FINAL EALR PROJECT

New
Ideas

Katy Bryan

Date Submitted: June 1, 2009

First Grade

Problem Solving Unit

Length of Unit: 4/21/09 - 5/29/09

TABLE OF CONTENTS

SECTION I: CONTEXTUAL FACTORS

Intro Letter to Parents:

March 26, 2009

Dear Families and Students,

I'd like to take this opportunity to introduce myself to all of you! My name is Katy Bryan and I will be student teaching in Mrs. McCourt's class until June 5th. I am in my second year of the Master in Teaching program at the Evergreen State College and will be graduating this June. My role in the classroom will include some observing and some solo teaching. I am very excited to be able to spend time learning from Mrs. McCourt's wonderful example!

I am so excited to be working in your 1st grade class this year! I am very passionate about teaching, learning, students, and community. I look forward to getting to know each and every student as well as all of the supporting adults and family in their lives.

To tell you a little more about myself...I am twenty-seven years old and come from a family full of teachers. My passion for teaching comes from my family's dedication to children and learning. My mom teaches first grade in Yelm and has been an amazing teacher and role model my whole life. This past summer I focused on finishing my master's thesis (phew!!) as well as spending lots of time with my three cats, two puppies, and my husband-to-be Matt. Matt is currently active duty in the Army. I also enjoy playing guitar and piano and love to write music!

I can't wait to get to know more about all of you over the next few months and would be glad to answer any questions you have about myself or my time with all of you here at Meadows. Thank you so much for allowing me to be a part of your special class!

Sincerely,

Katy Bryan

Student Teacher

Community:

This school is located in a residential section of city with a population of approximately 38,000. The school is surrounded by many apartment complexes and duplex-style housing. Additionally, there are several neighborhoods that have housing ranging from lower to middle-high values. There is a new boundary change that will go into effect next year that will move a large number of the higher valued homes to a different elementary school. Along with that change, some new areas will be moved into the elementary school's boundaries, most of which are apartments. Many of the families in the community are military families and have family members deployed overseas.

District:

The school is located in the 22nd largest school district in the state. The district serves nearly 13,500 students. According to the district website, the school district is the most ethnically diverse school district in the South Sound region. The district includes 13 elementary schools, 3 middle schools, and 4 high schools. The district is predicting a major budget reduction (4.8 million dollars) next year and is anticipating the layoff's of several district level coordinator positions.

School:

The school has 493 students enrolled and 24 certified staff members. The school has grades K-6. The average class size for grades K-3 is 21 and for grades 4-6 is 24. The school was originally opened in 1986. The school has five guiding principles called the REACH principles. This stands for *respect/responsibility, excellence, acceptance, cooperation,* and *honesty*. The school has built reward systems around these principles including a monthly assembly in which students are honored for the exhibiting the chosen principle of the month.

In terms of technology, there is one small computer lab for the school. There are some computers in classrooms but they are aging and not generally used. A few classroom are equipped with documents cameras but most only have overhead projectors.

Classroom/physical:

This is a first grade classroom. The classroom is located at the end of a hallway near an exit door that is always locked. On either side of the classroom are the other two first grade classes. Across the hall are two classrooms which are all second grade. There are two exit doors in the classroom; one which exits into the previously mentioned hall and one that exits to the playground. There are also two sets of windows; one which views into the hallway and one that views to the outside area.

Included for this section is a written map of the entire classroom (see attached). The inside of the classroom displays many learning related posters and displays. There are also

representations of students work including writing and art. The front of the room has a cleared walkway area that is used for lining up as well as a meeting place where most instruction and group meetings occur. This open space includes a white board, calendar display, and rewards chart.

The desks are set in groups of 3-5 students. The groups are categorized by colored fish that are hung from the ceiling above (red fish group, purple fish group, ect). There is a space in the desk where students can keep work, folders, ect. On top of the desk (for each group) is a tub that holds community pencils, crayons, and glue. The students stay in the assigned seats for approximately a month. If there is any extended behavior issues, there is a single desk that can be used to have a student move. Additionally, there is a back desk used for projects that can be used for short term movement of a student as well as a horseshoe (rainbow) shaped table that can also be utilized. There is also a rectangular shaped table by the hall window/sink area that is occasionally used for work. It is primarily used during Walk To Read when a group meets there.

The students each have a mailbox in the back of the room for correspondence with home. They also have a coat closet where they keep their coats and backpacks. There are also passes for the students to use when traveling to the nurse or the bathroom. When students have asked permission to go to the bathroom, they place the pass on their desk to show where they have gone to. There is also a book area by the window/door to the playground. It has book that are categorized and a couch with pillows.

There are no student computers being used in this particular classroom. The students have not yet used any technology.

(NOTE: attached on the following page is a map of the classroom marked 1a)

 Classroom Management/Teaching Style/Support:

There is a rewards chart used in the classroom as one part of the classroom management. The students are seated in tables (as mentioned before) and during transitions and work times, if a whole group is exhibiting positive traits (follow directions, listening, showing respect), they can earn a star. When groups accumulate a certain number of stars, they can make a trip to the treasure chest and choose a treat (little toys usually).

Overall, the classroom works on positive reinforcement. Students positive behavior is often highlighted ("I'm noticing that Sydney is showing me she is ready to learn by setting flat and quietly with her eyes on me."). When is student is acting out or not participating, they are asked to make the choice to participate or raise their hand, or whatever the correct choice is. If students continue to act out or not participate, they are given the choice to sit in the back and meet at recess to complete the work. There are a few students that throw tantrums occasionally and it is policy to try to solve it inside the classroom but if it is uncontrollable, there are office staff in place to come and escort the child to the office to meet with the principal.

The students are generally instructed at the front of the classroom in a whole group. They generally work individually but in the small groups. They are encouraged to talk with their neighbors in their group for answers and brainstorming purposes. Students have done some minimal work with partners.

There are basically zero parent volunteers in the classroom.

Overall Student Characteristics:

The students in the classroom total 20. There are currently 11 girls and 9 boys. There has been several students that have left and arrived over the last few weeks so these numbers have been fluctuating. The students have moved for reasons such as new homes, military stations, and unexpected moves (reason unknown).

The students range from 6-8. There are two students that have been retained either in kindergarten or last year in first grade. The students represent diverse backgrounds. Many of the students come are biracial. The following is an approximation of the students background: Russian (1), Islander (2), Hispanic (5), Black (5), Caucasian (7). There is one family who speaks only Spanish and requires translation for all materials sent home and conferences. There are two ESL students but neither of them participate in a pull-out program and speak English fluently.

One male student has a IEP for a communication disorder. Under the category of developmental delay, the student is adversely affected with a delay in social/adaptive skills that affects his participation in classroom activities. He is receiving specially designed instruction in social/adaptive skills, occupational therapy, and speech/language. He is working on understanding language as well as using appropriate language is classroom and social settings. During the week, the student is pulled out as well as receives in classroom assistance from a para-educator. Additionally, teachers are beginning to suspect that this student may be on the autism spectrum. The parents are unsure if they are going to seek a diagnosis. There is another male student who has been diagnosed with Tourette's however there is no IEP or other accommodations in place. Finally, there is one female student that teachers suspect has ADD but the parents are unsure if they are going to seek a diagnosis.

There are several military families in the classroom. One student arrived at the beginning of the year from Costa Rica and one just arrived from Germany a few weeks ago. None of the parents are currently deployed to Iraq but the new student from Germany's father is scheduled to deploy this summer.

The students have been participating in Walk to Read this whole year. Several of the students from this class are behind grade level. The students read in Walk to Read, attend library once a week, and are read to daily. The students do not read choice books in class.

The majority of students are close to grade level in math. The students are accustomed to doing story problems in class but are still struggling with how to illustrate their work and decode what problems are asking. There is a large difference in ability with the students. Some are still struggling with single digit addition and some are fluent with much larger numbers in both addition and subtraction.

The students have made lots of progress from the beginning of the year in writing. They have been working towards creating cohesive pieces of work that include a single subject with a topic sentence, supporting details, transition words, and a conclusion. They have recently begun working on word choice.

State Pedagogy Instrument

CLASSROOM AND STUDENT CHARACTERISTICS

Teacher Candidate: _Katy Michelle Bryan_____   Date: _ April 21, 2009_____
Cooperating Teacher: _Anna McCourt_____   School/District: _North Thurston___
Grade: _First_____   Supervisor: _Terry Ford_____
Lesson Title: _Problem Solving Unit_____

1. Classroom rules and routines that affect the lesson: The group is used to being taught first as a whole group and then practicing either individually or within a small group (usually with one partner). I will continue to follow this for the most part though I will vary the groups in which they work. I will use purposeful pairing for both behavioral and academic reasons.

2. Physical arrangement and grouping patterns that affect the lesson: The class is set up in small groups of between 3-5 students. The students are often allowed to select partners. Though a large part of their work will still be in their groups, the students will be moved to new group approximately 3 weeks into the lesson. Additionally, I will occasionally choose their partners for them based on more capable peers and behavioral issues.

3. Total number of students: 21 (however by the end of the unit 18)

4. Females: 11   Males: 10

5. Age range: 6-8 years old

6. Describe the range of abilities in the classroom: The students have a large range of ability that changes based upon the subject. There are students that are very early readers (far under benchmark) up to students reading well above benchmark (at second to third grade level). With math, the ability is similarly ranged. Some students are still counting all single digit facts on fingers and have no fluency with their addition (or subtraction facts). Other students are beginning to explore large number addition and subtractions as well as early multiplication.

7. Describe the range of socio-economic backgrounds of the students: The students have a wide background however the majority of students come from single parent households. Many students are only in contact with a single parent. Most students are from low to lower-middle economic backgrounds. Nearly every student in class is on free lunch.

8. Describe the racial/ethnic composition of the classroom, and what is done to make the teaching and learning culturally responsive: The majority of students are non-white. There are backgrounds including but not limited to: African American, Asian American, Russian, Mexican American. On a school wide level, there are different countries

featured each month which include an assembly with a presentation on a cultural aspect of the country. Beyond this, not much is done to be culturally responsive.

9. How many students are limited English proficient? 1

10. Describe the range of native languages and what, if any, modifications are made for LEP students: There is one student that use to participate in the ESL program but he is not any longer. He speaks both English and Spanish fluently. No modifications are made him.

11. How many special education and gifted/talented students are in the class and what accommodations, if any, are made for them? Special Education Number of Category Students Accommodations/Pertinent IEP Objectives?: There is one student on an IEP for a communication disorder. He receives approximately 15-20 minutes of assistance during writing and some work on his communication during a pull out on Tuesdays as Fridays.

12. How many 504 students are there? What accommodations are made for these students? 0

13. Are there additional considerations about the classroom/students for which you need to adapt your teaching (e.g. religious beliefs, family situations, sexual orientation)? No

Individual Student Characteristics

Student #1- Female, age 6, African American. This student arrived this year from Costa Rica. Her family is military and they were stationed there for approximately one year. When the student first arrived she often stated that she wanted to go back to Costa Rica. The student had to be sent to the office several times at the beginning of the year after refusing to participate. Since the rough start, the student has adjusted well and is generally happy and participates in class. The student loves to be silly and make jokes. Student has many friends in the class and in other classes as well. She sometimes acts silly during learning times and need redirected. In reading, this student is in the lowest Walk To Read group. She has recently attained a new glasses prescription and is still adjusting to this in terms of her reading. In her writing, student's voice is very clear and she often includes many details. The student still moves from topic to other ideas. In math, the student is generally able to figure out the answer but is still working to express her thinking. The student has strong parental support at home and often completes the optional homework.

