**Renaissance Teacher Work Sample Consortium**

**A Teacher Work Sample Exemplar**

**Submitted by:  Idaho State University**

**Grade Level:  8th**

**Subject:  Math - Geometry**

**Topic:  Shapes, Angles, Quadrilaterals, Triangles, and Symmetry**

Idaho State University
College of Education

# Teacher Work Sample Cover Sheet

Name: _ Student Number: _____

Degree Program: __X_ Elementary _____ Secondary

Components: ___Humanities & Social Science_____

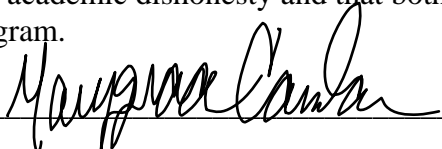(Or) Teaching Major: _____ Teaching Minor: _____

Course: EDUC 309 _X_ EDUC 402 _____

Instructor: _Dr. Newsome_ Date Submitted: ____4/30/09_____

Field Placement (School and District): ___

TWS Grade Level(s): __8_____ TWS Content Area(s): ___Mathematics - Geometry_____

I affirm and testify that all materials included in this teacher work sample were completed by me this current semester and are not identical to my own previous work.
I understand that submission of materials identical to those of another teacher education student will constitute academic dishonesty and that both of us may be dismissed from the teacher education program.

Signature: ___Maurreen Canter___ Date: ____4/25/09_____

As specified in the Assessment Consent section in your course syllabus, if your performance assessments are used to demonstrate program accountability, then your identity will be protected or disguised. Your signature below provides permission to disclose your identity in order to give you credit for your performance.
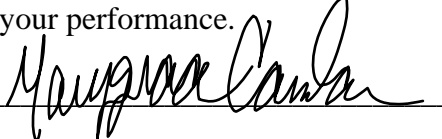
Signature: ___Maurreen Canter___ Date: ____4/25/09_____

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Teacher Work Sample

## A. Description and Analysis of the Learning-Teaching Context

| Demographic Chart Idaho 8<sup>th</sup> Grade Mathematics | | |
|---|---|---|
| Total # of Students: **34** | | |
| | **Males** | **Females** |
| Total # | 15 | 19 |
| With disabilities (IEP or 504) | 2 | ~ |
| English Language Learners (ELL) | ~ | 1 |
| Native American/Alaska Native | ~ | 2 |
| Asian | ~ | 1 |
| Black or African American | ~ | ~ |
| Hispanic | 1 | 2 |
| Native Hawaiian/Pacific Islander | ~ | ~ |
| Caucasian | 13 | 15 |
| Other (Multi-racial/Multi-ethnic) | ~ | ~ |
| Free or Reduced Lunch | School 43% ~ class average is about 15 students | |

### School Community Characteristics

I am working in an eighth grade classroom in a middle school in southern Idaho for the spring, 2009 semester. According to the *School Matters* website created by McGraw-Hill Companies, the percentage of students coming from economically disadvantaged homes is 43.8% for the district and 37.8% for the school (2009). These statistics impact my teaching in that I must understand that over a third of my students may not have the resources or support in their home environment that will enable them to reach their potential in school. I also must remain aware of the fact that some of my students may not have their basic needs met, and therefore they may facemore difficultly participating in the classroom setting. Also, according to bestplaces.net, the Twin Falls School District spends only $4,028 per student, whereas the national average is $6,058 per student (2009). This impacts my teaching in that I will have fewer resources to meet the diverse needs of my students.

I see this reflected in my cooperating teacher's decision to keep classroom sets of textbooks for the students at school, rather than allowing the students to take the required textbooks home. This impacted my teaching in that I had to make sure students had worksheets to use when doing their homework for my lessons or, at the very least, I had to have students write down the problems that were assigned to them. I did find it hard for students to keep track of their homework because it was usually on a piece of paper that was easily lost. I allowed students to turn in late homework with no penalty, as my CT did with her class, but they had to have everything turned in by the day of the final test for the unit.

Finally, I believe that the factors that have the most impact on my teaching in this school are the state and district standards, as well as the federal regulations that have been instituted since the enactment of the No Child Left Behind Act in 2001. Since schools and districts are held accountable in this standards-based system, using the withholding of federal funds as the consequence of not meeting these standards, there is a tremendous push for students to score in the proficiency range on the ISATs (Idaho State Achievement Test). While the school I am working in exceeds the goals in both mathematics and language, they are not meeting AYP (Adequate Yearly Progress) in reading. While reading is not the subject I am working on in my classroom, the impact this has on my teaching is that I must focus on the skills to help my students be successfully on their ISAT test in mathematics, as well as try to incorporate test-taking strategies that will be useful to them in all of their content areas.

**Classroom Characteristics**

The classroom that I am working in is a cinderblock room with one window and individual desks in rows facing the instructional area. This impacts my teaching in that the room can be noisy, as well as being a bit cold, which can lead to discomfort and distraction in my

students. The rows of desks impact my teaching in that the arrangement promotes a traditional lecture format and tends to be an impediment to working in groups, which can become time-consuming to transition into and difficult to monitor in that setting. There are no computers in the room and the computer lab must be requested a number of weeks before it is needed. This is impacts my teaching in that I cannot integrate technology into my lessons as often as I would like.

Yet, for the most part, the students seem engaged in their learning and also seem to understand what is expected of them. The class is very large, with 34 students, and this impacts my teaching in that it is sometimes very difficult to keep all students working on task.There are a number of students, around five or so, that are more disruptive than others, and they can tend to disrupt the class and challenge me as a teacher. This impacts my teaching in that I must remain aware of these particular students while maintaining an awareness of the class as a whole.

