomy and Gardner’s Multiple Intelligences*

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application</th>
<th>Analysis</th>
<th>Synthesis</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linguistic</td>
<td>Activity 7a</td>
<td>Activity 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spatial</td>
<td>Activity 6</td>
<td>Activity 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logical/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturalistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bodily/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>Activity 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrapersonal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal</td>
<td></td>
<td>Activity 4</td>
<td>Activity 9</td>
<td>Activity 8</td>
<td>Activity 7b</td>
</tr>
</tbody>
</table>

can fill in the empty spaces with learning activities that match the readiness level and intelligence. With this matrix, a teacher can see in a glance if one level or one intelligence is overused, such as Interpersonal, or underused, such as Naturalistic and Musical, and make changes accordingly.

*Flexible Grouping*

Another method to differentiate instruction is the use of flexible grouping (Bender, 2005; Gregory & Chapman, 2002; Heacox, 2002; Tomlinson, 2001). Flexible grouping is the practice of grouping students for specific tasks based on readiness, interest, or learning preferences. Group membership is determined by the teacher on a task by task basis. It differs from cooperative groups in its intent. Flexible groups are used to ensure that learning activities meet the needs of specific students. In contrast, the focus of cooperative groups tends to be on the social skills of working within a group. When used appropriately, flexible groups can maximize student teacher academic interaction.

*Assessment*

Assessment is the evidence of a student’s strengths and weaknesses (Chapman & King, 2005; O’Connor, 2002; Wiggins & McTighe, 2005). In the differentiation of instruction, it becomes essential that the teacher is aware of each student’s needs in order to adjust instruction (Brimijoin, Marquissee, & Tomlinson, 2003). As discussed previously, students’ readiness, learning preferences, and interests are crucial to successful differentiation.
Tools

A teacher may utilize many different assessment tools to help him/her differentiate instruction. Surveys can be used to get to know students at the beginning of the year (Chapman & King, 2005; Heacox, 2002). Surveys can range from interests to learning preferences. These surveys can be helpful in the development of flexible groups and learning activities.

Pretests and midpoint assessments are vital to differentiated instruction (Chapman & King, 2005; Gregory & Chapman, 2002). Whether formal or informal, the information gathered before and during a unit helps to guide instruction. Learning activities can be changed, modified, or eliminated from the original plan once a teacher recognizes the needs of his/her students. These assessments can range from formal tests to exit slips in which the students self-evaluate their understanding. Also, observation of the reactions of students during instruction and tasks can be a form of assessment. For example, if a question is returned with blank stares, the teacher may need to reteach the content while an increase in chatting may indicate the need to pick up the pace.

Formal assessments can take many forms (Chapman & King, 2005; Gregory & Chapman, 2002; Heacox, 2002; Marzano, 2000; Tomlinson, 2001). The traditional test can still have its place within a differentiated classroom. Such assessments are useful to determine student knowledge of basic content facts. The use of oral examinations or reports allows students who, traditionally, do not do well on written tasks a different option.

In a performance assessment, students are required to apply their knowledge to a real life situation, as shown in the unit plan for geometry previously discussed (Wiggins
& McTighe, 2005). Also, the use of end of the unit projects can demonstrate student learning. At the end of the unit on persuasion, for example, students could be required to present their knowledge of the techniques of persuasion by writing an essay or letter, participating in a debate, or creating an advertisement. Portfolios can be utilized as an additional method to assess students. A portfolio allows teachers and students to demonstrate growth and progress in a specific area.

An important tool for all assessments is the rubric (Chapman & King, 2005; Gregory & Chapman, 2002; Heacox, 2002; Marzano, 2000; Tomlinson, 2001; Wiggins & McTighe, 2005). A rubric is a way to determine the strengths and weaknesses of student work. A rubric consists of specific qualities required in the work as well as degrees of competency for each quality. This allows teachers to focus on specific areas of feedback and, when shared with students at the onset of the task, students can focus on their work. Also, rubrics allow teachers to differentiate expectations. Gifted students may be required to score in the advanced section of a rubric in all areas while a special education student may be required to score either in the developing or secure sections depending on his/her abilities. The expectations for a particular task are different, but all students are challenged to meet high expectations. This is an example of how differentiation is fair to all students, although it is not equal.

Because differentiated classrooms are student centered, self-evaluation is an important aspect of assessment (Bender, 2005; Heacox, 2002; Tomlinson, 2001). Students who are aware of the expectations need to evaluate their own work in order to enhance their learning, increase their self-efficacy, and create a positive learning environment. When rubrics are used, teachers can require students to evaluate their own
work with the rubrics. If the teacher evaluates the work differently, written or oral comments can help students to improve their understanding. Also a student’s self-assessment throughout a unit can help the teacher to: (a) correct misunderstandings, (b) provide additional support, and (c) change the instructional pace.

Grading

The teacher’s report to administrators, parents, and students of a letter grade, or its equivalent, can present challenges in a differentiated classroom (Marzano, 2000; O’Connor, 2005; Stiggins, 2005). A single letter provides a vague sense of a student’s performance in comparison to the grade level norms. Traditional grades do not demonstrate a student’s strengths and weaknesses. Some techniques that teachers can utilize to more effectively report student progress within the typical grading system are: (a) link grades to the fulfillment of established goals; (b) use rubrics to determine achievement; (c) be selective about which tasks are formally graded and recorded; (d) change grades on tasks if students perform better on the same task at a later date; (e) look for patterns of growth rather than average scores to determine final grades; (f) provide written and verbal feedback to students on their performance on a regular basis; (g) consider nonacademic factors, such as effort, behavior, and attendance, separately; and (h) inform parents and students of grading practices. The use of some or all of these techniques can help teachers to more accurately report on the progress of students.