Student #2- Male, age 7, Caucasian. This student has been diagnosed with Tourettes. The student resides primarily with this mom and occasionally sees his dad. His grandmother is active in his life. The student has had the diagnosis for this school year and according to his family is still adjusting. Some teachers believe that the student often blames his behavior on his Tourettes though unrelated. The student often acts out in class whether it is a refusal to participate or

yelling matches with other classmates. He has one primary friend and often fights (yelling) with this friend. When I first came to the class he was sitting in a single desk separate from the class due to a recent yelling match with classmates. The student states that he doesn't like reading, writing, and math. He often begins any task with the declaration that he can't or won't do it. Student often needs a high level or coaching or assistance to complete a task. In reading, student is in the middle Walk to Read group. He participates sometimes but is easily frustrated if the activity doesn't come to him easily. In writing, the student generally will not begin on his own. He will state that he doesn't know what to write about. With a lot of prompting he will write. The sentences fluctuate between making sense and being incomplete. In math, the student seems to be most frustrated. He says he is no good at it and doesn't understand what to do. I am unsure of the level of parental support. I don't believe there is much support and student talks about being woken up at night. Student comes to school tired occasionally. Student walks home alone. He is the only student in class who does this. Student never completes homework.

Student #3- Female, age 7, Mexican-American. This student was born in Mexico but has resided in the United States for nearly her entire life. Student is currently learning Spanish and loves to share her knowledge of Mexico including her trips to Mexico to visit family. Student's mother just had a new baby (in mid-April). The student was pulled out of kindergarten last year and was home schooled. There was some concern that with her return to public school during first grade that she would be behind but the student seems to be keeping up and at grade level in all subjects. The student loves animals and has many on her farm. She is very into ABBA and loves to bring their greatest hits to share with the class. The student has several friends in the classroom. She occasionally butts heads with another student in the class who is also one of her best friends. Student is in the middle group for Wall to Read. She commented that she can't concentrate in reading because it's too loud and this is trying to being remedied. In writing, the student often completes very vivid and detailed stories. Student is able to create a topic sentence, details, and conclusion. In math, student is generally able to complete the work with little guidance and explain her thinking. Student has a very large amount of parental support at home. Student generally completes homework.

Student #4- Male, age 7, Caucasian. Student resides primarily with his mother and occasionally sees his father. He spends a lot of time with his two cousins who live across the street. Student is good friends with Student #2. (They often have conflict!). Student is somewhat shy and quiet but can flip to angry rather quickly. The student has some issues with his temper but is working on it. He is aware and can speak to his knowledge that sometimes he reacts angrily and is beginning to catch himself when he does it. The student really loves science and rocks. He often brings in "special" rocks that he finds at his bus stop. Student recently saw his mother have a seizure and has been somewhat upset (more angry) than before. Additionally, when his mother found out he was struggling with reading, she cancelled their vacation and since that time the student has been very angry and unwilling to read at home. Student is in the lowest group in Walk To Read and as mentioned before is very resistant to reading at home with his family. Student is struggling with writing but tries very hard. He often struggles to get started but when he gets going is able to complete the work on his own. In math, the student struggles to decode what story problems are asking. Student will ask for help but seem to just want a bit of attention

and time with an adult. Student seems to have parental support at home from his mother however he rarely turns in homework.

Student #5- Female, age 6, Caucasian. Student resides with both mother and father. Her mother is a middle school teacher. Her mother is very involved in contacting the teacher and asking lots of questions. The student is somewhat quiet and very in-tune to the happening of others. When students are upset she will make them a card or try to comfort them. Student is somewhat small in stature compared to the rest of the class. Student loves animals and rainbows. Student has many friends in the class as well as in other classes. In reading, the student is in the middle group for Walk To Read. In writing, the student often writes vivid stories and is able to complete stories that have a topic sentence, supporting details, and conclusion. Student has a lot of parental support at home from both mother and father. Student always completes homework.

Instructional Implications:

There are multiple levels of instructional implications when teaching in this particular classroom, community, and school. In this particular school, there are not a lot of financial resources or parental support. Many parents are single, working parents that do not have a lot of extra time to volunteer in class or do large projects at home. In regards to homework, it is often a challenge to get most/any homework completed or returned. The fact that homework is such a challenge, will make the homework piece difficult. I will need to make it engaging but not time consuming. Additionally, I will need to anticipate that many or most students will not return it so if I am building an in class lesson around the homework, some adaptation may be needed.

In my observations, I have found that most of the lessons thus far work around a patterned way of answering story problems. Students are required to demonstrate their understanding of the problem by drawing a picture, providing an answer, creating an equation (number sentence) and using their words to explain their thinking. This is the same format that students are tested with. I plan to teach around these same skills since this is what students need to be familiar with. Additionally, in completing the pre-assessment, I have noticed that there are some holes in the students ability to complete these tasks. For example, some students are not able to explain their thinking with words whereas other cannot create a number sentence. For my lessons, I will break down each part of the problem solving to ensure that students have a clear understanding of what their answers should look and sound like as well as how to figure out the equation.

This same EALR/GLE goes on to state that students should be able to create their own story problems. I would like to reach this EALR but I suspect that there may not be enough time to get that far. To address this I will do several things. First, I will be sure that the problems that we are using stem from familiar ideas, places, and items in the students lives so that they can see how the problems relate to real life. I am also construct story problems with guidance and input from the students. Finally, for students who are further developed in the problem solving skills, I may have them work on creating story problems for their peers to solve either in class or as homework.

For assessment, the students in this class are used to being assessed in a particular way. The assessment for students generally occurs with benchmark testing which is given to each individual in a whole class. The teacher leads the assessment and it is completed in a particular amount of time. There is not much formative assessment completed in this classroom and no formal Positive Impact on Student Learning (PISL) questions are recorded.

To attend to what is already going on the classroom, I will design the assessment in a similar style to the benchmark. The lessons have also been designed to help students gain/improve the skills needed to meet the EALR's as well as the benchmark tests. Because of the importance and emphasis on formative and summative assessment, I will need to create ways to create notes and chart the progress of students. Though the students are not use to their work being collected consistently, this will also need to happen so I have records of their work. Finally, the PISL questions are different than what the students are use to completing. Because there is a wide range of writing ability in the class, I will need to find alternative ways to evoke these answers from the students. This may come in the form of small group or individual interviews in which I transcribe answers. Though more difficult, I may try to create a version of the questions with less words and possibly pictures that the students could complete on their own. However, because of the importance of capturing the students voice, I think that tape recording or transcribing small group or individual interviews would be the most authentic way to do this.

SECTION 2: LEARNING GOALS

INSTRUCTIONAL GOALS/KEY CONCEPTS:

The primary learning objective of this unit is as follows:

Following a series of lessons on problem solving, students will be able to identify a variety of strategies to solve problems, answer it correctly, and describe how they solved the problem.

The specific learning goals/objective is closely aligned with the following state standards:

SUBJECT: Math

EALR:

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.D Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

1.6.E Answer the question(s) asked in a problem.

1.6.G Describe how a problem was solved.

The learning goal comes from both the state standards as well as the North Thurston final first grade benchmark (#4). In the final benchmark, students ability to complete story problems will be judged with the following scale:

3-points: The student shows understanding of selecting and using and operation by doing the following:
      -shows a picture that matches the story
      -writes an equation that matches the story
      -correct answer
2-points: The student does two of the above.
1-points: The student does one of the above.
0-points: The student shows little or no understanding.

(A copy of the North Thurston Benchmark 4 Grade 1 is attached on the following pages)

My learning goals were based directly on these two documents. Grade 1 students need to be fully prepared to meet the benchmark standards by the end of the school year. At the end of this unit, students will begin the benchmark.

Essential Questions for this unit:
-Do students have a variety of strategies to solve problems?
-Are students able to successfully employ a strategy to find the correct answer to a story problem?
-Can students use their written words to express their thought process in solving a story problem?

Bloom's Taxonomy:
The learning goals represent several levels on Bloom's Taxonomy. The first goal (1.6D) requires students to select a strategy and employ it to solve a problem. This is from Bloom's third level of application. This goal requires that rather than simply being told the process to solve the problem, students should be able to select a from repertoire of strategies the one that would work best for the problem.
The second goal (1.6E) is lower on the scale. It lands on the first level which is knowledge. This is due to the fact that it simply asks the students to find the correct answer. Though low on the scale, it is important that students are able to find the correct answer.
The final goal (1.6G) hits around the area of application and analysis on Bloom's scale. Students are asked to explain their thinking with both written words as well as an equation (number sentence) to explain their thinking. This is much deeper on the Blooms scale than simply identifying an answer.

SECTION 3: ASSESSMENT PLAN

OVERVIEW OF THE ASSESSMENT PLAN:

1.6D: To assess students ability to select strategies I will first assess (through the pre-assessment) the methods I observe students using as well as the ones they identify they use. This is found in part 4 and 5 of the pre-assessment. After each section was completed I verbally asked students to identify their strategies as well as recorded what I saw them using. I wanted to be sure to ask the students about their methods to assess their ability to identify the strategies they were using. This is key because I found several students were unaware of how to identify what they did to solve a problem. Also, by implementing the pre-assessment individually I was able to verbally ask each student rather than relying on their ability to read the problem or write an answer.

   To post assess the students, I will have them complete a similar story problem as they completed on the pre-assessment. After completing the story problem, I had them self-identify all of the strategies that they know how to use to solve story problems. In addition to this, I looked at students written explanations to see if students were explaining the strategies they were using.

1.6E: To pre-assess this part I looked at two items. First, I looked if the students were able to find the correct answers to section 4 and 5 of the assessment. Next, I looked at the students ability to find the correct answer to the story problem.

   On the post-assessment, I looked at the student ability to find the right answer on the final story problem. Additionally, I considered the students overall progress through the unit as a whole.

1.6G: On the pre-assessment, I looked at the quality of the students answers in the written explanation. Specifically, I was looking for how clear the student was in explaining their thinking. Did they simply state, "I counted." Or were they able to go deeper and explain the steps they went through to solve the problem. Additionally, I looked at the students written equation (number sentence) to see if it accurately corresponded and supported their answer to the problem.

   I used very similar methods to assess this goal in the post-assessment. I looked at the final story problem for clarity and accuracy of their explanation. Additionally, I looked at the written equation (number sentence) to see if the corresponded and supported their answer.

FORMATIVE ASSESSMENT: For the formative assessment, I will collect several pieces of work of the students in which they complete and explain their story problems. From this I will use the rubric to evaluate their progress and the direction in which the unit will go.

Attached to this section are copies of the pre and post assessments.

All of the students work was evaluated using the following rubric. Students also completed this rubric twice- once at the half way point and at the final assessment.

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem. (1.6D)	I am not sure how to solve the problem.	I can solve problems with some help from my teacher.	I have a strategy to solve problems.	I have many strategies I can use to solve problems.
I can find the correct answer for a problem. (1.6E)	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence. (1.6G)	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

POSITIVE IMPACT ON STUDENT LEARNING:

      I will use two methods to determine the positive impact on student learning. First, all students will have the opportunity to assess themselves on the rubric during two points in the unit. First at the mid-point of the unit and then again at the post-assessment. Second, I will have students verbally complete the PISL questions twice during the unit. During the mid-point I will interview the student and verbally record their exact answers to the questions. Using this same method, I will ask students again after the final assessment.

      By interviewing students individually I will be able to better attend to cultural, language, physical and cognitive differences of students. For most students, they had never completed or answered question such as this before. I used my knowledge of the students to rephrase and ask clarifying questions. If I had asked the question on a whole group level or had them fill it out their answers would not have been as in depth. I do believe that if this process was repeated and students had lots of practice, they could work up to creating their own written answers at some point.