**Student Characteristics**

Focusing once again on the ISAT tests brings me to a discussion of the students that I will be working with in my classroom. My students did not have an ISAT test in the fall, as the state of Idaho decided not to test students in the fall testing window. This impacts my teaching in a number of ways. First, I do not have current scores on which I can build lessons, strengthening skill areas that my students tended to score lower on in the fall. Also, I do not have scores for all of the students in my class. I am missing scores for seven out of 34 students. Finally, my students have not had the practice working with the ISAT during the fall, before the spring test is taken, which is the test on which AYP is determined. All of these factors have a large impact on my teaching in that I will not have access to a great deal of relevant data that would enable me to adapt my lessons, reinforcing and/or re-teaching skills that my students may need.

Yet, looking at the scores from spring 2008, only one student scored in the Basic range, while all of the others tested within the Proficient or Advanced ranges. While I do not have scores for all of my students, this impacts my teaching in that I can see that the majority of my students have a good base of prior knowledge on which I can build the new knowledge they need to learn. One of the students that I do not have an ISAT score for is an ELL student from China, whom I will refer to as student A. My cooperating teacher has told me that student A has a fairly good understanding of math concepts yet story problems and directions can be troublesome for her. This impacts my teaching in that I will need to make sure student A understands explanations, directions, and assignments before I expect her to do them independently.I can make use of guided notes with student A, yet the CT informed me that this student is very proud and does not want to use the translation resources that are available to her. This impacts my teaching in that I cannot translate the material into a language that student A could understand better, thus preventing her from coming to a full understanding of the concepts I am teaching.

There are also two students on an IEP in the classroom. One of the students is on an IEP for speech and is doing very well in math, so this had very little impact on my teaching. The second student, whom I will refer to as student B, has difficulty staying on task and can be defiant when anyone tries to help him. Although I knew student B was not on an IEP for mathematics, I never could find out what hewas on an IEP for, as my cooperating teacher did not know and I never got a chance to discuss it with the resource teacher. This impacted my teaching in that I never could figure out how to reach student B, nor find the methods and strategies that would work with him.Student B's inability to finish all of his work impacted my teaching in that I could not fully assess how well he was understanding the material being covered.

**B. Achievement Targets**

**Target One:** *Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry.* (Knowledge)

Target one addresses the curriculum objectives in the course textbook, specifically the objectives for sections 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, and 6.9. This target also addresses the needs of the class by building upon geometric principles that have been previously taught and providing a basis for more developed geometry concepts that the students will face as they continue their education. This target also aligns with Idaho State Standard 4, Concepts and Principles of Geometry, with objectives including: 8.M.4.1.1 (Describe and classify relationships among types of …geometric figures, using their defining properties); 8.M. 4.1.2 (Draw and measure various angles and shapes using appropriate tools);8.M.4.1.3 (Apply fundamental concepts, properties, and relationships among points, lines, rays, planes and angles); 8.M.4.1.5 (Identify congruence, similarities, and line symmetry of shapes); 8.M.4.1.7 (Use appropriate vocabulary and symbols). The target also aligns with my cooperating teacher's long-range instructional goals for the class.

**Target Two:** *Studentswill demonstrate their knowledge of the steps for measuring and drawing angles and constructing and bisecting line segments and angles using the appropriate tools (i.e. compass and protractor).* (Performance)

Target Two addresses the curriculum objectives in the course textbook, specifically the objectives for sections 6.2, 6.3, 6.4, and 6.5. The target also addresses the needs of the class by building upon geometric principles that have been previously taught and providing a basis for more developed geometry concepts that the students will face as they continue their education. This target also aligns with Idaho State Standard 4, Concepts and Principles of Geometry. The objectivesaddressed are 8.M. 4.1.2 (Draw and measure various angles and shapes using appropriate tools) and 8.M.4.1.7 (Use appropriate vocabulary and symbols). The target also

aligns with my cooperating teacher's long-range instructional goals for the class.

**Target Three:** *Students will understand and appreciate how geometry is used in everyday life applications.* (Disposition)

The target addresses the needs of the class in that it gives students a "big-picture" perspective having to do with the concepts of geometry. The target also aligns with my cooperating teacher's long-range instructional goals for the class.

**Target Four:** *Students will analyze and adapt the strategy of identifying patterns during problem solving.* (Reasoning)

Target Five addresses the curriculum objectives in the course textbook, specifically the objectives for section 6.8. The target addresses the needs of the class in that the targeted lesson builds upon problem solving skills previously taught, and is the basis for more developed mathematical concepts and strategies that the students will face as they continue through the middle school and high school mathematics classes.This target aligns with Idaho State Standard 4, Concepts and Principles of Geometry, specifically addressing objective 8.M.4.1.7 (Use appropriate vocabulary and symbols). The target also aligns with my cooperating teacher's long-range instructional goals for the class.