Chapter Summary

The reasoning behind the use of differentiated instruction was defined and explained in this chapter. Additionally, the planning prior to, throughout, and at the end
of a unit of study were discussed. Thoughtful, purposeful planning is the trademark of good differentiated instruction.

In Chapter 3, this author describes the procedures, goals, and peer assessment for the development of this project. In Chapter 4, the staff development training on differentiated instruction is presented. In Chapter 5, the author evaluates the completed research project.
Chapter 3

METHOD

The purpose of this research project was to provide differentiated training to public school teachers on the topic of differentiated instruction. Due to the highly varied populations of schools today, teachers are required to stretch their instructional abilities if they are to meet the needs of all learners. The use of differentiated instruction can help instructors thoughtfully plan for all students.

Target Audience

This project was designed specifically for the educators at Lois Lenski Elementary School in Littleton Public School District (LPS), although it could be used in the future for other teachers. Four new teachers are joining the staff in August, and this will be the first year teaching for three of the four. The 18 returning classroom teachers have 1 to more than 30 years of teaching experience. Most of the classroom teachers at Lenski are comfortable with differentiation, but they would like additional ideas. Other teachers are unclear about the techniques and management of differentiated instruction practices.

Procedures

The inservice workshop was divided into two sections. The first section is designed for the new teachers and teachers designated by the Principal, and all other interested educators can participate. In this section, the foundation of differentiated instruction is provided. The teachers are exposed to: (a) the philosophy that directs
differentiated instruction, (b) the reasoning behind the use of differentiated instruction, and (c) the pace in which to begin the implementation differentiated instruction.

The second section of the workshop is designed for the whole teaching staff. In this section, the teachers are exposed to: (a) a template for planning a unit of study, (b) essential questions, (c) assessment issues ideas, and (d) for differentiating activities. The workshop ends with grade level teams whose members will collaborate on units of study while they utilize the information provided.

Goals of the Workshop

The goal of the workshop is to provide the required training in differentiated instruction in a manner that all classroom teachers will find useful. The workshop provides the background information for everyone to utilize differentiated instruction at some level, and it provides tools to enhance current differentiated instruction practices. Additionally, teachers are given the opportunity to plan or improve a unit of study.

Peer Assessment

Three colleagues were given the opportunity to provide feedback on this project prior to its implementation. Suggestions and recommendations were accepted verbally, written, or electronically. Their feedback is discussed in Chapter 5.

Chapter Summary

An inservice workshop on differentiated instruction will be presented at the author’s place of work. The workshop is divided into two sections to better meet the varying needs of the classroom teachers. The content of the workshop is provided in Chapter 4.
Chapter 4

RESULTS

For this research project, the author created a staff development workshop on differentiated instruction for the varied needs of the staff at Lois Lenski Elementary in Littleton Public Schools (LPS). This chapter contains the Power Point presentation along with key points that will be made during the workshop. The first part of the workshop is intended for new teachers and other interested educators to build their background knowledge. The subsequent section is for all educators so that they may plan a collaborative unit and be reminded of the elements of differentiated instruction.
Introduction:

- Sixth year at Lenski
- 14 years teaching
  - GT coordinator in Boulder
  - 40% ESL and 33% Special Education in Westminster
- Master’s degree emphasis in differentiation
What is it?

- Phase 1: instructional practice
- Phase 2: philosophy

Open Discussion on question:

- Instructional Method
  - Used sometimes to differentiate based on readiness, interest, or learning style
- A Philosophy
  - Belief that all children can learn
  - A culture that is developed within the classroom
  - Student centered classroom
  - Accepts and recognizes strengths and weaknesses of all
Why do it?

- Gifted students
- Special Education students
- “Average” students
  - Bright
  - Struggling
  - Different
- Increase engagement

- Lenski has an unusually high percentage of gifted students
  - Without regular challenges, students often develop bad habits
    - Mental laziness, behavior problems, and/or lack of personal responsibility
  - Tend to have a small frustration tolerance because they are used to understanding things quickly
  - GT coordinator is Deb

- Special Education
  - Phyllis for primary and Jan for intermediate students
  - Find out IEP modifications you need to implement
  - Part of the regular class most of the time
• “Average” Students
  o No such thing
  o Bright, hard working students
    ▪ Need to be challenged
  o Struggling students
    ▪ Require more support and guidance to achieve grade level expectations
  o The “odd duck”
    ▪ Find out about their interests and learning styles

• increase engagement
  o personal choice and different ways to learn
  o feel validated and a part of the learning process
1. Start small

2. Look at the curriculum guides and create essential questions

3. Find lessons and activities;
   
   ask colleagues for ideas—collaborate

4. Think about your students and what will be challenging for a group or two;
   
   remember that every activity should NOT be differentiated;

   whole class work is important, too
5. Dive in
6. Be flexible and change the plan as needed
7. Learn from the kids
8. Build on your successes