Attached at the end of this section is a copy of the record sheet used to ask the students the PISL questions.

SECTION 4: DESIGN FOR INSTRUCTION

RESULTS OF PRE-ASSESSMENT:

I analyzed the pre-assessment using the rubric. The results were as follows:

Unit Goal	1-Starting Out	2-Moving Along	3-Almost There	4-I Got It!
1.6 D	3 students	7	3	5
1.6 E	4	7	3	4
1.6 G	6	3	6	3

After the assessment there were several items that were clear. First, there was a very large range of abilities in regards to all unit goals. There were students who were very proficient at some unit goals and just as many struggling to even approach being at 1-starting out or 2-moving along. Students ability to explain their answer (1.6G) had the fewest number of 4's however the other skills were also in need of improvement. The students were divided through each of the four sections on each unit goal. There were mixtures of every ability in terms of all goals.

By reviewing the information it is clear that even though some students are already at the 4-I got it level, there are more students that need to improve their skills to be up to benchmark standard. From this information, I will continue with my plan to address all three unit goals in the lessons. I will place a large emphasis on students explaining their answers for two reasons. First, students are still learning how to make their thinking transparent. This is a new skill for many students and is more of a struggle than some other skills. Second, slightly more students are in need of work on this skill. Also, in learning that there is a small group of students that are more skilled than others at explaining their thinking (1.6G), I will use their ability to explain their thinking to help move their peers along through math talks and more capable peers.

UNIT OVERVIEW

	TITLE	LEARNING GOAL	DESCRIPTION	ASSESSMENT
Lesson #1	Pre-Assessment	1.6D, 1.6E, 1.6G	Students will be tested on several areas including their ability to problem solve, identify strategies, and explain their thinking.	Pre-Assessment
Lesson #2	How To Read Story Problems (Sheep)	1.6D, 1.6E, 1.6G	Students will work on how to read the relevant information from story problems.	Formative
Lesson #3	Finding The Right Answer	1.6E	Students will practice reading story problems to	Formative

	(Bean Bags)		accurately solving them for the right answer.	
Lesson #4	Who's In The Barn	1.6G	Students will practice making equations (number sentences) to explain their answers.	Formative
Mid Self-Evaluation	Rubric	1.6D, 1.6E, 1.6G	Students will place themselves on the rubric.	Formative
PISL	PISL questions		The five students being followed for the EALR project will be interviewed and asked the PISL questions. Their answers were be recorded verbatim.	Formative
Lesson #5	Putting It All Together (Rocks)	1.6D, 1.6E, 1.6G	Students will practice putting all the pieces of story problem solving together in this check-in.	Formative
Lesson #6	Equality Pre-Test	1.6G	Student were given this as a pre-assessment for a later unit. This was used as an opportunity to practice creating clear answers to explain their thinking.	Formative
Lesson #7	Using My Words	1.6G	Students shared whole group about the ways they explain their answers. Students will brainstorm ways to explain their answers then practice being very clear to show their thinking.	Formative
Lesson #8	Post-Assessment	1.6D, 1.6E, 1.6G	Students will complete this final assessment to demonstrate their learning in regard to the unit goals.	Post Assessment
Final Self-Evaluation	Rubric	1.6D, 1.6E, 1.6G	Students will place themselves on the rubric.	Post-Assessment
PISL	PISL questions		The five students being followed for the EALR project will be interviewed and asked the PISL questions. Their answers were be	Post-Assessment

			recorded verbatim.	

LEARNING ACTIVITIES

There will be many learning activities implemented in this unit. Students will work alone, as partners, and discuss as a whole group. I will focus on three specific activities and explain their placement in the unit.

Activity #1: Lesson #2- How To Read Story Problems relates to all 3 instructional goals. I found in the pre-assessment that students often had difficulty decoding what the story problem was actually asking the student to do. This is an important skill for all students not only in math but in all subjects. Decoding the question is an integral piece of student learning. In this activity I will use what I learned on the pre-assessment which is that there are some very capable peers who can decode the questions. In this lesson, I will have students explain how they get started on story problems. This will be conducted in a math talk style in which many students have the opportunity to share their opinion. Next, students will brainstorm with their neighbor the first step they will take when they get the problem. I will assess the student learning by collecting their work and evaluating it with the rubric as a formative assessment.

Activity #2: Lesson #4- Who's In The Barn is a lesson that focuses on unit goal 1.6G. This goal focuses particularly on a student's ability to support their answer by creating an equation or number sentence. From the pre-assessment and the formative assessments, it was clear that students were having difficulty connecting the picture with the number sentence as support. For this activity, the picture is a very clear visual which makes the leap to equations a bit easier for struggling students. Additionally, this lesson allows for differentiation. Students who are struggling with larger number can be given a smaller target number and students that need further challenges can be given a larger number. This work will be collected and assessed with the rubric and used as a formative assessment.

Activity #3: Lesson #7- Using My Words is focused to further address 1.6G although the other (1.6D, 1.6E) goals are also brushed upon. This lesson is another time in which the voice and sharing of students is key to further other students understanding. Students will share the types of answers they use to explain their thinking. As much as I can explain the words I am looking for students to use, it is more powerful for students to use their kid-language to create explanations. By listening to peers and giving students a chance to review and change their own words, it becomes a more powerful lesson. This lesson stems from the fact that students were still struggling with using clear language that explains the steps they took to solve the problem. I learned this from examining the formative assessment (collected work).

TECHNOLOGY:

This was by far the most challenging portion of the EALR project. At the beginning of my time at this school, I went to the computer lab and began to investigate the technology available for student use. After visiting the computer lab with my mentor teacher she demonstrated the amount of time and steps it takes to log-in each student on to the computer. Subsequently, the schools internet is extremely slow which made the use of web sites that have story problems or other math activities difficult. After reviewing the options and keeping in mind that the students need to use technology (rather than myself using it in front of them), led me to choose that I would not include technology in my EALR project.

OTHER INSTRUCTIONAL RESOURCES:

No other instructional resources are needed other than a computer and the teacher's ability to create the assessments and problems on the computer (or by hand if so they choose).

TEACHING PROCEDURES:

In this sections is lesson plans for this unit. Since the assessments have already been included in Section 3, I will only include the lessons rather than the assessments.

LESSON #2

Lesson Title: How To Read Story Problems

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.D Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

1.6.E Answer the question(s) asked in a problem.

1.6.G Describe how a problem was solved.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -problem solving page (see attached)
-pencil
-manipulatives (available, if needed)

Procedures:

Bring students up to the front of the room. Have them sit where they can all see the white board. (If possible use a document camera to show students an enlarges version of the lesson.)

Read the story problem to the students. Have them listen for what the story problem is asking them to do.

After reading the story problem, ask students what the story problem is asking them to find or figure out? (how many piles of feed to they need to feed all the sheep)

Re-read the problem again and have students check and listen to see if their idea is correct.

Explain to students that a big part of figuring out story problems is trying to figure out what the problem is asking you to find.

Using the paper, circle the information (numbers) that are important to figure the problem out. Explain to students that this is one strategy they can use to figure out what the problem is asking.

Tell students that you have noticed that a lot of students have had problems figuring out where to begin with story problems. Let's take a minute and brainstorm together about where we can start on our problem today.

Next, have students take minute to think about what their first step will be when they get their paper and get started. After a minute, ask students to raise their hand if they have an idea of the first thing they can do to get started. Have students share their answers.

Direct students (via an answer or your own sharing), that first they should figure out what the problem is asking like they already did, then they should begin by drawing the picture, exactly as the problem says.

Dismiss students to return to their seats to begin working on problems. As students are working, move around the classroom and help students to get started.

If students get stuck about the bales of hay, have them first draw the sheep then have them use cubes (or another manipulative) to actually act out feeding the sheep.

After students finish the work, collect it to see what kind of mistakes students are making and use the information to build the next lesson.

After the lesson, have students fill out the following rubric.

Assessment:

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the problem is asking. Encourage student to use manipulatives to solve problem. If needed, work with student one-on-one to explain their thinking.

Lesson Title: Finding The Right Answer

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.E Answer the question(s) asked in a problem.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -problem solving page (see attached)
-pencil
-manipulatives (available, if needed)

Procedures:

Bring students up to the front of the room. Have them sit where they can all see the white board. (If possible use a document camera to show students an enlarges version of the lesson.)

Remind students of the previous activity in which they practiced figuring out what the problem was asking and what was the first steps to take. Explain that today they will be figuring out how reading the information is part of being able to find the right answer.

Read (and write or show) this problem to students:

If I have 3 apples but I want 5 apples, how many more apples to I need?
Explain to students that you have noticed that some people are getting a little mixed up when they read the problem. Tell the students that you have noticed

that students will often just look at the two number and then add them up. For example with that problem, the students would see a 3 and a 5 and then write:

3 + 5 = 8

Ask students if they agree with that answer. Have them talk to their neighbor about what they think the answer is. As students chat, listen in to what they are saying to see what kind of answers they are sharing.

Ask students to share their ideas that they talked to their neighbor about. Have many students explain their thinking and how they solved the problem. After several students have shared, give the students this problem to try and figure out:

If I have 4 bananas and 7 friends, how many more bananas do I need so that I can give all of my friends a banana?

Have students take a minute to try and figure the problem out. When students have an idea about the answer, have them put a little thumb up against their chest (rather than a hand up). Remind students that showing you the little thumb up should be a quiet thing that only the teacher can see.

After the most students have their thumb up, have them talk with their neighbor about what their answer is and how they found it.

After students have had a few minutes to share, have many students share how they solved the problem. Encourage them to be very clear and describe each step of how they found the answer.

Explain to students that now they will have a chance to solve a problem and practice reading the problem and finding the right answer. Remind them that it's important to read the problem and not just add the number up!

Read the problem out loud to the students and then dismiss them to get started on their own. Remind them to include a picture, number sentence and clear answer that shows their thinking.

As students work, move through the classroom to check on their understanding and help students work through their problems.

Collect the students work and use the following rubric to assess their work.

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the problem is asking. Encourage student to use manipulatives to solve problem. If needed, work with student one-on-one to explain their thinking.

Lesson Title: Who's In The Barn?

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.G Describe how a problem was solved.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -*Big Red Barn* By: Margaret Wise Brown
-pencils
-blank white paper
-white board/overhead

Procedures:

Have all students come to the floor and get a place to sit.

Tell students that they are going to use their super math skills and mystery solving skills to figure out a puzzle!

First, we need to think about what we know about farms. Some of us have been to farms but some of us have not so let's brainstorm together about the animals that might be on a farm. Who has some ideas?

Record students ideas on the board by writing the animals names down. Some names may include:

-sheep
-cow

-duck
-horse
-peacock

Be sure to write the names vertically so that you can turn it into a chart in the next step.

After students have a good size list, have them think about how many legs each of the animals have. Have students volunteer their ideas of how many legs the animals have. Using the previous animal name list, create this chart.

Sheep	4
Cow	4
Duck	2
Horse	4
Peacock	2

Explain to students that we want to see if we have forgotten any animals and check what we know about how many legs each animals have. To do this, we will read "Big Red Barn". Listen to the words and watch the pictures as I read to see if what you know about farms is true!

After reading the story, ask students if there is anything they would like to add or change on the chart. After the chart, explain to student the problem…

If you had a barn and you knew that you could fit 8 legs in the barn, what are some combinations of animals we could put in the barn? I'm going to draw a picture to help me figure out this problem. What should I draw first?
(students should say barn)

Draw a big barn, ask students what animal you should put in the barn first. Add an animal (cow), and ask students what other animal they could add (horse). As you are drawing, explain to students that you are using your quick sketches instead of your fancy art drawings.