**C. Assessment Plan**

| Achievement Target | Assessments | Rationale | Modifications/ Adaptations |
|---|---|---|---|
| **Achievement Target 1:** *Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry.* (Knowledge) Criteria for Target to be met is 70%. Criteria was determined by the cooperating teacher. | **Pre**: Selected Response (fill-in) **Interim**: Selected Response (fill-in) &Personal Communication **Post**: Selected Response (fill-in) | **All:**As per Stiggins, "This method [selected response] comes into play when your instruction is focusing on standards that center on foundational knowledge and reasoning" (p. 98). **Interim:** As per Stiggins, "Personal Communication is a very flexible means of assessment that we can bring into play literally at a moment's notice" (p. 78). **All:**As per Stiggins, "Use fill-in exercises when you wish to control for guessing" (p. 125). | Student A, a student for whom English is her second language, was given a word bank to use as she was completing her post-assessment. This enabled her to focus on the concepts rather than the language. I monitored student B, who is on an IEP and has difficulty finishing his work, as he was taking the tests, to make sure he finished his work. |
| **Achievement Target 2:** *Students will demonstrate their knowledge of the steps for measuring and drawing angles using the appropriate tools (i.e. compass and protractor).* (performance) Criteria for Target to be met is 70%. Criteria was determined by the cooperating teacher. | **Pre**: Selected Response (fill-in) for one aspect of the skill (that of measuring angles using a protractor) **Interim**: Selected Response (fill-in) and observation of performance skill through activity sheets and rubrics **Post**: Selected Response (fill-in) | **All:**As per Stiggins, "This method [selected response] comes into play when your instruction is focusing on standards that center on foundational knowledge and reasoning" (pg. 98). As per Stiggins, **Interim:**"Observing students in action can be a rich and useful source of information about their attainment of very important forms of skill achievement" (pg. 162). **All:**As per Stiggins, "Use fill-in exercises when you wish to control for guessing" (pg. 125). | I walked student A through the steps for this performance assessment, instead of having her read them as the rest of the class was doing, to make sure that language was not a barrier to her performance of this task. I walked student B through the steps of this worksheet, primarily to keep him on task. |

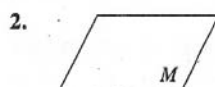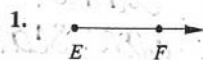| | | | |
|---|---|---|---|
| **Achievement Target 3:** *Students will understand and appreciate how geometry is used in everyday life applications.* (disposition) Criteria for Target to be met is 70%. Criteria was determined by the cooperating teacher. | **Pre**: Selected Response (Likert Scale Checklist) **Interim**: Personal Communication **Post**: Essay | **Pre:**As per Stiggins, "Using these kinds of scales, students can easily reveal their attitudes, interests, school-related values, academic self-concept, and the like" (pg. 234). **Interim:**As per Stiggins, "Direct communication is an excellent path to understanding student feelings about school-related topics" (pg. 236). **Post:**As per Stiggins, "A thoughtful reading of the responses to these kinds of questions [open-ended questions] will reveal similarities or differences in students' opinions and can help you plan future instruction" (pg. 235). | After careful consideration, no modifications were necessary for this assessment. |
| **Achievement Target 4:** *Students will analyze and adapt the strategy of identifying patterns during problem solving. (Reasoning)* Criteria for Target to be met is70%. Criteria was determined by the cooperating teacher. | **Pre**: Selected Response (fill-in) **Interim**: Selected Response (fill-in)& personal communication **Post**: Selected Response (fill-in) | **All:**As per Stiggins, "This method [selected response] comes into play when your instruction is focusing on standards that center on foundational knowledge and reasoning" (pg. 98). **Interim:** As per Stiggins, "Personal Communication is a very flexible means of assessment that we can bring into play literally at a moment's notice" (p. 78). **All:**As per Stiggins, "Use fill-in exercises when you wish to control for guessing" (pg. 125). | This assessment was difficult for Student A, as the questions were primarily word problems. I sat with Student A in the back of the class as the rest of the class was working on this assessment, and helped her understand what was being asked in each question. I monitored student B closely to make sure he worked through the entire test. |

**Pretest: Target 1**

NAME _____KEY_____ DATE _____ SCORE _____

-30    /35

# Test 28
## Test on Chapter 6 (Form A)

**Directions: Write the answers in the spaces provided.**

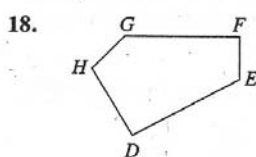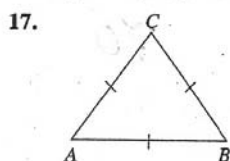| | | Answers |
|---|---|---|
| Write the name of each figure. | 6-1 | |
| 1.  2.  | | 1. $\vec{EF}$ |
| | | 2. plane M |
| Use a protractor to measure each angle. | 6-2 | 3. 140° |
| 3.  4.  | | 4. 20° |
| | | 5. 56° |
| Find the measure of a complement of an angle of the given measure. | 6-3 | 6. 25° |
| 5. 34°  6. 65°  7. 23°  8. 82° | | 7. 67° |
| | | 8. 8° |
| Find the measure of a supplement of an angle of the given measure. | | 9. 124° |
| 9. 56°  10. 80°  11. 101°  12. 158° | | 10. 100° |
| | | 11. 79° |
| In the figure at the right, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$. Find the measure of each angle. | 6-4 | 12. 22° |
| 13. ∠2   14. ∠6 | | 13. 62° |
| 15. ∠5   16. ∠4 | | 14. 62° |
| | | 15. 118° |
| Identify each polygon. Then list all its diagonals. | 6-5 | 16. 118° |
| 17.  18.  | | 17. EQUILATERAL TRIANGLE, NONE |
| | | 18. PENTAGON  $\overline{HF}, \overline{HE}, \overline{GD}, \overline{GF}, \overline{FD}$ |
| | | 19. 44° |
| Find each unknown angle measure. | | 20. 100° |
| 19.  20.  | | |
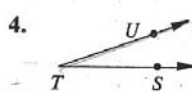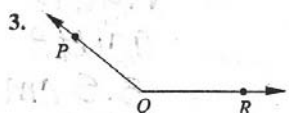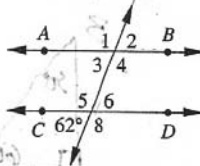
*Continued*

NAME _____ DATE _____ SCORE _____

## Test 28 (Continued)

Tell whether line segments of the given lengths *can* or *cannot* be the sides of a triangle. If they can, tell whether the triangle would be *scalene*, *isosceles*, or *equilateral*.   **6-6**

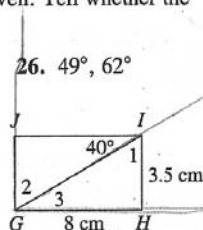21. 10 cm, 8 cm, 5 cm   22. 5 in., 9 in., 16 in.   23. 8 m, 15 m, 17 m

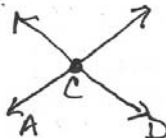The measures of two angles of a triangle are given. Tell whether the triangle is *acute*, *right*, or *obtuse*.