5. Start organizing the materials and teach
6. Differentiation is not an exact science, expect to change things as you go along when activities work or do not work
7. Listen to what the students are saying during the activities—they know what works and what does not;
   be brave and ask their opinion
8. Continue with what works and modify what does not;
   ask for support from colleagues
Set-up

- On each table set out copies of Power Point and wireless laptops
- Hang poster sized version of unit plan (see Appendix A)
  - Ask grade levels to sit together and specialists to join in
Introduction:

- Presentation is a part of my masters and would appreciate any and all feedback
- Remind teachers that they should have brought materials to plan and differentiate a unit
- Objectives:
  - Yearly reminder on differentiated practices
  - Collaborative planning
  - Sharing ideas
- Participants open unit plan document on laptops
Planning for all

- Skills and concepts
  - Standards
  - ELOs

- Essential questions
  - The BIG ideas
  - All activities refer back to essential questions
  - Way for kids to organize information

- Curriculum guides: on disk or on LPS website
  - What are all the targets you want to meet in this one unit?
  - Participants copy and paste them into first box of the unit plan

- Essential questions
  - Student friendly verbiage
  - Show examples (see Appendix B)
  - Display unit plan poster with targets and essential questions (see Appendix A1)
  - Participants type questions into unit plan
  - Discuss
Assessments & Grading

Students showing what they know & how we give them feedback

• Discuss district’s new report card
• Our challenge is to still provide feedback
Formal pre-assessments

- Tiered within
  - Begin with foundational information
  - Middle section is unit objectives
  - End with extended information
- Easily know what students need
- Not formally graded
- Can also be used as end of unit test

- Example of fraction test that is tiered (see Appendix C)
- Recommended to give two weeks prior to start of unit
- Results used to include or exclude specific content/skills
Formative assessments

- Assignments/tasks
- Facial expressions during instruction
- Thumbs up
- Exit slips
- Discussions
- Be picky about which to formally grade

- Discuss examples of formative assessments
- Feedback
  - Students know where they are at
  - Guide further instruction
Formal assessments

- Projects, performance assessments, tests
- Relates directly to unit objectives
- Formally graded
  - Retaken?

- Purpose to check to see if students actually achieved unit objectives
- Re-do
  - Allows students additional chance to learn material
  - Decrease test anxiety and bad day syndrome
  - Accepts and honors different learning time frames
- Show assessments on unit poster (see Appendix A2)
- Participants type in assessments on unit plans
**Grading: the big 8**

1. link grades to the fulfillment of established goals
2. use rubrics to determine achievement
3. be selective about which tasks are formally graded and recorded
4. change grades on tasks if students perform better on the same task at a later date

1. Make sure that everything recorded in grade book goes back to essential questions and targets

2. Rubrics allow students to know what is expected of them and how they’re doing;
   - helps with classroom management;
   - keeps grading more consistent

3. no use grading something that they are just learning how to do

4. allow the students to learn from their mistakes

#3 and 4 demonstrates that learning is not linear and not everyone learns in the same time frame
5. look for patterns of growth rather than average scores to determine final grades
6. provide written and verbal feedback to students on their performance on a regular basis
7. consider nonacademic factors, such as effort, behavior, and attendance, separately
8. inform parents and students of grading practices

5. Unless they know it all to begin with, there should be a learning curve
6. Communicate, communicate, communicate—do not keep them in the dark
7. Late assignments, off task behaviors, etc. do not relate to essential questions nor targets
8. Your expectations may be a bit different or unexpected, so keep everyone informed
Points of Departures
Activities and lessons

- Most only think of this as differentiation
- Without essential questions and targets these often get off track
Content: what is taught

- Pre-assessments
  - Curriculum compacting
  - Filling in gaps
  - Menu activities
- Leveled materials
- Depth of knowledge
  - Bloom’s Taxonomy

- Show examples
  - Fraction menu (see Appendix D)
  - Constitution books and graphic organizer
- Discuss what others have done
Bloom’s Taxonomy

- Knowledge: basic facts and information
- Comprehension: understanding the information
- Application: utilizing the information
- Analysis: examining the information
- Synthesis: formulating new ideas based on the information.
- Evaluation: judging the value of the information

Three levels

- Basic: knowledge and comprehension
- Intermediate: application and analysis
- Advanced: synthesis and evaluation
Process: how it’s taught

- Tiered activities
  - 2 or 3 leveled assignments/tasks
- Personal interests
- Learning preferences
  - Auditory, visual, kinesthetic
  - Concrete, semi-concrete, abstract (math)
  - Gardner’s Multiple Intelligences

- Show examples
  - Writing goals (see Appendix F)
  - Area and perimeter (see Appendix G)
  - Basic addition: objects, pictures, equations

- Discuss what others have done
### Gardner’s 8 Multiple Intelligences

- verbal/ linguistic
- visual/ spatial
- logical/ mathematical
- naturalistic
- musical
- bodily/ kinesthetic
- intrapersonal
- interpersonal

Heacox has many questionnaires on multiple intelligences and interests
Product: demo of learned

- Objective check-points
- End of unit assessment
  - Relates to essential questions & unit objectives
  - Test, project, performance assessment . . .
  - Often upper levels of Bloom’s Taxonomy
- Often choice is involved