Ask the students what animals you should add next. Students should identify that you already have 8 legs in the barn. Erase one of the animals, ask students if there are different animals you could use to make 8 legs total. Add another animal or two (duck/chicken), and show a different way to solve the problem.

Ask the students if they can think of a way to create a number sentence to show how they solved the problem.

Label the animals with the number of legs on the picture. Then use the number of legs to create a number sentence.

4 + 2 + 2 = 8   or   4 + 4 = 8

Tell students that their challenge today is to figure out at least 2 ways to solve the problem but instead of 8, they need to have 12 legs in the barn.

Explain that each student will get a blank piece of paper and they should solve the problem two times, one on each side of the paper.

Tell students that if after solving it once they want a super challenge, they may come and ask for a bigger challenge number after they solve it once.

If needed, differentiation can occur at this point by giving some students smaller numbers and some students larger numbers if needed.

Remind students that they should label their animals and that the names are on the board as well as creating a number sentence to show their thinking.

After collecting the students work either at the end of the lesson or unit, have the students fill out the following rubric.

Assessment:

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math	I am not sure what	I can solve	I have a strategy to	I can use many

strategies to solve a problem.	strategies I have to solve the problem.	problems with some ideas from my teacher.	solve problems and always use the same one.	strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the task is. If needed, work with student one-on-one to explain their thinking.

Lesson Title: Putting It All Together

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.D Select from a variety of problem-solving strategies and use one or more strategies to solve a problem.

1.6.E Answer the question(s) asked in a problem.

1.6.G Describe how a problem was solved.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -problem solving page (see attached)
-pencil
-manipulatives (available, if needed)

Procedures:

Have all students come to the floor and get a place to sit.

Ask students to explain what kinds of things they have been working on in math and story problems. Students should brainstorm something similar to this:
-reading problems carefully to figure out what they are asking
-finding the right answer
-creating equations and number sentences to support their thinking
-using different strategies/ways to solve problems (fingers, number chart, counting up, ect)
-using clear words to explain their thinking

Explain to students that today they will have the chance to show the progress they have made at getting better at some of these things. Tell students that they will not get a long of help to day because they you are looking to see what students know and what they still need to work on. Because of this it's important to work only on your own work because I need to know about each student.

Read the story problem out loud to the students and explain that you will be able to come around and read the problem again for students but other wise they should do their best work on their own.

After reading the problem to the students, dismiss them to their desks to work quietly. While they are working, move throughout the room to make sure students are working on their own and read the problem if needed.

After students complete to the problem, collect it and use the following rubric to evaluate the work.

| | 1 | 2 | 3 | 4 |
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the task is. If needed, work with student one-on-one to explain their thinking.

Lesson Title: Equality Pre-Test

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.G Describe how a problem was solved.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -equality pre-test (see attached)
            -pencil
            -manipulatives (available, if needed)

Procedures:

Explain to students that they will be starting a new unit soon so to get ready for it, you want to find out what they know about the new unit. The problem that they are going to work is short but tricky. It may actually be something that you don't know yet which is ok. What is important is that you try your best to solve it. After you try to solve it, the problem wants you to explain how you got your answer. Let's take a minute to review what we have been learning about explaining how we get our answers.

Have students brainstorm what to do to create a good explanation of your thinking. The brainstorm may include:
        -describing each step of your thinking
        -just saying "I knew it" or "I counted" is not enough
        -explain your first step
        -explain the strategy you used

Explain to students that like on the last story problem, it's important that they do their own work and that you can't help them very much.
Give the students the problem and have them work individually. Move through the room to check in with students.

After students complete the problem, collect the work and evaluate using the following rubric:

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the task is. If needed, work with student one-on-one to explain their thinking.

Lesson Title: Using My Words

Grade Level: 1st

EALR/GLE: Math

1.6. Core Processes: Reasoning, problem solving, and communication

1.6.G Describe how a problem was solved.

Objective: Following a lesson (or series of lessons) on problem solving, students will be able to use a variety of strategies to solve problems, answer it correctly, and describe how I solved the problem.

Materials: -blank paper
-pencil
-white board
-manipulatives (available, if needed)

Procedures:

Explain to students that after looking at some of the story problems they have been working on, you realized that sometimes you can't quite tell what students did to solve a problem. Have students brainstorm things they can do to solve problems. They brainstorm may include:
-pictures
-number sentences/equations
-words/sentences

Explain to students that you have noticed that students are getting much better at making clear pictures and equations but that sometimes their words don't quite explain what they are thinking.

Tell students that you are going to practice with them and get their help to come up with some great answers to solve problems. Let's take a look at this problem:

3 + 4 = ?

Have students take a minute to figure out the answer. After they solve it they should think about the words they could use to describe their thinking.

Have students share their answers. Try to move students towards answer such as:

-I knew that 3 + 3 is 6 and since 4 is one more than 3 I knew that it was one more than 6

-I put 3 in my head then I counted up four more

-I put three in my head then I counted up four more with my fingers

-I looked at my number line and put my finger in 3 then I moved up 4 more until I got to 7

Discourage students from answers like:

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-I just knew it
-I counted
-fingers
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Ask students why it would be important to use answers that are more clear? (Your teacher and other people want to know exactly how your brain figured things out. They should be able to read your words and know what you did even if you weren't there to explain.

Have students practice again with this equation:

4 + 2 = ?

(Note: By using smaller equations it will help students focus their time on explaining with words rather than focusing on solving the problem.)

Have students share with their neighbor the words they would write down.

Have students share their ideas. Record them on the board.

Tell students you want them to practice solving only one problem but you want them to really focus on using clear words to explain their answers. Explain that

you may push them a little to be even more clear and add on to their answer. Remind students of the quality answers they brainstormed earlier and that is what you're looking for.

Have students return to their desks and using a blank piece of paper have them complete the following equation and then explain how they got their answers. Remind students that they should put their name and the date and then write the equation down and then solve it and use their words to explain. The equation is:

$5 + 4 = ?$

As students work, check in with them. Have them show you their work and if needed have students add more to their answers to fully explain.

Collect students work and use the following rubric to assess their work:

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

ADAPTATION: For student with communication disorder, check with students for their understanding of what the task is. If needed, work with student one-on-one to explain their thinking.

SECTION 5: INSTRUCTIONAL DECISION-MAKING

MODIFICATION #1: During my review of students work after lesson #2, it was very clear that the students had still not mastered decoding what a problem is asking. I had originally intended this to be a single, straightforward lesson and then I would move on. After reviewing their work, it was clear that another lesson and more practice was needed. From this information, I created lesson #3 and added several pieces. First, I had students practice with simpler problems so it was accessible to all learners. Second, I had students share their first steps to decode problems. I realized from reviewing student work that there was in fact some students that were very strong in decoding problems. I felt that it was much more powerful to have peers explaining this than me just re-telling students. Finally, I felt that with another opportunity for students to practice this skill, students would be able to try again with a deeper understanding. I also hoped to see which students (if any) may need additional small group work.

MODIFICATION #2: As student completed lessons #5 and #6, it became very clear that students did not have an understanding of what a quality answer to explain their thinking look like. Students were still using answers such as "I counted" or "I just guessed". I realized that students needed more ideas and practice at using their words. I was getting students using the same "I counted" reply over and over again. Similarly to before, I realized that my explanations of being clear with words was not sufficient so I wanted to try and do a similar exercise in lesson #7 as in lesson #3. In this lessons I wanted to students to share their answers and ideas with their peers. I felt like this would give students better language opportunities than if I just told them what I was looking for. Additionally, as a whole group we were ale to establish why this would be an important practice as well as what was quality and non-quality answers.

SECTION 6: ANALYSIS OF STUDENT LEARNING

WHOLE CLASS ANALYSIS

LEARNING GOAL 1.6 D

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can use my math strategies to solve a problem.	I am not sure what strategies I have to solve the problem.	I can solve problems with some ideas from my teacher.	I have a strategy to solve problems and always use the same one.	I can use many strategies to solve problems.

From this I could clearly see that at the pre-assessment only 8 students were at the 3 or 4 on the rubric in regards to this specific learning goal. By the end of the post-assessment that number had increased to 12. Conversely, the number of student in the lower part of the rubric (1 and 2) at time of pre-assessment was10 and by the post-assessment was 5. By looking at this information, it is clear that many more students (8) were able to not only reach the top half of the rubric but actually moved into the 4th section in which they could identify multiple strategies for problem solving.

LEARNING GOAL 1.6 E

	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can find the correct answer for a problem.	I have a hard time finding the correct answer for problems.	I sometimes find the correct answer for the problem with some help.	I usually find the correct answer for problem on my own.	I almost always can find the correct answer.
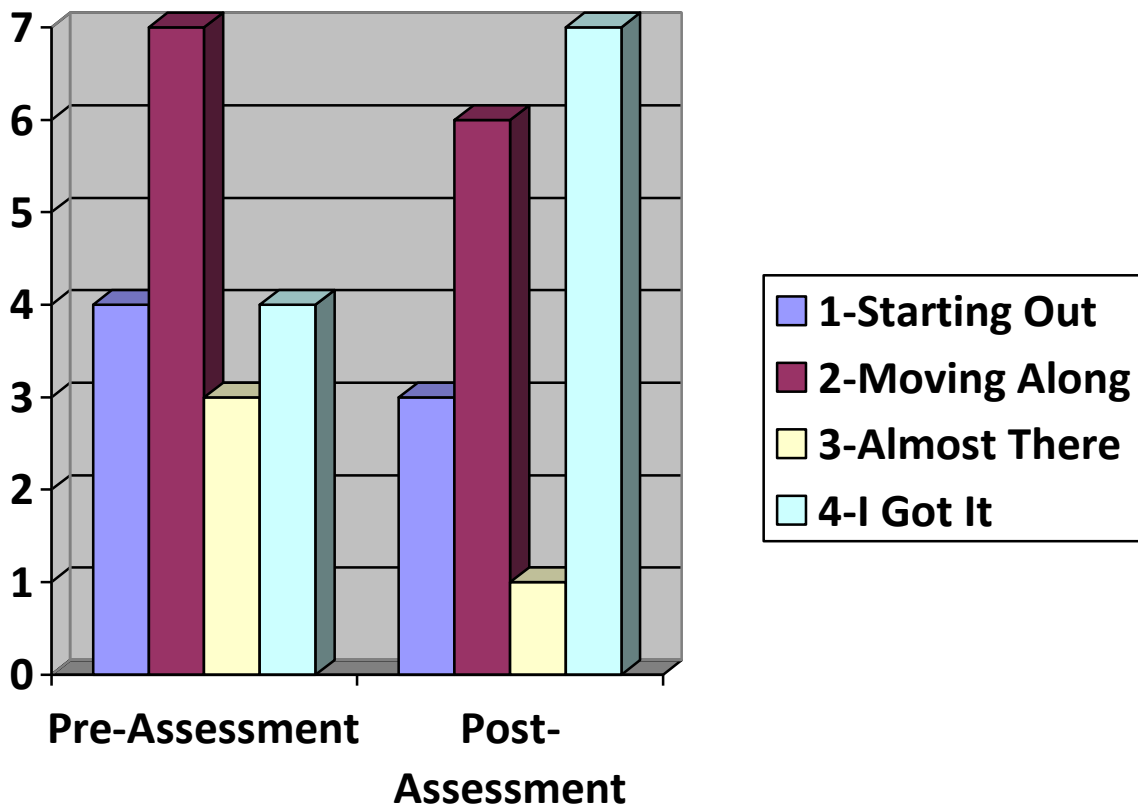
From this information I was able to see that at the time of pre-assessment only 4 students were in the 4 section of "I Got It" on the rubric. By the post-assessment that number had increased to 8. Additionally, from the chart I can tell that the number of student in the lower brackets of the rubric (1 and 2) was at 11 at the time of pre-assessment and that number decreased to 9 by the time of post-assessment. This shows that students were able to make progress on this learning goal.