24. 30°, 50°          25. 45°, 90°          26. 49°, 62°

In the figure at the right, *GHIJ* is a rectangle. Find each measure.   **6-7**

27. the length of $\overline{JG}$     28. $m\angle 3$

29. the length of $\overline{JI}$     30. $m\angle 2$

31. Sketch a figure to represent two lines $\overleftrightarrow{AC}$ and $\overleftrightarrow{CD}$ intersecting at point *C*.

32. Sketch a triangle *ABC* with $m\angle A$ twice $m\angle B$. Indicate the measure of each angle in the figure.
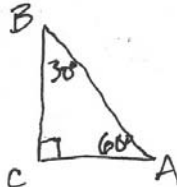
Solve by identifying a pattern.   **6-8**

33. A student started at 1 and counted by 3's to obtain the sequence 1, 4, 7, 10, 13,…. What was the one hundredth number counted?

Draw all the lines of symmetry in each figure. If there are no lines of   **6-9**
symmetry, write *none*.

34.          35.
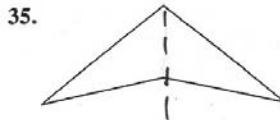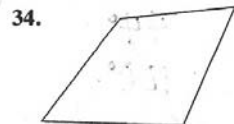
BONUS: The houses on Ocean Front Drive are numbered consecutively from 1 through 150. How many house numbers contain at least one digit 1?

### Answers

21. _can; scalene_
22. _cannot_
23. _can; scalene_
24. _obtuse_
25. _right_
26. _acute_
27. _3.5 cm_
28. _40°_
29. _8 cm_
30. _50°_
31. _see ex._
32. _see ex._
33. _298_
34. _none_
35. _see fig._

**BONUS ANSWER:**

_70_

**Posttest Target 1& 2:**

## Geometry Test A

Name_____Key_____

## OBJECTIVE 1
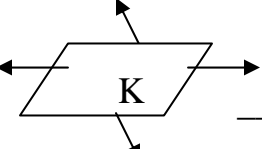
Identify the following geometric figures:

1. $\overleftrightarrow{MN}$ _____line MN_____

2. CD _____ray CD_____

3. R Q S _____Angle QRS_____
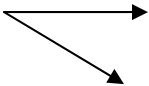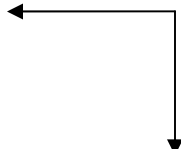
4. A F _____line segment AF_____
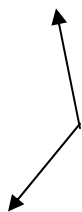
5. K _____plane K_____

## OBJECTIVE 2

Classify each angle as straight, obtuse, acute, or right.

1.     2.     3.     4.

_acute_     _right_     _obtuse_     __straight

OBJECTIVE 3

Using a protractor, measure the following angles:

1.  __112°__
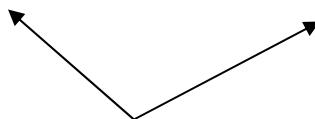
2.  ___45°___
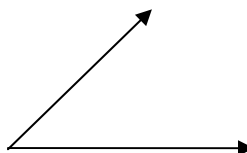
3.  ___155°___
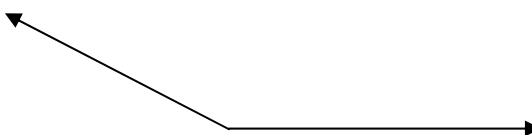
4.  ___40°___
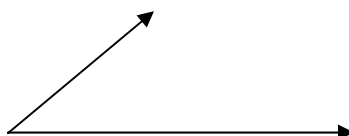
5.  ___90°___
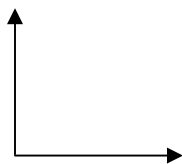
OBJECTIVE 4

Tell whether the line segments of the given lengths can or cannot be the sides of a triangle. If they can tell what kind of triangle it would be.

1. 3km, 1 km, 4 km          ___cannot___

2. 5 in, 10 in, 13 in          ___can; scalene___

3. 6 cm, 4 cm, 4 cm          ___can; isosceles___

4. 1.5 in, 1.5 in, 1.5 in          ___can; equilateral___

5. 24 ft, 13 ft, 5 ft          ___cannot___

OBJECTIVE 5

Finding missing angles of triangles:
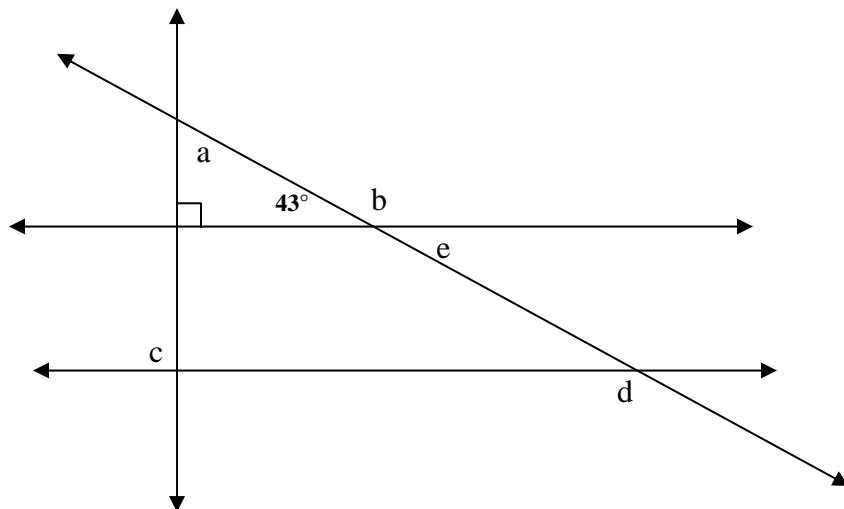


a: __47°__
b: __137°__
c: __90°__
d: __137°__
e: __43°__

OBJECTIVE 6
Classify Polygons.
 Identify the following polygons and list their diagonals.