- Show examples
  - Performance assessment option for fraction unit (see Appendix H)
  - Biography project (see Appendix I)

- Discuss what others have done
Flexible Groupings

- Temporary organization of students
  - Teacher selected
  - Based on readiness, interest, or learning preferences
  - Intent: meet the needs of students
- Can be small group instruction while others are working independently

- Not cooperative learning groups

- Management tips
  - Clear expectations
  - Organized materials
  - Task cards/ written directions
  - No new skills to be done independently
  - Explain to each group individually

- Show lessons on unit poster (see Appendix A3)
  - Starred lessons will be differentiated
  - Cool lessons that don’t fit with the essential questions and targets will be used as extension activities
• Once ready to use, the calendar will be useful to determine the timing and possible elimination or addition of activities depending on the timing
• Participants type in lessons
Resources


- Best overall book on differentiation is Heacox
- Best overall book on grading is O’Connor
Questions? Comments?

- Answer any questions
- Ask for feedback to improve my presentation
- Thank them for their time
Chapter Summary

Presented in this chapter was the information about the need for differentiated instruction, unit planning, and examples of differentiated activities. Educators were given the opportunity to utilize this information to construct units of study. In Chapter 5 the author discusses the project, its limitations, and possible future staff development on the topic.
Chapter 5

DISCUSSION

The intent of this project was to create a differentiated staff development workshop on differentiated instruction for the educators at Lois Lenski Elementary in Littleton Public School (LPS). In this chapter the author reviews the project and its objectives.

Contribution of the Project

This workshop fulfills the requirement of reviewing differentiated instruction prior to the beginning of the school year. This presentation gives the participants an understanding of what differentiated instruction is, the purpose of it, and examples of differentiation in action. Additionally, the workshop allows the teachers to utilize this information immediately while planning a unit of study with colleagues. The unit plan used in this workshop was created by the author.

Resolution of the Original Problem

After this workshop, teachers have a clear understanding of what differentiated instruction is, why it is used, and how it is implemented within the classroom. No longer do inexperienced teachers leave the inservice without a clear plan of action; nor do experienced teachers leave without sharing and gaining ideas. All teachers leave with ideas to engage the students who will be arriving later in the week.
Limitations to the Project

This research project does have several limitations. Differentiation is such a complex subject that a single workshop cannot truly meet the needs of an entire staff. Books and semester length classes are necessary for a comprehensive review of differentiated instruction. A single workshop can only provide a starting point for teachers.

Another limitation is the knowledge of the author with regard to the teaching practices of the other 31 classroom teachers at Lenski Elementary. Although there have been many conversations about instruction practices, the author has not had the opportunity to observe the majority of the teachers in action. As a result, true differentiation is not possible since one of the main caveats of differentiation is knowing your students, in this case fellow educators.

Another limitation of this project is the omission of second language learners. Rarely are there students learning English enrolled at Lenski Elementary. Because this project was designed specifically for the staff at Lenski Elementary, this population of students was not addressed.

Peer Assessment

Three colleagues of the author expressed both positive and negative comments regarding the workshop. All agreed that the workshop would be beneficial to all participants, from new to veteran teachers. The format was easy to follow and interactive. Creating a unit of study to be used with the first few weeks of school was valuable. They believed that the combination of open discussion and lecture format was ideal.
The timing and length of the workshop presented some concerns. The week prior to the start of the school year is not an ideal time for a workshop since most teachers feel overwhelmed with the amount of work that needs to happen. Some participants might resent the timing of the workshop and, as a result, not fully attend. The length of the workshop was also a concern. It was suggested that the workshop either be shortened to give basic information or expanded to a full day workshop or a series of classes.

Recommendations for Future Research and Study

An evaluation or analysis of differentiated instructional practices within the classrooms at Lenski Elementary is one possible area of study. How successfully has differentiation been implemented? Are the students more engaged in learning? Do the students have the tools and opportunities for success that they need? What areas would the teachers like more staff development?

The types of differentiation that English as a Second Language (ESL) students require would be another area of study needed to make the workshop more useful to other schools and educators. Because these students are limited in their vocabulary and fluency, specific strategies are needed for them to be able to learn the material necessary to answer the essential questions.

Project Summary

This research project has identified a problem and a possible solution. Although teachers are expected to differentiate for the students within their classrooms, often times the training is not differentiated. As a result, teachers leave inservices feeling their needs were not met. This author researched differentiated instruction, then created a staff development workshop that would meet the varied needs of the teachers at Lenski
Elementary. Additionally, the use of the unit plan (see Appendix A) allowed the teachers to maximize the experience by using the information immediately.
REFERENCES


56


APPENDIX A

Unit Plan
<table>
<thead>
<tr>
<th>What do I need to ensure the students know?</th>
<th>Essential Questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills/ Concepts:</td>
<td></td>
</tr>
<tr>
<td>Standards:</td>
<td></td>
</tr>
<tr>
<td>ELOs:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How will I determine what the students know?</th>
<th>Other Assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal Assessments:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How can I help the students to learn this material?</th>
<th>Points of Departure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities that relate to the objectives:</td>
<td>• Leveled materials</td>
</tr>
<tr>
<td></td>
<td>• Tiered lessons</td>
</tr>
<tr>
<td></td>
<td>• Bloom’s Taxonomy</td>
</tr>
<tr>
<td></td>
<td>• Gardner’s MI</td>
</tr>
<tr>
<td></td>
<td>• Visual/ Auditory/</td>
</tr>
<tr>
<td></td>
<td>Kinesthetic</td>
</tr>
<tr>
<td></td>
<td>• Interest</td>
</tr>
<tr>
<td></td>
<td>• Choices</td>
</tr>
<tr>
<td></td>
<td>• Flexible groupings</td>
</tr>
<tr>
<td></td>
<td>• Menu activities</td>
</tr>
<tr>
<td></td>
<td>• Task cards</td>
</tr>
<tr>
<td></td>
<td>• Compacting</td>
</tr>
<tr>
<td>Other activities:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX A1

Unit Plan with Targets and Essential Questions
### What do I need to ensure the students know?