LEARNING GOAL 1.6 G

|	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

This chart shows that student were able to make movement towards the top half of the rubric however this chart differs from the previous two in a few ways. First, with this learning goal, more students start higher in the rubric at the pre-assessment than in the other learning goals. In other words, more students began this learning goal at a more proficient place than the other two goals. Second, this goal had the fewest number of student move from the lower two brackets to the upper two brackets. The lower two brackets (1 and 2) began at the pre-assessment with 9 students and ended with 6 students. The upper brackets saw a similar increase of a starting number of 9 students and an ending number 11 students.

PRE-ASSESSMENT OF WHOLE CLASS
WITH ALL LEARNING GOALS
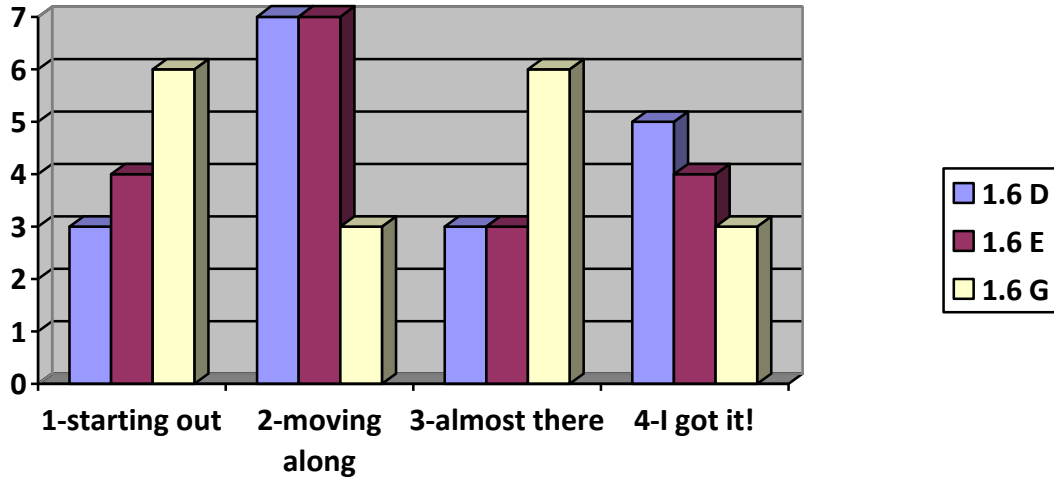
POST-ASSESSMENT OF WHOLE CLASS
WITH ALL LEARNING GOALS
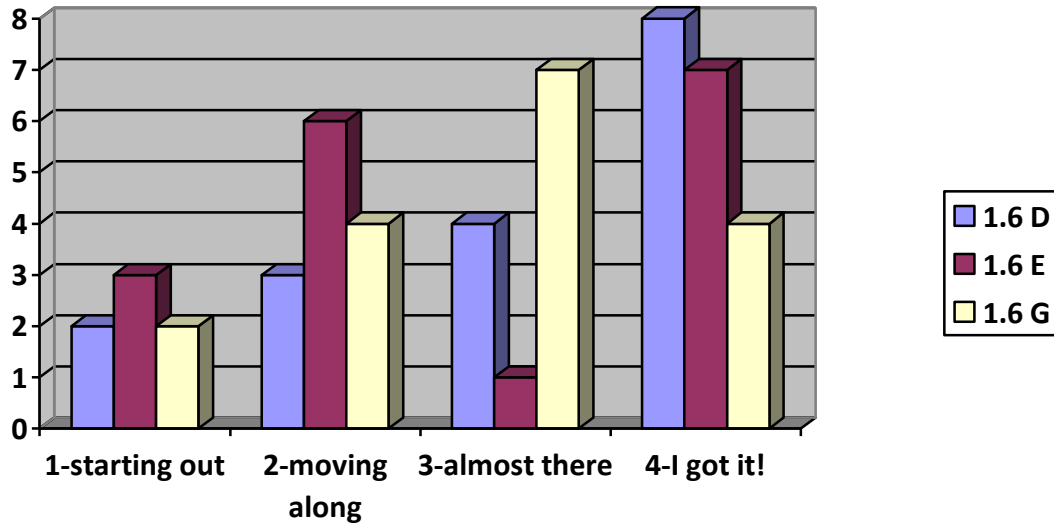
These charts show that all learning goals had an increase in students that were able to reach the final section (4-I got it!) of the rubric. Conversely, there was a decrease in the first bracket of the rubric (1-starting out) for all learning goals.

SUB GROUP ANALYSIS

LEARNING GOAL 1.6 G

|	1	2	3	4
	Starting Out	Moving Along	Almost There	I got it!
I can explain how I solved a problem using my words and a number sentence.	I am not sure how to explain my thinking on story problems.	I can explain my thinking using my words.	I can explain my thinking using a number sentence.	I can explain my thinking on story problems using my words and a number sentence.

PRE-ASSESSMENT
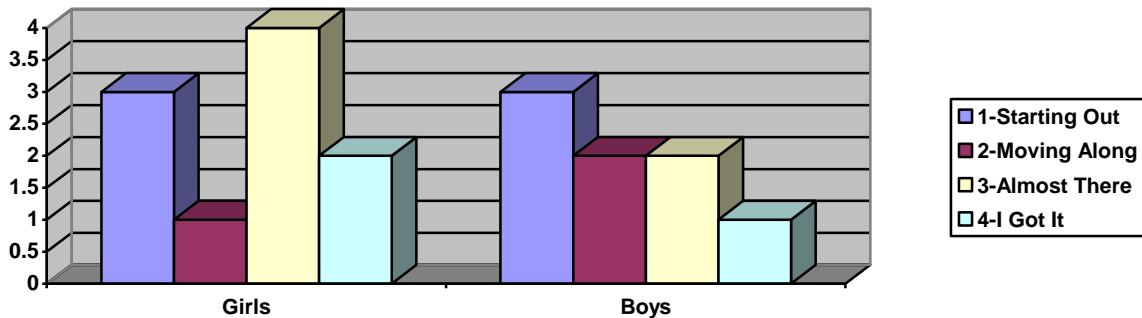
POST-ASSESSMENT
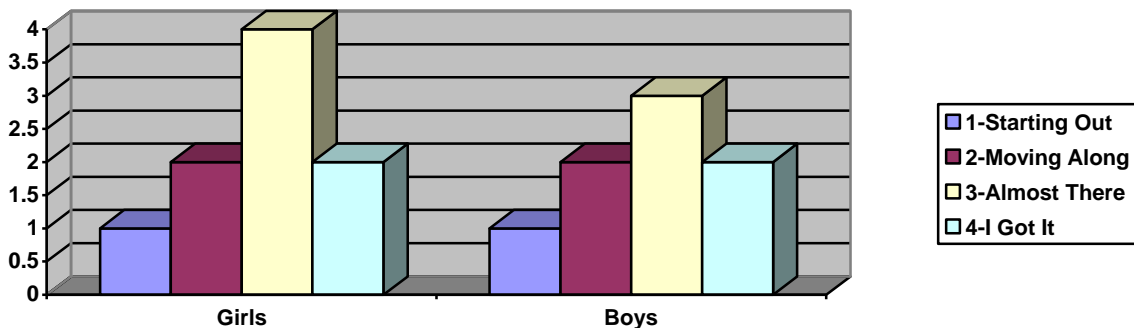
I chose to analyze the students based in learning goal 1.6 G and gender. I selected this subgroup to see if there was any difference in the progress of male and female students. From these charts I can see that fewer girls progressed to the last category of the rubric (4). In fact, no additional girls moved into this group or the group below (3). For the boys, there was an increase in both categories (3 and 4) on the rubric. This is an interesting development. The girls still showed movement from the lowest bracket to the to the second bracket so it's not that there was zero movement. It was just in the lower categories.

INDIVIDUAL ANALYSIS

PRE-ASSESSMENT
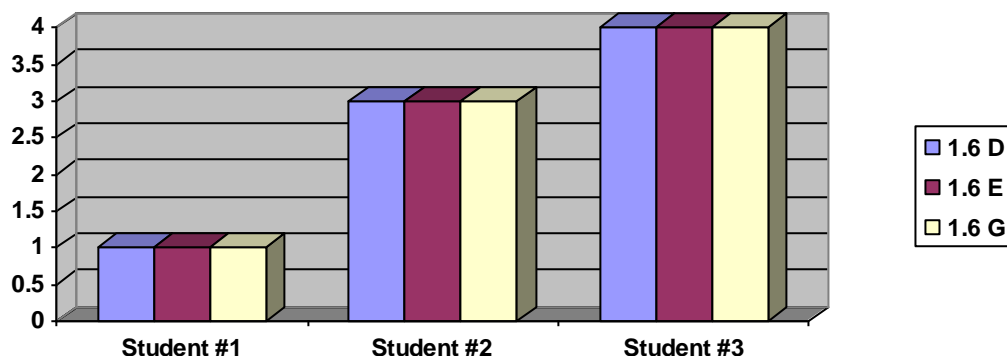
PRE-ASSESSMENT
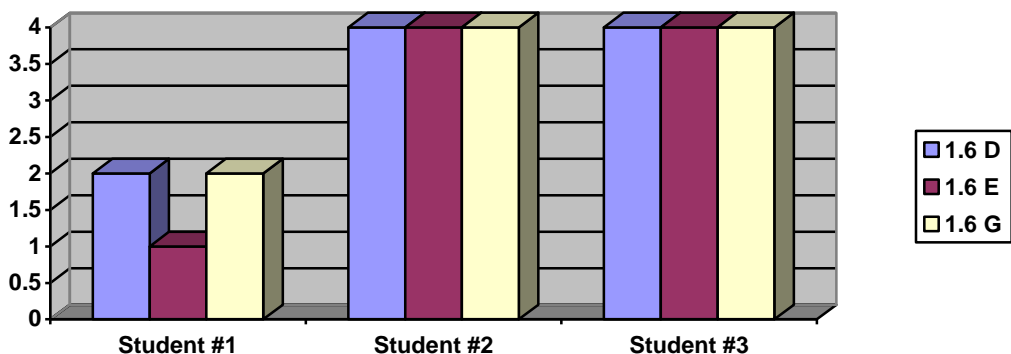
       These students represent low, mid, and high levels student placements on the rubric. The students were all able to make movement on the rubric with the exception of student #3. I choose to include these students work for several reasons. These students made progress that is represented on the rubric however their progress is made even more visible by examining the samples of the students work.

       Student #1 refused to even complete the initial problem in the pre-assessment. When looking at his work throughout the unit and his final unit, it is apparent the student began to make attempts at solving the problem. Though his final assessment did not produce an accurate answer, his efforts are significantly higher and more sophisticated than in his original assessment.

       Student #2 also seemed to make minimal progress but when comparing her answers (particularly around learning goal 1.6 G), her answers are much more in depth on the post-assessment than on the pre-assessment. Over the course of unit, as shown in her sample work, she was able to increase her ability to express in written form her thinking.