1.

A ─── B
│     │
D ─── C

2.

E ─── F
G ─── H

3.

J  K  L
M ── N
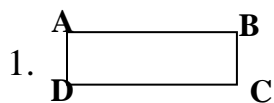
| Name | Diagonals | Name | Diagonals | Name | Diagonals |
|------|-----------|------|-----------|------|-----------|
| Quadrilateral Or rectangle Or tetragon | AC & DB | quadrilateral or trapezoid | EH & GF | pentagon | JL, KM, LM, JN, KN  (5) |
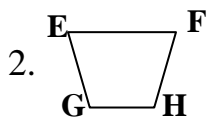
4.

P  Q
U     R
T  S

5.

V      W
C        X
B        Y
A      Z
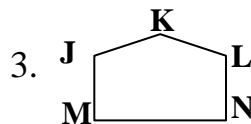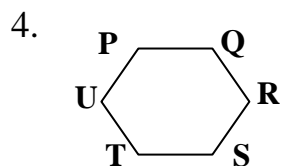
| Name | Diagonals | Name | Diagonals |
|------|-----------|------|-----------|
| Hexagon | PT, PS, PR, QT, QU, QS RU, RT, SU   (9) | octagon | VB, VA, VZ, VY, VX, WC, WB, WA, WZ, WY, XC, XB, XA, XZ, YC, YB, YA, ZC, ZB, AC (20) |
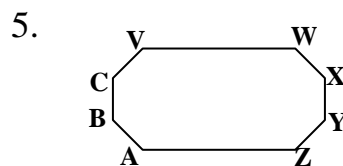
OBJECTIVE 7
Use the formula n-2(180) to find the missing angles of the following polygons

1.    x

x= __90°__

2.    103°    x

x=77°

3.    x
110°    110°

x= __140°__

4.    x

x= 120°

5.    115° 115°
155° 155°
155° 155°
115° X
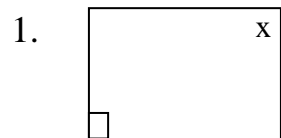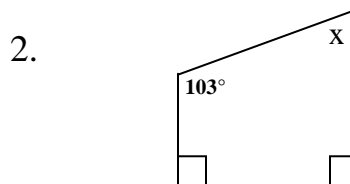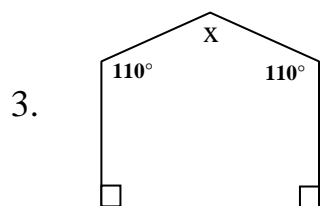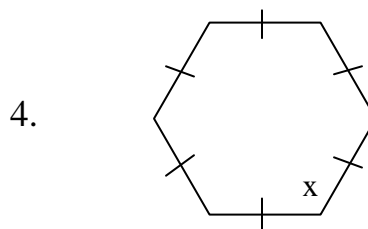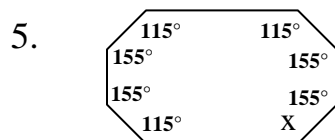
x = __115°__

OBJECTIVE 8
Identify the compliment and supplemental angles.
Find the measure of the compliment of an angle of the given measure.

1.  $15^o$ _____75°_____

2.  $79^o$ _____11°_____

Find the measure of the supplement of an angle of the given measure.

3.  $10^o$ _____170°_____

4.  $65^o$ _____115°_____

5.  Find the missing angle.
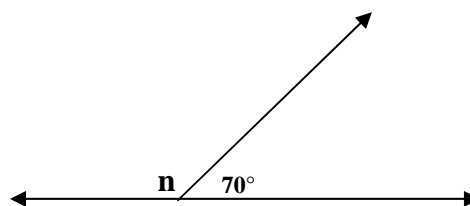


n=_____110°_____

OBJECTIVE 9
Draw the lines of symmetry.

1.
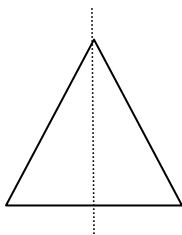


2.
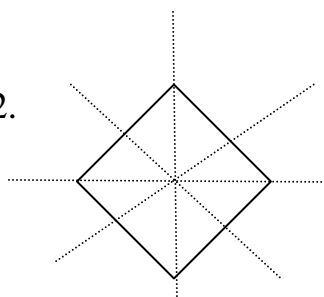


Are these shapes symmetrical? (Write yes or no below the figure.)

3.



4.