**Skills/Concepts:**
1. Interpret multiple causes and effects
2. Use primary and secondary sources to show how historical events were viewed from different perspectives
3. Analyze and evaluate historical documents
4. Explain the impact of taxing and spending decisions
5. Construct an historic map
6. Interpret political cartoons
7. Use art and music to expand upon and interpret historical events

**Standards:**

**ELOs:**
1. Review the chronology of the critical events leading to the outbreak of armed conflict between the American colonies and England
2. Identify the location and show the chronology of the major battles of the American Revolution
3. Describe the life of a soldier in the Continental Army
4. Understand the outcome of the Revolutionary War
5. Explain the major points of the Declaration of Independence

**Essential Questions:**

- How does one event/decision lead to new events/decisions?
  - How did Britain’s desire to expand their territory in the New World lead to taxation of the colonists, their rebellion, and finally war?

- How do different perspectives/beliefs affect events?
  - What were the driving ideals of the Loyalists and Patriots?
  - How did these ideals influence the events prior to and during the Revolutionary War?
  - How did the Continental and British Armies’ strategy affect the battles?

### How will I determine what the students know?

**Formal Assessments:**

**Other Assessments:**
How can I help the students to learn this material?

<table>
<thead>
<tr>
<th>Activities that relate to the objectives:</th>
<th>Points of Departure:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Leveled materials</td>
</tr>
<tr>
<td></td>
<td>• Tiered lessons</td>
</tr>
<tr>
<td></td>
<td>* Bloom’s Taxonomy</td>
</tr>
<tr>
<td></td>
<td>* Gardner’s MI</td>
</tr>
<tr>
<td></td>
<td>* Visual/ Auditory/</td>
</tr>
<tr>
<td></td>
<td>Kinesthetic</td>
</tr>
<tr>
<td></td>
<td>* Interest</td>
</tr>
<tr>
<td></td>
<td>* Choices</td>
</tr>
<tr>
<td></td>
<td>* Flexible groupings</td>
</tr>
<tr>
<td></td>
<td>• Menu activities</td>
</tr>
<tr>
<td></td>
<td>• Task cards</td>
</tr>
<tr>
<td></td>
<td>• Compacting</td>
</tr>
</tbody>
</table>

Other activities:

Calendar

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

63
APPENDIX A2

Unit Plan with Assessments
What do I need to ensure the students know?

<table>
<thead>
<tr>
<th>Skills/Concepts:</th>
<th>Essential Questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interpret multiple causes and effects</td>
<td>How does one event/decision lead to new events/decisions?</td>
</tr>
<tr>
<td>2. Use primary and secondary sources to show how historical events were viewed from different perspectives</td>
<td>- How did Britain’s desire to expand their territory in the New World lead to taxation of the colonists, their rebellion, and finally war?</td>
</tr>
<tr>
<td>3. Analyze and evaluate historical documents</td>
<td></td>
</tr>
<tr>
<td>4. Explain the impact of taxing and spending decisions</td>
<td>How do different perspectives/beliefs affect events?</td>
</tr>
<tr>
<td>5. Construct a historic map</td>
<td>- What were the driving ideals of the Loyalists and Patriots?</td>
</tr>
<tr>
<td>6. Interpret political cartoons</td>
<td>- How did these ideals influence the events prior to and during the Revolutionary War?</td>
</tr>
<tr>
<td>7. Use art and music to expand upon and interpret historical events</td>
<td>- How did the Continental and British Armies’ strategy affect the battles?</td>
</tr>
</tbody>
</table>

Standards:

<table>
<thead>
<tr>
<th>ELOs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review the chronology of the critical events leading to the outbreak of armed conflict between the American colonies and England</td>
<td></td>
</tr>
<tr>
<td>2. Identify the location and show the chronology of the major battles of the American Revolution</td>
<td></td>
</tr>
<tr>
<td>3. Describe the life of a soldier in the Continental Army</td>
<td></td>
</tr>
<tr>
<td>4. Understand the outcome of the Revolutionary War</td>
<td></td>
</tr>
<tr>
<td>5. Explain the major points of the Declaration of Independence</td>
<td></td>
</tr>
</tbody>
</table>

How will I determine what the students know?

<table>
<thead>
<tr>
<th>Formal Assessments:</th>
<th>Other Assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pre-assessment: factual information and cause/effect relationships</td>
<td>- Performance Task: write a newspaper article from the Loyalist or Patriot perspective on one of the pre-war events (frames will be available for struggling writers)</td>
</tr>
<tr>
<td>- Test/Performance Task: combination of factual information and prompts on cause and effect relationships (two versions: one for special education students and another for everyone else)</td>
<td>- Performance Task: create a poster, skit, political cartoon to demonstrate understanding of Loyalist and Patriot view points</td>
</tr>
</tbody>
</table>
### How can I help the students to learn this material?