       Student #3 in regard to the rubric made no movement but like student #2, when her answers are examined, her increased ability to express her thinking is noted. In her final assessment, she is very clear to detail each step of her though process. This movement can also be noted in her work throughout the unit.
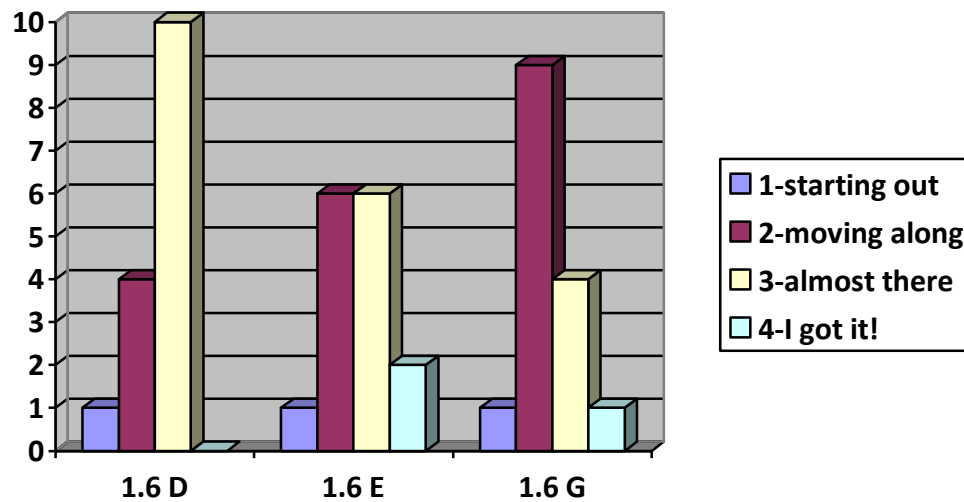
LESSON #1

PRE-ASSESSMENT

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G
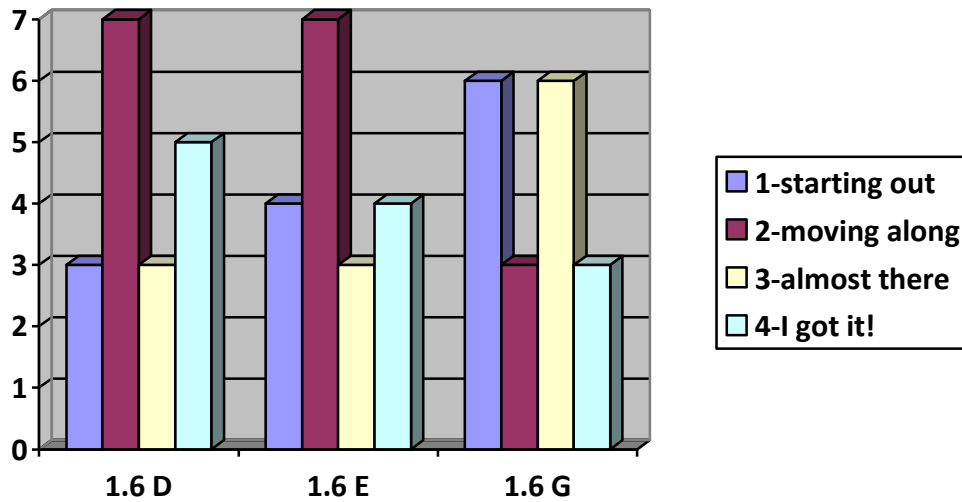
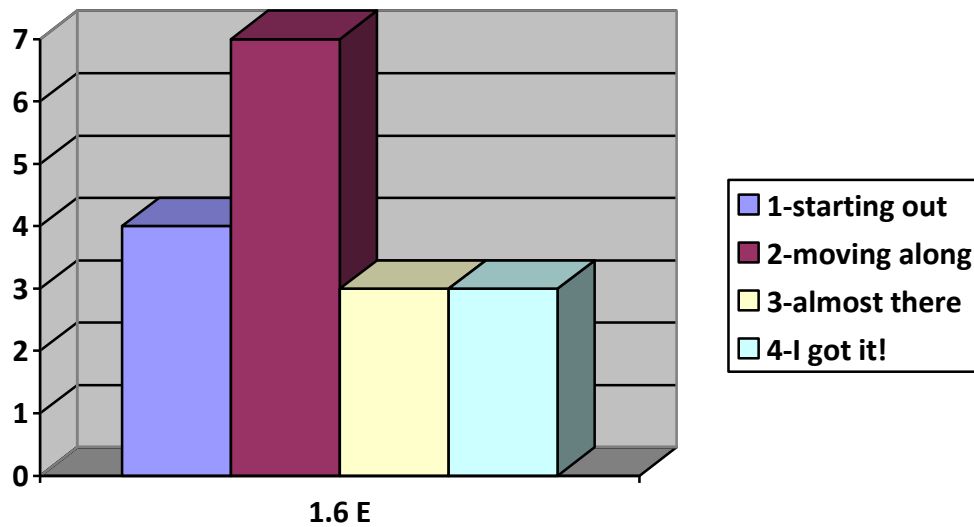# LESSON #2

HOW TO READ STORY PROBLEMS
(SHEEP)

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G

Legend:
- 1-starting out
- 2-moving along
- 3-almost there
- 4-I got it!

LESSON #3

FINDING THE RIGHT ANSWER
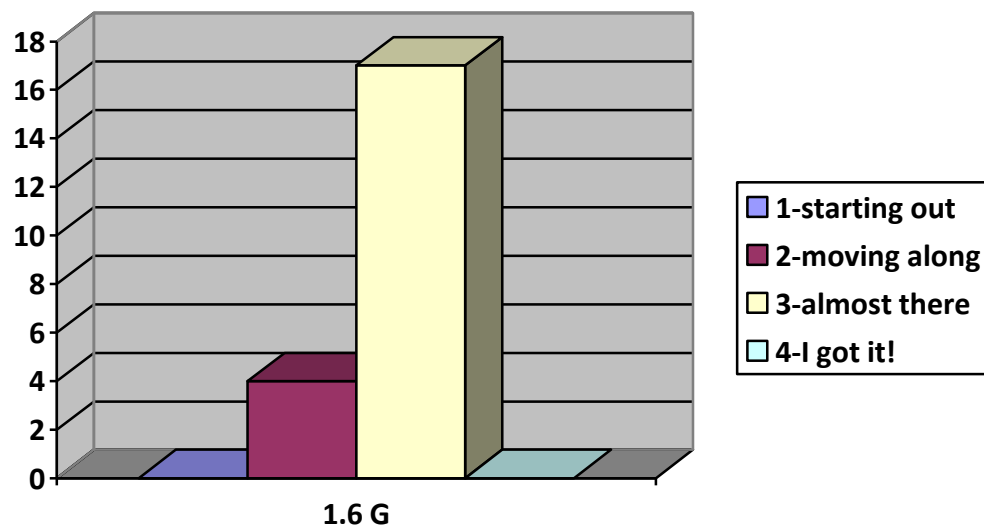(BEAN BAGS)

LEARNING GOAL 1.6 E

LESSON #4

WHO'S IN THE BARN

LEARNING GOAL 1.6 G

MID SELF-EVALUATION

STUDENTS PLACE THEMSELVES ON RUBRIC

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G

Legend:
- 1-starting out
- 2-moving along
- 3-almost there
- 4-I got it!

PISL QUESTIONS

MID INTERVIEW

LESSON #5

PUTTING IT ALL TOGETHER
(ROCKS)

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G

Legend:
- 1-starting out
- 2-moving along
- 3-almost there
- 4-I got it!

LESSON #6

EQUALITY PRE-TEST

LEARNING GOAL 1.6 G

Legend:
- 1-starting out
- 2-moving along
- 3-almost there
- 4-I got it!