5.
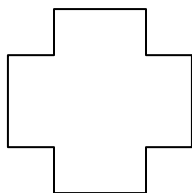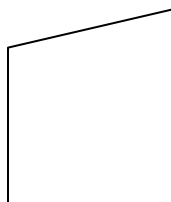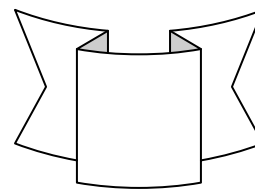


___YES____          _____NO____          ____YES___

**Rubric Target 2:**

## Chapter 6 ~ Introduction to Geometry

# Rubric for Checklist for Measuring Angles

| Activity: Measure an angle using a protractor | | | |
|---|---|---|---|
| Criteria | 1 | 2 | 3 |
| **Terms:** Vertex, origin or center mark, inner scale, outer scale, base line | Student has no understanding of the terms or how to apply them to the activity | Student knows the terms but does not know how they relate to the activity | Student understands the terms and knows how to apply them to the activity |
| **Equipment:** Protractor | Student does not know the parts of the protractor, nor does he/she use the protractor correctly to follow the steps of the activity | Student knows the parts of the protractor but does not use the protractor correctly to follow the steps of the activity | Student knows the parts of the protractor and knows how to use the protractor correctly to follow the steps of the activity |
| **Activity:** Navigation of the steps of the activity | Student cannot follow the steps, nor can he/she complete the activity | Student can follow some of the steps, but cannot complete the activity | Student can successfully follow the steps and complete the activity |

**Pretest & Posttest Target 2:**

Name: _____KEY_____  Date: _____

## Constructing and Bisecting Line Segments and Angles II

OUT OF 13

Activity 1:
Construct a line segment that is the same length as the given line segment:
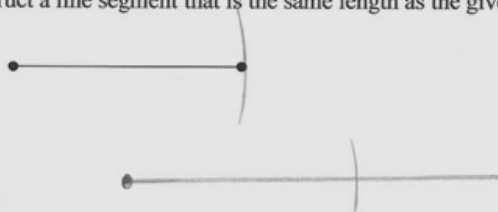
| Activity 1 | |
|---|---|
| Step 1 | |
| Step 2 | |
| Step 3 | |

- linear
- draw ray
- use compass to measure end of line
- draw an arc on line segment

Activity 2:
Construct an angle with the same measure as the given angle:
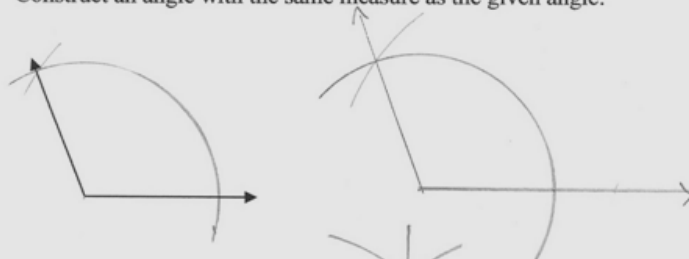
| Activity 2 | |
|---|---|
| Step 1 | |
| Step 2 | |
| Step 3 | |
| Step 4 | |

1. draw ray
2. compass - arc across entire then on ray
3. Put point where arc crosses + draw new arc both ∠s
4. draw 2nd →

Activity 3:
Bisect the line segment:
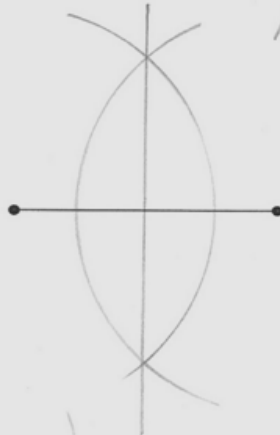
| Activity 3 | |
|---|---|
| Step 1 | |
| Step 2 | |
| Step 3 | |

1. draw 1st arc
2. draw 2nd arc
3. draw line

Activity 4:
Bisect the angle:
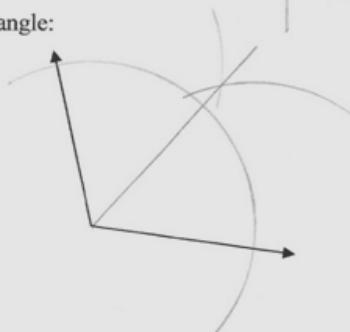
| Activity 4 | |
|---|---|
| Step 1 | |
| Step 2 | |
| Step 3 | |

1. draw arc
2. draw 2 arcs - 1 from each pt.
3. draw line

**Rubric Target 2:**

## Chapter 6 ~ Introduction to Geometry

# Rubrics for Compass Activities

| Activity 1: Constructing a line segment the same length as a given line segment | | | |
|---|---|---|---|
| Criteria | 1 | 2 | 3 |
| **Terms:** Line segment, point, straightedge, compass | Student has no understanding of the terms or how to apply them to the activity | Student knows the terms but does not know how they relate to the activity | Student understands the terms and knows how to apply them to the activity |
| **Equipment:** Compass and straightedge | Student does not know how to use the equipment provided | Student knows how to use one piece of equipment but not the other | Student knows how to use both the straightedge and the compass to navigate the steps in the activity |
| **Activity:** Navigation of the steps of the activity | Student cannot follow the steps, nor can he/she complete the activity | Student can follow some of the steps, but cannot complete the activity | Student can successfully follow the steps and complete the activity |

| Activity 2: Constructing an angle with the same measure as a given angle | | | |
|---|---|---|---|
| Criteria | 1 | 2 | 3 |
| **Terms:** Angle, ray, endpoint, arc, intersection | Student has no understanding of the terms or how to apply them to the activity | Student knows the terms but does not know how they relate them to the activity | Student understands the terms and knows how to apply them to the activity |
| **Equipment:** Compass and straightedge | Student does not know how to use the equipment provided | Student knows how to use one piece of equipment but not the other | Student knows how to use both the straightedge and the compass |
| **Activity:** Navigation of the steps of the activity | Student cannot follow the steps, nor can he/she complete the activity | Student can follow some of the steps, but cannot complete the activity | Student can successfully follow the steps and complete the activity |