<table>
<thead>
<tr>
<th>Activities that relate to the objectives:</th>
<th>Points of Departure:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Leveled materials</td>
</tr>
<tr>
<td></td>
<td>• Tiered lessons</td>
</tr>
<tr>
<td></td>
<td>* Bloom’s Taxonomy</td>
</tr>
<tr>
<td></td>
<td>* Gardner’s MI</td>
</tr>
<tr>
<td></td>
<td>* Visual/ Auditory/ Kinesthetic</td>
</tr>
<tr>
<td></td>
<td>* Interest</td>
</tr>
<tr>
<td></td>
<td>* Choices</td>
</tr>
<tr>
<td></td>
<td>* Flexible groupings</td>
</tr>
<tr>
<td></td>
<td>• Menu activities</td>
</tr>
<tr>
<td></td>
<td>• Task cards</td>
</tr>
<tr>
<td></td>
<td>• Compacting</td>
</tr>
</tbody>
</table>

### Other activities:
-  

### Calendar

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX A3

Unit Plan with Learning Activities
What do I need to ensure the students know?

<table>
<thead>
<tr>
<th>Skills/Concepts:</th>
<th>Essential Questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interpret multiple causes and effects</td>
<td>How does one event/decision lead to new events/decisions?</td>
</tr>
<tr>
<td>2. Use primary and secondary sources to show how historical events were viewed from different perspectives</td>
<td>- How did Britain’s desire to expand their territory in the New World lead to taxation of the colonists, their rebellion, and finally war?</td>
</tr>
<tr>
<td>3. Analyze and evaluate historical documents</td>
<td>How do different perspectives/beliefs affect events?</td>
</tr>
<tr>
<td>4. Explain the impact of taxing and spending decisions</td>
<td>- What were the driving ideals of the Loyalists and Patriots?</td>
</tr>
<tr>
<td>5. Construct an historic map</td>
<td>- How did these ideals influence the events prior to and during the Revolutionary War?</td>
</tr>
<tr>
<td>6. Interpret political cartoons</td>
<td>- How did the Continental and British Armies’ strategy affect the battles?</td>
</tr>
<tr>
<td>7. Use art and music to expand upon and interpret historical events</td>
<td></td>
</tr>
</tbody>
</table>

Standards:

ELOs:

1. Review the chronology of the critical events leading to the outbreak of armed conflict between the American colonies and England
2. Identify the location and show the chronology of the major battles of the American Revolution
3. Describe the life of a soldier in the Continental Army
4. Understand the outcome of the Revolutionary War
5. Explain the major points of the Declaration of Independence

How will I determine what the students know?

<table>
<thead>
<tr>
<th>Formal Assessments:</th>
<th>Other Assessments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pre-assessment: factual information and cause/effect relationships</td>
<td>- Performance Task: write a newspaper article from the Loyalist or Patriot perspective on one of the pre-war events (frames will be available for struggling writers)</td>
</tr>
<tr>
<td>- Test/Performance Task: combination of factual information and prompts on cause and effect relationships (two versions: one for special education students and another for everyone else)</td>
<td>- Performance Task: create a poster, skit, political cartoon to demonstrate understanding of Loyalist and Patriot view points</td>
</tr>
</tbody>
</table>
### How can I help the students to learn this material?

**Activities that relate to the objectives:**
- Hook: Relate essential questions to personal life through a discussion of family decisions
- Read *Liberty* while completing graphic organizer with a partner
- Review notes as a class through Power Point Presentation and discussion; relate information to essential questions
- 2 picture books:
  - *Click, Clack, Moo* to demonstrate the power of written proposals (relates barnyard issue to the War to demonstrate the universality of written proposals)
  - *The Scarlet Stocking Spy* to demonstrate the role of Loyalist spies (read aloud time)
- *History Alive’s Tug of War* simulation of the imbalance of the British and American military forces
- Creation of a class Power Point Presentation on the battles which includes facts and a historical map
- Lesson and activity on political cartoons from the time period (use of primary sources, modeling, and leading questions to understand political cartoons and perspectives on pre-war events)
- View and discuss videos on the life of the Loyalists and soldiers VH 21421 “Revolutionary War”
- Game to review information before test

**Other activities:**
- Books on life of a soldier
- Models

### Points of Departure:
- Leveled materials
- Tiered lessons
- Bloom’s Taxonomy
- Gardner’s MI
- Visual/ Auditory/ Kinesthetic
- Interest
- Choices
- Flexible groupings
- Menu activities
- Task cards
- Compacting