X-axis: 1.6 E
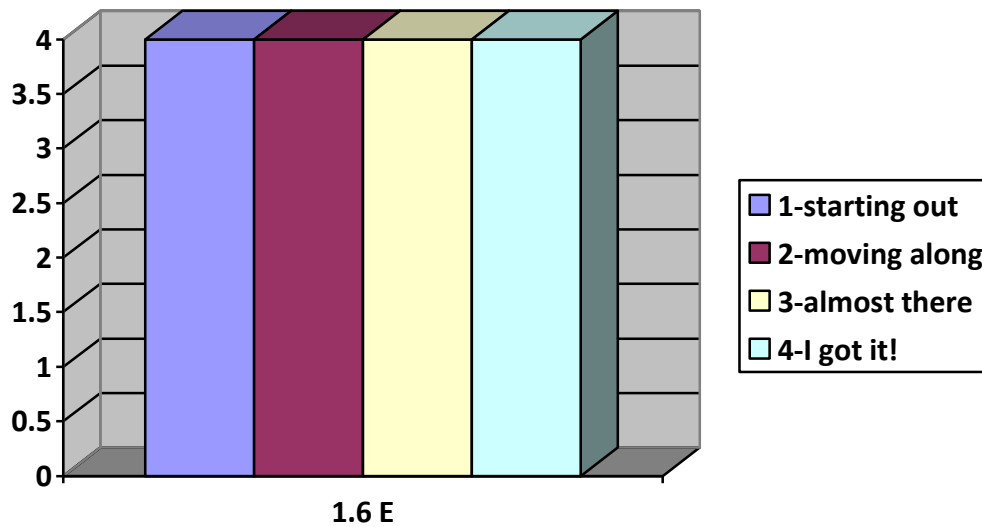
LESSON #7

USING MY WORDS

LEARNING GOAL 1.6 G

LESSON #8

POST-ASSESSMENT

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G

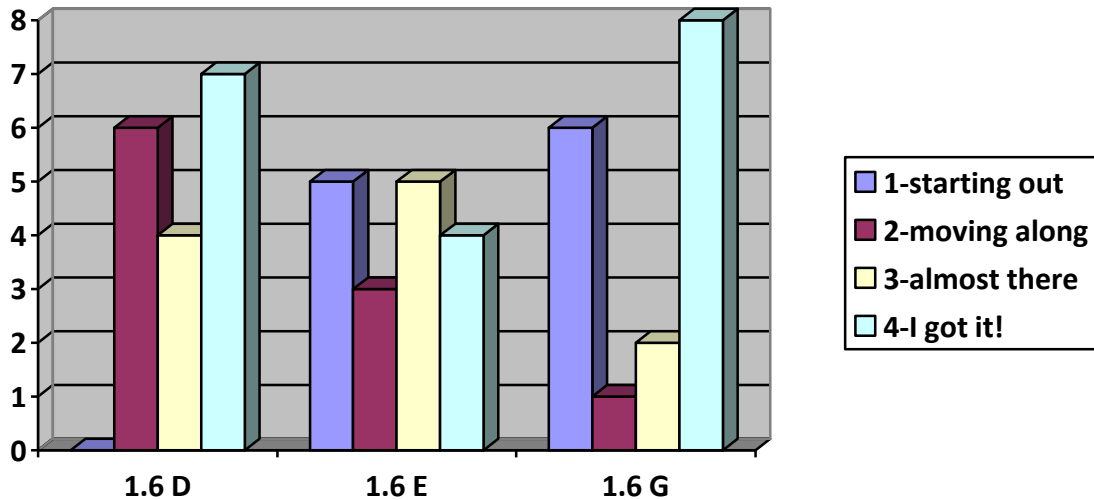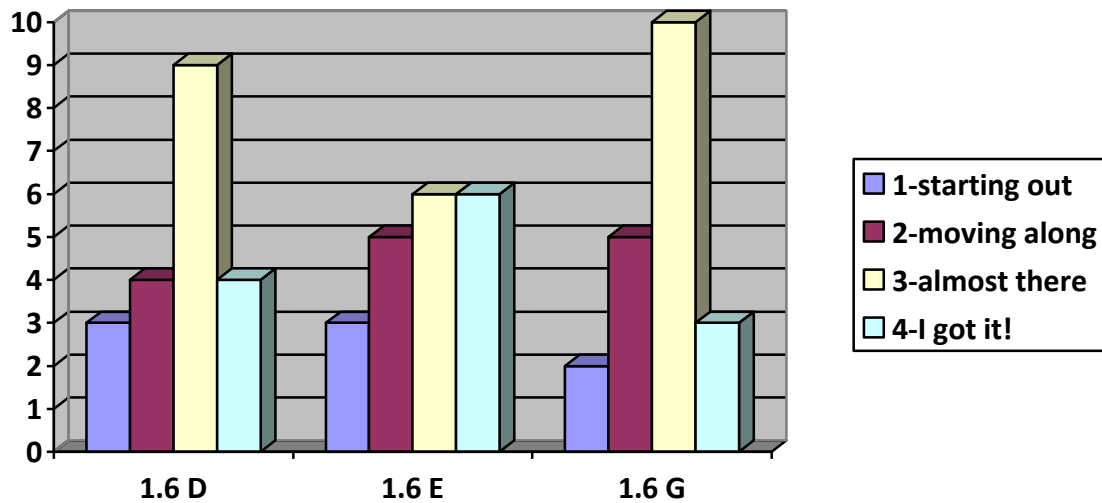- □ 1-starting out
- ■ 2-moving along
- □ 3-almost there
- □ 4-I got it!
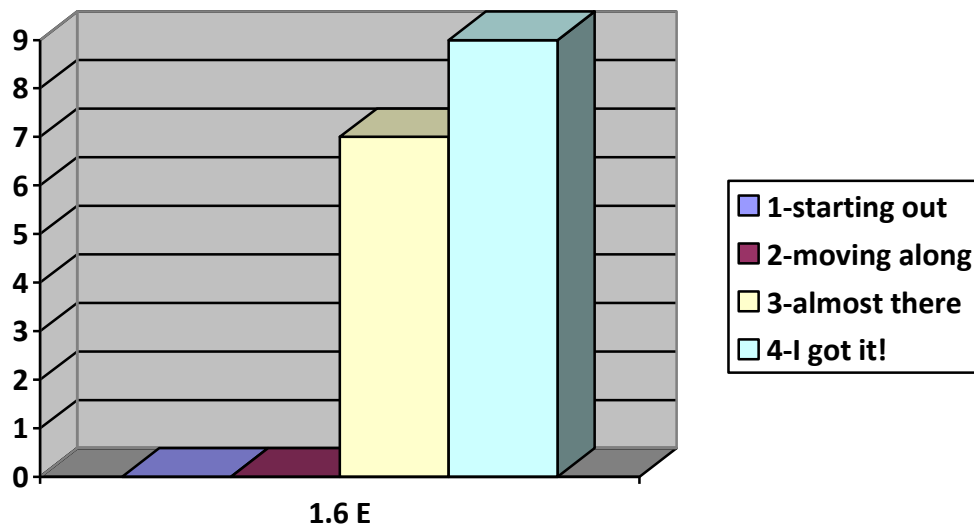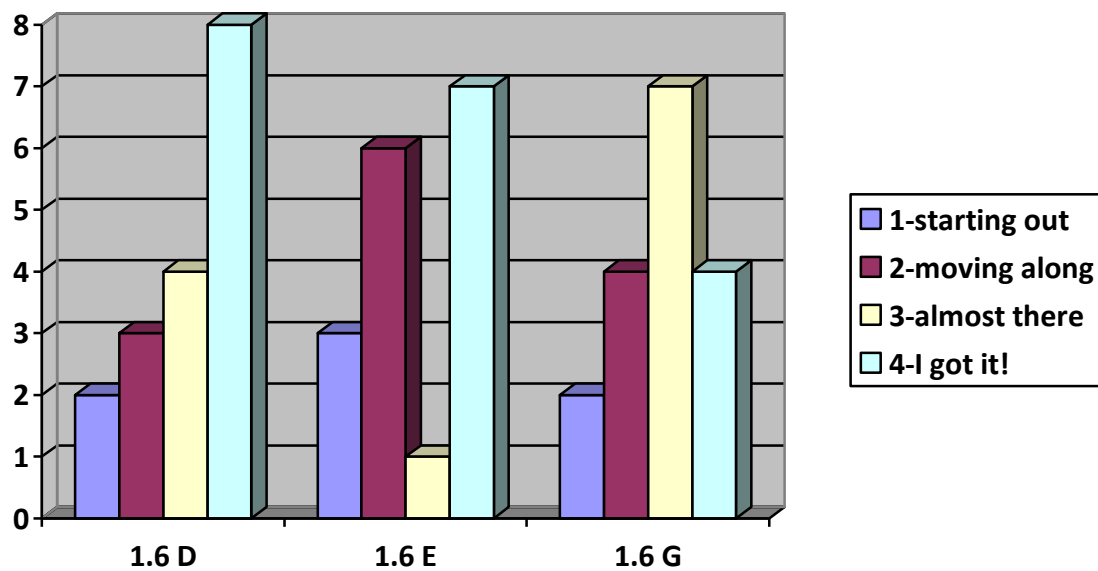
FINAL SELF-EVALUATION

STUDENTS PLACE THEMSELVES ON RUBRIC

LEARNING GOAL 1.6 D, 1.6 E, 1.6 G
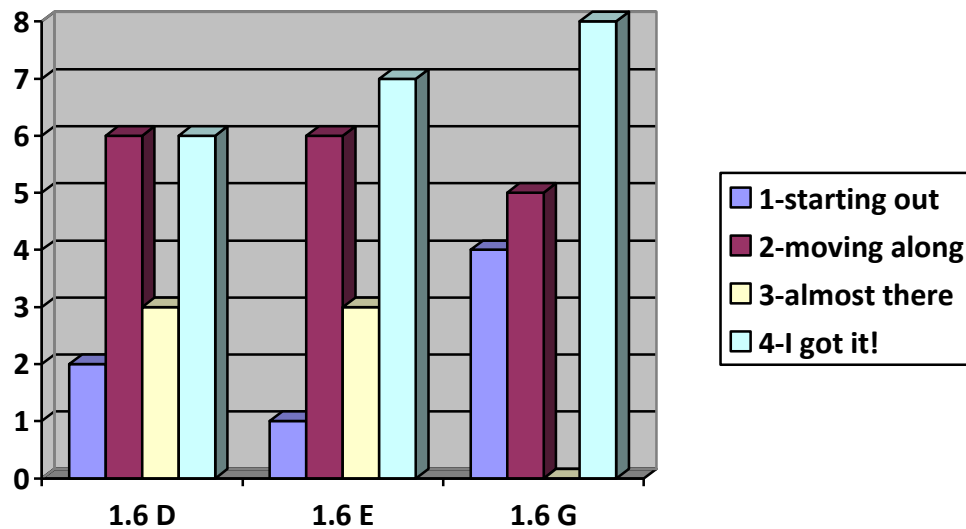
PISL QUESTIONS

FINAL INTERVIEW

SECTION 7: REFLECTION AND SELF-EVALUATION

MOST SUCCESSFUL

The students seemed to have the most success around goal 1.6 D (I can use my math strategies to solve a problem). I believe that this may be due to the fact that the student were in some ways already doing this task but had not been asked to express or put names to the strategies they were using. In other words, they didn't necessarily learn a new skill, just how to name it. I do believe that some students may have gained additional strategies through the conversations in which peers expressed their thinking. I believe this due to the prevalence of students remarks that included, "I didn't think about it like that before" and other similar comments. I also think that another factor at work is that students have begun to have a lot of movement forward in their reading skills. With this development, I would think it would only enhance their ability to excel in story problems.

LEAST SUCCESSFUL

For the least successful, I could choose learning goal 1.6 G (I can explain how I solved problem using my words and a number sentence. I think there are several reason for this fact. First, asking students to write their thinking seems to be a big challenge for students at this age. Students are much more successful at explaining verbally but in terms of testing and benchmarks, students need to have the writing skills to express their thinking as well. I also think that this goal was difficult because it involves number sentence/equation and though many students can make an equation, if they aren't extrapolating correctly what the problem is asking, their equation is generally incorrect. I also think that students simply did not have enough time or practice to fully improve this skill and move further along on the rubric. Also, if the rubric had been extended further, I believe some students could have moved along further. I am just ensure what that category would be described as.

REFLECTION/POSSIBILITIES FOR PROFESSIONAL DEVELOPMENT

Based on my EALR project, I see several opportunities for professional development. First, I see a need to find ways to bring technology to students in which the technology is not present in the schools. I would imagine that this professional development opportunity could go several ways. First, a workshop about how to get creative with bringing technology into low income schools. The other would be how to write grants to try and get donations and alternate means of getting technology into the hands of students.

My second goal would be how to incorporate busy and single parents who have extreme time constraints on them. I don't want to put more pressure on families who don't have a lot of time to spare but I also recognize that they need more opportunities to get involved with their students. Professional growth around this area could be a workshop or research on how to get busy parents involved in their students work. Another possibility is to work with the schools to create workshops for parents to attend that provide child care and possibly food (from donations) so they could get skills to work with their students at home in math and reading. Or possibly getting grants to get books to send home with kids so they would have more opportunities to read with students.

For future projects such as this, I see that there are several places for improvements, I believe that all students would benefit from work with the PISL questions. I focused on the small group of five for

this task but I believe all students would benefit from it. Also, I think giving the students to set their own goals for the unit would have been a powerful way of involving them in their learning. On a smaller more technical note, I would use more of my own story problems that have the students in them. In this case, I was trying to follow the wishes of my mentor teacher and what the student were used to. I think it would be more powerful learning if I would have done this. Finally, I would increase the rubric particularly around learning goal 1.6 G. so that students who were already high on these tasks would have more room to move forward.

SECTION 8: RUBRIC WITH COMPLETED SELF-ASSESSMENT

Katy Bryan

MIT 2009

SPRING STUDENT TEACHING

1. Contextual Factors Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Knowledge of Cultures, Community, School & Classroom Factors MiT 1b PPA 2 c& f	Teacher displays minimal, irrelevant, or biased knowledge of the characteristics of the community, cultural groups, school, and classroom.	Teacher displays some knowledge of the characteristics of the community, cultural groups, school, and classroom that may affect learning.	Teacher displays a comprehensive understanding of characteristics of the community, cultural groups, school, and classroom that may affect learning.	**Pages 4 - 11**
Knowledge of Characteristics of Students MiT 1b PPA 2a & b	Teacher displays minimal, stereotypical, or irrelevant knowledge of differences (e.g. development, interests, culture, abilities/disabilities).	Teacher displays general knowledge of differences (e.g., development, interests, culture, abilities/disabilities) that affect learning.	Teacher displays general and specific understanding of differences (e.g., development, interests, culture, abilities/disabilities) that affect learning.	**Pages 9 - 11**

Knowledge of Students' Varied Approaches to Learning **MiT 1b** **PPA 2d**	Teacher displays minimal, irrelevant or stereotypical, knowledge about different approaches to learning such as learning styles, modalities, different "intelligences" and disabilities	Teacher displays general knowledge about knowledge about different approaches to learning such as learning styles, modalities, different "intelligences" and disabilities	Teacher displays general and specific understanding of different approaches to learning - learning styles, modalities, different "intelligences" and disabilities	**Pages 6 - 7**
Knowledge of Students' Skills and Prior Learning **MiT 1b** **PPA 2e**	Teacher displays little or irrelevant knowledge of students' skills and prior learning and does not indicate such knowledge is valuable.	Teacher displays general knowledge of students' skills and prior learning that may affect learning but only for the class as a whole.	Teacher displays general and specific understanding of students' skills and prior learning that may affect learning.	**Pages 9 - 12**
Implications for Instructional Planning and Assessment	Teacher does not provide implications for instruction & assessment based on individual differences and community, school, and classroom characteristics OR offers inappropriate implications.	Teacher provides general implications for instruction& assessment based on individual differences and community, school, and classroom characteristics.	Teacher provides specific implications for instruction & assessment based on individual differences and community, school, and classroom characteristics.	**Pages 11 - 12**