| Activity 3: Bisecting a line segment | | | |
|---|---|---|---|
| Criteria | 1 | 2 | 3 |
| **Terms:** Line segment, point, arc, intersect, bisect | Student has no understanding of the terms or how to apply them to the activity | Student knows the terms but does not know how they relate them to the activity | Student understands the terms and knows how to apply them to the activity |
| **Equipment:** Compass and straightedge | Student does not know how to use the equipment provided | Student knows how to use one piece of equipment but not the other | Student knows how to use both the straightedge and the compass |
| **Activity:** Navigation of the steps of the activity | Student cannot follow the steps, nor can he/she complete the activity | Student can follow some of the steps, but cannot complete the activity | Student can successfully follow the steps and complete the activity |

| Activity 4: Bisecting an angle | | | |
|---|---|---|---|
| Criteria | 1 | 2 | 3 |
| **Terms:** Angle, ray, endpoint, arc, intersection, bisect | Student has no understanding of the terms or how to apply them to the activity | Student knows the terms but does not know how they relate them to the activity | Student understands the terms and knows how to apply them to the activity |
| **Equipment:** Compass and straightedge | Student does not know how to use the equipment provided | Student knows how to use one piece of equipment but not the other | Student knows how to use both the straightedge and the compass |
| **Activity:** Navigation of the steps of the activity | Student cannot follow the steps, nor can he/she complete the activity | Student can follow some of the steps, but cannot complete the activity | Student can successfully follow the steps and complete the activity |

**Pretest Target 3:**

Name _____          Date _____

Chapter 6 ~ Introduction to Geometry

## My Math-ittude

Read the following statements and rate them according to how you feel: strongly agree, agree, neither agree or disagree, disagree, or strongly disagree.  Please take time to think about these and answer honestly.  Your responses will not be shared with your peers.  This is to help me understand how I may be able to 'liven up' the way you feel about learning math in this class.

|  | I Strongly agree | I Agree | I neither agree or disagree | I Disagree | I strongly disagree |
|---|---|---|---|---|---|
| I feel math in general is a strong subject for me |  |  |  |  |  |
| I do well if I understand the instruction given in class |  |  |  |  |  |
| I feel comfortable asking for help when I need it |  |  |  |  |  |
| I generally participate with activities in math class |  |  |  |  |  |
| I think math is something that is used in everyday life |  |  |  |  |  |
| I think that math is/can be fun |  |  |  |  |  |
| I generally have positive experiences when it comes to math class |  |  |  |  |  |

**Posttest Target 3:**

I am handing back the survey that you took at the beginning of my teaching. I would like you to look it over. Using a colored pencil, please re-take the survey for me. Then please write about and explain one or two things that have or have not changed. Please tell me why they changed for you. You may also tell me what you would have changed. You can also take this opportunity to tell me anything that you would like to about my teaching or about the unit we did. I am also giving you the rubric which I will use to grade this short essay, so you will know what I am expecting. Thank you for allowing me to teach you. I hope I made some positive changes for you.

**Rubric for Target 3:**

# Math-ittude Essay Rubric

| Indicators | Score | Indicator Not Met<br><br>0 | Indicator Acceptable<br><br>1 | Indicator at Target<br><br>2 |
|---|---|---|---|---|
| Recognizes and **writes** about any or no personal changes in attitude | | No attempt is made to write about experiences and explain any change or lack of change | Small attempt to write about any experiences and explanation of changes | Uses opportunity to reflect and write about experiences and explain any change or lack of change in attitude |
| Gives examples of things, people, or events that made differences | | No attempt is made to give examples of things that made or did not make a difference | One vague example is given as to things that made a difference in attitude | Two or more examples are given, along with detail of how they made a difference in attitude |
| Gives comments and explains reasons and thoughts behind the comments | | No attempt is made to give comments or suggestions as to how instruction, activities, etc. could be changed to make things better and more positive in the future. | One vague comment or suggestion is made, without explanation or reasoning as to how or why it would make things better in the future. | Thoughtful comments or suggestions were made along with explanation and reason as to how and why they would make things better in the future. |

**Pretest Target 4:**

Name: _____KEY_____ Date: _____

Identifying a Pattern:

1. Identify the next figure in the pattern:
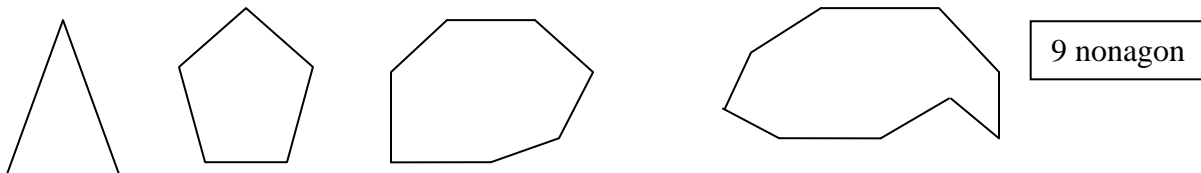


9 nonagon

2. In the figure below, lines have been drawn to show how the numbers in each row are produced by using the numbers in the preceding row. Identify the pattern and use it to complete the last two rows.
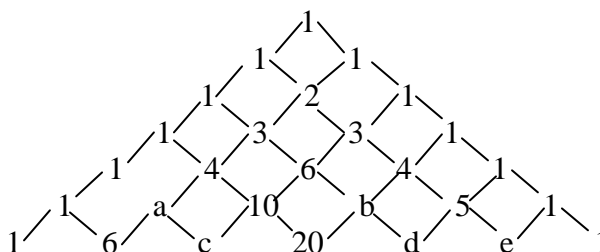


a: _5_  b: _10_  c: _15_  d: __15_  e: __6_

3. Ayo has two nickels, four dimes, and six quarters. How many different amounts of money can Ayo make using these coins? _____48 different amounts_____

4. The figures below show all the diagonals that can be drawn from one vertex of a quadrilateral, pentagon, and a hexagon. How many diagonals can be drawn from one vertex of a decagon?