### Calendar

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday/Wednesday</th>
<th>Thursday/Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-assessment or Start reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liberty (student choice) 26/27</td>
</tr>
<tr>
<td>Essential Questions</td>
<td><em>Click, Clack, Moo</em></td>
<td>Read Liberty and take notes 30</td>
</tr>
<tr>
<td>Read <em>Liberty</em> and take notes 30</td>
<td></td>
<td>Finish notes and review</td>
</tr>
<tr>
<td>Simulation</td>
<td>Lesson and activity on political cartoons</td>
<td>Newspaper article</td>
</tr>
<tr>
<td>Battle notes ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7/8</td>
<td>9/10</td>
</tr>
<tr>
<td>---</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td><strong>Project on Loyalist and Patriot views</strong></td>
<td>Continue project</td>
<td>Continue project</td>
</tr>
<tr>
<td>13</td>
<td>14/15</td>
<td>16/17</td>
</tr>
<tr>
<td><strong>No School</strong></td>
<td>Prepare for Parent-Teacher-Student Conferences</td>
<td>Present Projects</td>
</tr>
<tr>
<td>20</td>
<td>21/22</td>
<td>23/24</td>
</tr>
<tr>
<td><strong>Present battle Power Point</strong></td>
<td>Videos</td>
<td>Conferences/ No School</td>
</tr>
<tr>
<td>27</td>
<td>28/1</td>
<td>23/24</td>
</tr>
<tr>
<td><strong>Review game</strong></td>
<td>Test</td>
<td>7/8</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***This project will be completed in the computer lab with the assistance of the technology teacher. The students will learn how to hyperlink the historical map to their slide on the facts of the battle.
APPENDIX B

Essential Questions
Essential Questions

Is punctuation necessary?

How do authors use different story elements to establish mood?—or—How do authors create an emotion or feeling in a story?

Who is a true friend? (using examples from books)

What is the value of place value?—or—How is place value important in math?

What kind of practice “makes perfect”? What feedback will enhance or improve performance the most? (How important is follow through for speed and distance?—or—How important is tempo?)

What should we eat?

How is the language of music represented on paper?

What characterizes great literature?—or—What makes a good book good?

How are number patterns used to represent mathematical relationships?—or—How do number patterns show mathematical thinking?

What effects do humans have on ecosystems?

How do physical characteristics of animals reflect their habitats and life cycles?

What are the characteristics of a biosphere?
APPENDIX C

Fraction Test
Fraction Pre-Assessment

Divide this shape into 4 equal parts.

Now shade in \( \frac{3}{4} \) of the shape.

Order the following fractions from smallest to largest.
\[
\begin{array}{cccc}
\frac{4}{10} & \frac{7}{10} & \frac{1}{10} & \frac{9}{10}
\end{array}
\]

On the following ruler place these measurements:
\[
1\frac{1}{2} \quad 4\frac{1}{4} \quad \frac{3}{4} \quad 2\frac{1}{8} \quad 5\frac{3}{8}
\]

Add or subtract.
\[
\begin{array}{cc}
\frac{7}{9} & \frac{5}{6} \\
+\frac{1}{9} & -\frac{1}{6}
\end{array}
\]
List multiples:

4: __________________________

10: __________________________

Circle common multiples.

Name the Lowest Common Multiple. ______

Find all the factors of:

24: __________________________

18: __________________________

Circle all the common factors.

Name the Greatest Common Factor. ______

Find three equivalent fractions:

\[
\frac{1}{2} \quad \frac{3}{4} \quad \frac{3}{4}
\]

Reduce to lowest terms:

\[
\frac{6}{12} \quad \frac{9}{27} \quad \frac{12}{24} \quad \frac{5}{10}
\]
Add. Reduce to lowest terms.

\[
\begin{align*}
\frac{7}{10} & \quad \frac{2}{3} \\
\frac{1}{2} & \quad \frac{5}{6} \\
\end{align*}
\]

Subtract. Reduce to lowest terms.

\[
\begin{align*}
\frac{2}{5} & \quad \frac{8}{9} \\
\frac{-3}{20} & \quad \frac{-2}{3} \\
\end{align*}
\]

Convert to an improper fraction:

\[
\begin{align*}
\frac{23}{4} & \quad \frac{8}{7} & \quad \frac{16}{3} & \quad \frac{17}{7} \\
\end{align*}
\]

Convert to mixed numbers:

Add or subtract. Reduce to lowest terms.

\[
\begin{align*}
7 \frac{1}{2} + 8 \frac{1}{4} = & \quad 6 \frac{3}{4} - 4 \frac{1}{3} = \\
\end{align*}
\]

76
APPENDIX D

Fraction Menu
<table>
<thead>
<tr>
<th>Fractions</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic</td>
<td>Ordering</td>
<td>Ruler</td>
<td>+ like denom</td>
<td>- like denom</td>
<td>LCM</td>
<td>GCF</td>
<td>Equivalent</td>
<td>Reducing</td>
<td>+ unlike denom</td>
</tr>
<tr>
<td>Keenan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Josh H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yanni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Josh L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scott</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ross</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mikal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ryan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shawn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyler</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jessica</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

78
APPENDIX E

Constitution Graphic Organizer
<table>
<thead>
<tr>
<th>Branches</th>
<th>Executive</th>
<th>Legislative</th>
<th>Judicial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other names/members</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How they get the job</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citizenship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibilities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

Writing Goals
Writing Goals

To be completed by November 4th (Turn in work as you finish rather than waiting until the 4th.)