2. Learning Goals Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Significance, Challenge, and Variety MiT 1c PPA 1b	Goals reflect only one type or level of learning and one discipline or strand.	Goals reflect several types or levels of learning but lack significance or challenge and/or make no effort at coordination or integration.	Goals reflect several types or levels of learning and are significant and challenging. They offer opportunities for integration of more than one discipline or strand.	**Pages 13 - 14**
Clarity MiT 1c	Key concepts and goals are not stated clearly or are activities rather than learning outcomes. Goals do not permit viable methods of assessment.	Some goals and key concepts clearly stated as learning outcomes OR are moderately clear. May contain a combination of goals and activities. Some do not permit viable assessment.	Most of the goals and key concepts are clearly stated as learning outcomes and most permit viable methods of assessment.	**Pages 13 - 15**
Appropriateness For Students MiT 1c PPA 1c	Goals are not appropriate for the development, prerequisite knowledge, skills, experiences; or other student needs.	Some goals are appropriate for the development, prerequisite knowledge, skills, experiences; and other student needs.	Most goals are appropriate for the development; prerequisite knowledge, skills, experiences; and other	**Pages 13 - 14**

			student needs.	
Alignment with State, National, or Local Standards **MiT 1c** **PPA 1a**	Goals are not aligned with national, state or local standards. Not reflective of school district's application of EALRs.	Some goals are aligned with national, state or local standards and meet school district's application of EALRS.	Most of the goals are explicitly aligned with state, national, or local standards and are appropriate for meeting school district's application of EALRS.	**Pages 13 - 14**

3. Assessment Plan Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Alignment with Learning Goals and **Instruction** **MiT 1f** **PPA 4 & 10a**	Content and methods of assessment lack congruence with learning goals and concepts or lack cognitive complexity.	Some of the learning goals are assessed through the plan, but many are not congruent with learning goals in content and cognitive complexity.	Each of the learning goals is assessed through the plan; assessments are congruent with the learning goals in content and cognitive complexity.	**Pages 17 - 18**
Clarity of Criteria and **Standards for Performance** **MiT 1f** **PPA 4a & 10d**	The assessments contain no clear criteria for measuring student performance relative to the learning goals.	Assessment criteria have been developed, but they are not clear, are not explicitly linked to the learning goals, or have not been clearly communicated to students.	Assessment criteria are clear, are explicitly linked to the learning goals, and have been clearly communicated to students.	**Pages 15, 17, 18**
Multiple Modes and **Approaches** **PPA 4c & 10b**	The assessment plan includes only one assessment mode and does not assess students before, during, and after instruction.	The assessment plan includes multiple modes but all are either pencil/paper based (i.e. they are not performance assessments) and/or do not require the integration of knowledge, skills and reasoning	The assessment plan includes multiple assessment modes (including performance assessments, lab reports, research projects, etc.) and assesses student performance throughout the	**Pages 15, 17, 18**

		ability.	instructional sequence.	
Technical Soundness **PPA 4b**	Assessments are not valid; scoring procedures are absent or inaccurate; items or prompts are poorly written; directions and procedures are confusing to students.	Assessments appear to have some validity. Some scoring procedures are explained; some items or prompts are clearly written; some directions and procedures are clear to students.	Assessments appear to be valid; scoring procedures are explained; most items or prompts are clearly written; directions and procedures are clear to students.	**Pages 15, 17, 18**
Adaptations Based on the Individual Needs of Students **MiT 1f** **PPA 4d**	Teacher does not adapt assessments to meet the individual needs of students or these assessments are inappropriate.	Teacher makes adaptations to assessments that are appropriate to meet the individual needs of some students.	Teacher makes adaptations to assessments that are appropriate to meet the individual needs of most students.	**Pages 17, 39**

4. Design for Instruction Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Alignment with **Learning Goals** **MiT 3c** **PPA 5a**	Few lessons are explicitly linked to learning goals. Few learning activities, assignments and resources are aligned with learning goals. Not all learning goals are covered in design.	Most lessons are explicitly linked to learning goals. Most learning activities, assignments and resources are aligned with learning goals. Most learning goals are covered in design.	All lessons are explicitly linked to learning goals. All learning activities, assignments and resources are aligned with learning goals. All learning goals are covered in design.	**Pages 17 - 19**
Accurate **Representation of** **Content** **MiT 3c** **PPA 6c & d**	Teacher's use of content contains inaccuracies. Content viewed more as isolated skills and facts rather than as part of a larger conceptual structure.	Teacher's use of content appears to be mostly accurate. Shows some awareness of the concepts or structure of the discipline.	Teacher's use of content appears to be accurate. Focus of the content is congruent with the concepts or structure of the discipline.	**Page 17 - 19**
Lesson and Unit Structure **MiT 3c** **PPA 5b**	The lessons within the unit are not logically organized (e.g., sequenced).	The lessons within the unit have some logical organization and appear to be somewhat useful in moving students toward achieving the learning goals.	All lessons within the unit are logically organized and appear to be useful in moving students toward achieving the learning goals.	**Pages 17 - 19**

Variety of Instruction, Activities, Assignments and Resources **MiT 3c** **PPA 5e, h, 8c**	Little variety of instruction, activities, assignments, and resources. Heavy reliance on textbook or single resource (e.g., work sheets).	Some variety in instruction, activities, assignments, or resources but with limited contribution to learning.	Significant variety across instruction, activities, assignments, and/or resources. Variety clearly contributes to learning.	**Pages 17 - 19**
Contextual Info and Data to Select Appropriate & Relevant Activities, Assignments & Resources **MiT 3c** **PPA 4B**	Instruction has not been designed with reference to contextual factors and pre-assessment data. Activities and assignments do not appear productive and appropriate for each student.	Some instruction has been designed with reference to contextual factors and pre-assessment data. Some activities and assignments appear productive and appropriate for each student.	Most instruction has been designed with reference to contextual factors and pre-assessment data. Most activities and assignments appear productive and appropriate for each student.	**Pages 15, 17 – 19, 39**

Use of Technology MiT 3c PPA 8e	Technology is inappropriately used OR teacher does not use technology, and no (or inappropriate) rationale is provided.	Teacher uses technology but it does not make a significant contribution to teaching and learning OR <mark>teacher provides limited rationale for not using technology.</mark>	Teacher integrates appropriate technology that makes a significant contribution to teaching and learning OR provides a strong rationale for not using technology.	**Page 19**

5. Instructional Decision-Making Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Sound Professional Practice **MiT 4a**	Many instructional decisions are inappropriate and not pedagogically sound.	Instructional decisions are Mostly appropriate, but some decisions not pedagogically sound.	Most instructional decisions are pedagogically sound (i.e., they are likely to lead to student learning).	**Pages 17 - 19**
Modifications Based on Analysis of Student Learning **MiT 4a**	Teacher treats class as "one plan fits all" with no modifications.	Some modifications of the instructional plan are made to address individual student needs, but these are not based on the analysis of pre-assessment data, student learning, best practice, or contextual factors.	Appropriate modifications of the instructional plan are made to address individual student needs. These modifications are informed by the analysis of student learning/performance data, best practice, or contextual factors. Include explanation of why the modifications would improve student progress.	**Pages 17 – 19, 39**
Congruence Between	Modifications in instruction lack congruence with	Modifications in instruction are somewhat	Modifications in instruction are congruent with	**Pages 17 – 19, 39**

Modifications and Learning Goals **MiT 4a**	learning goals.	congruent with learning goals.	<mark>learning goals.</mark>	

6.Analysis of Student Learning Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Clarity and Accuracy of Presentation **MiT 4a** **PPA 10d**	Presentation is not clear and accurate; it does not accurately reflect the data.	Presentation is understandable and contains few errors.	Presentation is easy to understand and contains no errors of representation.	**Pages 2 - 12, 17 - 20**
Alignment with Learning Goals **MiT 4a** **PPA 4a, 10a**	Analysis of student learning is not aligned with learning goals.	Analysis of student learning is partially aligned with learning goals and/or fails to provide a Comprehensive profile of student learning relative to the goals for the whole class, subgroups, and 3 individuals.	Analysis is fully aligned with learning goals and provides a comprehensive profile of student learning for the whole class, subgroups, and 3 individuals.	**Pages 40 - 45**
Interpretation of Data **MiT 4a** **PPA 10d**	Interpretation is inaccurate and conclusions are missing or unsupported by data.	Interpretation is technically accurate, but conclusions are missing or not fully supported by data.	Interpretation is meaningful, and appropriate conclusions are drawn from the data.	**Pages 40 -45**

Evidence of Impact on StudentLearning MiT4a PPA 10g	Analysis of student learning fails to include evidence of impact on student learning in terms of numbers of students who achieved and made progress toward learning goals.	Analysis of student learning Includes incomplete evidence of the impact on student learning in terms of numbers of students who achieved and made progress toward learning goals.	Analysis of student learning includes evidence of the impact on student learning in terms of number of students who achieved and made progress toward each learning goal.	Pages 40 - 45

7. Reflection and Self-Evaluation Rubric

RATING ⇒ INDICATOR ⇓	1 INDICATOR NOT MET	2 PARTIALLY MET	3 INDICATOR MET	EVIDENCE, PAGES
Interpretation of **Student Learning** **MiT 4a**	No evidence or reasons provided to support conclusions drawn in "Analysis of Student Learning" section.	Provides evidence but no (or simplistic, superficial) reasons or hypotheses to support conclusions drawn in "Analysis of Student Learning" section.	Uses evidence to support conclusions drawn in "Analysis of Student Learning" section. Explores multiple hypotheses for why some students did not meet learning goals.	**Pages 40 - 46**
Insights on **Effective** **Instruction and** **Assessment** **MiT4a**	Provides no rationale for why some activities or assessments were more successful than others.	Identifies successful and unsuccessful activities or assessments and superficially explores reasons for their success or lack thereof (no use of theory or research).	Identifies successful and unsuccessful activities and assessments and provides plausible reasons (based on theory or research) for their success or lack thereof.	**Pages 46 - 47**
Alignment Among **Goals, Instruction,** **and**	Does not connect learning goals, instruction, and assessment results in the discussion of	Connects learning goals, instruction, and assessment results in the discussion of student learning and effective	Logically connects learning goals, instruction, and assessment results in the discussion of student learning and effective	**Pages 40 - 47**

Assessment **MiT4a**	student learning and effective instruction and/or the connections are irrelevant or inaccurate.	instruction, but misunderstandings or conceptual gaps are present.	instruction.	
Implications for **Future Teaching** **MiT4a**	Provides no ideas or inappropriate ideas for redesigning learning goals, instruction, and assessment.	Provides ideas for redesigning learning goals, instruction, and assessment but offers no rationale for why these changes would improve student learning.	Provides ideas for redesigning learning goals, instruction, and assessment and explains why these modifications would improve student learning.	**Pages 46 - 47**
Implications for **Professional Development** **MiT4a**	Provides no professional learning goals or goals that are not related to the insights and experiences described in this section.	Presents professional learning goals that are not strongly related to the insights and experiences described in this section and/or provides a vague plan for meeting the goals.	Presents a small number of professional learning goals that clearly emerge from the insights and experiences described in this section. Describes specific steps to meet these goals.	**Pages 46 - 47**