Personal Goal(s):

Class Goals:
1. final draft of one new prompt (#5-8)
2. complete descriptive writing activities as assigned
3. at least one formal descriptive writing piece in final copy format
4. at least one personal writing piece in final draft format

Signature ____________________________
APPENDIX G

Area and Perimeter Learning Activities
**Learning Activities for Perimeter and Area:**

**Ordered Pairs**
1. play game “Hidden Treasure” to practice plotting ordered pairs (directions on page 281 in the SRB)
2. plot ordered pairs to create a map of the US (p. 301 in journal)
3. plot a sailboat 4 different ways to understand how changing the scale changes the size, position, and/or orientation (p. 302-303 for most of the class and p. 306-307 for those that showed understanding of plotting on pretest so that they can move to a 4-quadrant graph)
4. describe the changes seen in activity #3

**Perimeter**

<table>
<thead>
<tr>
<th>Passed Pre-assessment</th>
<th>Failed Pre-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. to discover the meaning of ( \pi ) by following lesson 10.8 sections</td>
<td>1. have students plot rectangles on a quadrant then count the line segments between the dots to determine the perimeter; move to measuring the sides of other quadrangles to find the perimeter by adding</td>
</tr>
<tr>
<td>“reviewing the meanings of diameter and radius”, “introducing the circumference investigation”, and “investigating the circumference of a circle” followed up by discussion about their discovery of 3.14—student journal page 371</td>
<td></td>
</tr>
<tr>
<td>2. practice: study link 10.8 and worksheet</td>
<td>2. practice worksheets:</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.edhelper.com/math/geometry107.htm">http://www.edhelper.com/math/geometry107.htm</a></td>
</tr>
<tr>
<td></td>
<td><a href="http://www.edhelper.com/math/geometry108.htm">http://www.edhelper.com/math/geometry108.htm</a></td>
</tr>
<tr>
<td>3. describe the relationship between measurement, the diameter of a circle, circumference of a circle, ( \pi ), and the use of multiplication and division</td>
<td>3. describe the relationship between measurement, addition, and perimeter</td>
</tr>
</tbody>
</table>

**Grading:** use percentages for each person’s work regardless of the work

**Area**

<table>
<thead>
<tr>
<th>Passed Pre-assessment</th>
<th>Failed Pre-assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. lesson 10.9 on the area of circles using a grid then the formula—student journal p. 373-375</td>
<td>1. lesson 9.4 on the area of rectangles using a grid then the formula—student journal p. 310-311</td>
</tr>
<tr>
<td>2. practice: study link 10.9, math masters p.149, and worksheet</td>
<td>2. practice: study link 9.4, math masters p. 125, and worksheet</td>
</tr>
</tbody>
</table>

**Grading:** use percentages for each person’s work regardless of the work
3. Describe the relationship between measurement, area, and multiplication
lesson 9.5 on using a grid to find the area of triangles and parallelograms—
student pages 315-316, study link 9.5, and math masters p. 126
   a. demonstrate by cutting out the rectangle surrounding each polygon
      then how a triangle is half of the rectangle by folding the triangle in half
   b. students may need to continue using this strategy until they can move
to the semi-concrete
4. lesson 9.6 on using the formula for triangles and parallelograms—student
pages 318-320, study link 9.6, math masters p. 127-129, and worksheet
http://www.edhelper.com/math/geometry201.htm
   a. have students add in the vocabulary base and height to their math
      vocabulary books
   b. again demonstrate with concrete materials
5. describe how changing either the base or height measurement changes the
area of the polygon
APPENDIX H

Performance Assessment on Fractions
Option 1: Remolding

1. Measure the model of the room to the nearest 1/8 of an inch. Write the measurements next to each “wall”.

2. Convert the inches into feet by using the scale 1 inch equals 2 feet. Write the conversion under the “wall” measurements.

3. If you were to put up crown molding all around the room where the ceiling meets the walls, exactly how much would you need?

4. **Now figure out the cost of adding in the crown molding if it cost $4.01 per foot. You cannot buy only part of a foot of molding.**
Option 2: Cooking

1. Under each picture, write the amount of each ingredient you will need to make chocolate chip cookies.

   _____ butter flavored shortening
   _____ white sugar
   _____ brown sugar

   _____ flour
   2 eggs
   2 teaspoons Mexican vanilla extract
   1 teaspoon baking soda
   1 teaspoon salt
   _____ chocolate chips

2. Determine the total amount of ingredients you will need.
Option 3: Music

1. For the top line of music, write the numeric representation for each note within each measure.
2. Determine how many beats are sung on “c” above middle “c” for the top line of music.
3. Write the number of beats sung on “c” (see above answer) as a fraction of the total number of beats sung.
APPENDIX I

Biography Project
Biography

For your last Social Studies / Language Arts project you will be learning about a historical figure from our county’s past. We will go to the library to find a biography on pre-selected people. **At home** you are expected to read the book and **take notes** as you read. In class you will put your information into a variety of **presentation formats** to present to the **second grade classes**. This is your chance to be **creative**.

1. Students choose a historical figure
   - Read the book at home (can count it towards your reading calendar)
   - Take notes on **why the person is important to US history**
   - Write a reflective piece about person from one of the three prompts

2. Students choose a presentation format as an individual or small group within category
   - Skit, monologue, model, Power Point, speech, song, . . .
   - **Fact pact**
   - Focuses on **contribution to US history** not childhood

3. Students present historical figure
   - Practice presentation
   - Remember who your audience is
   - Practice good speaking skills
     - Eye contact
     - Volume
     - Pacing

91