_7 (because n-3)___
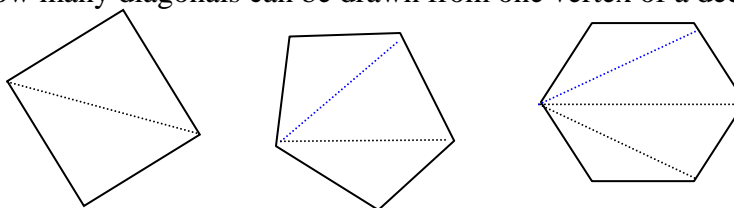


5. Give the next two terms in the pattern:
1, 1, 2, 3, 5, _8_, _13_

6. The athletic director of Central High School arranged for chartered buses to take 347 students to a football game. How many buses were needed if each bus has room for 45 students?
__8 buses_____

7. Tom has four pairs of pants and seven shirts. How many different combinations of pants and shirts does Tom have? _____28 combinations_____

**Posttest Target 4:**

NAME _____ KEY - POSTTEST _____ DATE _____

out of 15

## Practice 76
### Skills and Applications of Lesson 6-8

Solve by identifying a pattern.

1. The figures below show a pattern of stacked boxes. How many boxes are there in the tenth figure in this picture? (55)
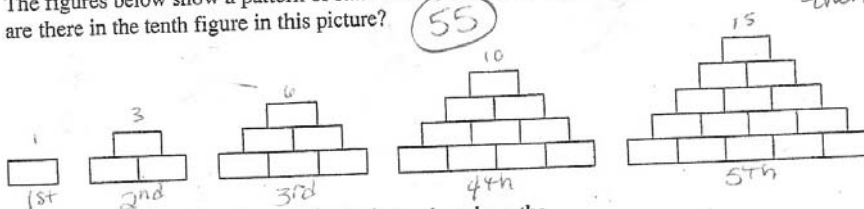
Pattern
10 base
then 9, 8, 7, 6,
5, 4, 3, 2, 1

1st   2nd   3rd   4th   5th

2. In the figure below, lines have been drawn to show how the numbers in each row are produced by using the numbers in the preceding row. Identify the pattern and use it to complete the last two rows.

7pt
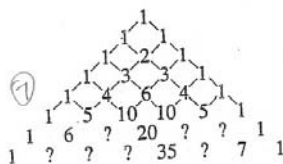
Add the two #s diagonally above:
row 6: 15, 15, 6
row 7: 7, 21, 35, 21

Solve using any problem solving strategy.

3. Calida is five years younger than her brother Arrio. The total of their ages is 35 years. How old is Calida? (15) (brother 20) guess & check

4. Tom has four pairs of jeans and six shirts. How many different combinations of jeans and shirts does Tom have? 6 × 4 = (24) previous knowledge

5. Jerilyn examined the pattern 1, 1, 2, 3, 5, 8, 13. She decided that the next number in the pattern is 21. What are the next three numbers in the pattern? (34, 55, 89) add 2 preceding #s

3pt

6. Ayo has four nickels, six dimes, and two quarters. How many different amounts of money can Ayo make using these coins? (48) previous

7. The athletic supervisor at Central High School arranged for chartered buses to take 537 students to a football game. How many buses were needed if each bus has room for 47 students?

47)537 = 11.43 can't leave some people

(12) buses   (47 ÷ .43 = 20.21)
about 21 people left in last group

**D. Instructional Sequence**

**Results of pre-assessment**

I used a standard end of unit test, which was a fill-in selected response, to assess the prior knowledge of my student with regards to the concepts in target one. None of my students came close to the 70% criteria, the highest score being a 36%. The students were frustrated with the test, so much so that I had to consistently remind them that I did not expect them to know this information, it was what I was going to teach in the upcoming unit. I felt comfortable with target one as stated, being that the concepts were not fully recognized by any of my students.

The next two targets have no quantifiable pre-assessmentdata from which to gather information. Target two is a performance target, so there was no pre-assessment for themajority of the skills described in the target.Target three is a disposition target. I used a Likert scale for the pre-assessment, which gave me interesting, yet non-quantifiable results.

For my final target, target four, I used a fill-in selected response that I created to mirror the questions the students would find on the posttest. My students did considerably better on this test then they did on target one's pretest, yet none of my students quite reached the 70% criteria. I had two students score a 68% and five students score in the high 50% range. I still felt comfortable with the target as stated because the concepts that this target deals with are ongoing concepts that are touched upon in each unit, so the students' understanding of them is important. Also, this target deals with strategies for problem solving, which is a fundamental skill needed for success on the ISAT exams, as well as an integral skill involved in every aspect of math. For these reasons, I felt justified retaining this target as stated.

# Learning Activity Plan #1
## Section 6.2

Name:                                    Estimated Time: 90 minutes

Content Area(s): Mathematics – Geometry            Grade Level(s):  8th grade

Standard(s):**Standard4: Concepts and Principles of Geometry -Goal 4.1: Apply concepts of size, shape, and spatial relationships** - 8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three- dimensional geometric figures, using their defining properties. ; 8.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. 8.M.4.1.3 Apply the fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles.;& 8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry. (Knowledge) | • **Pre:** The pre-assessment was completed before the beginning of the sequence.<br>• **Interim:** Personal Communication & Selected Response<br>• **Post:** The post assessment will be done at the end of the unit. |
| • **Target Two:** Students will demonstrate their knowledge of the steps for measuring and drawing angles and constructing and bisecting line segments and angles using the appropriate tools (i.e. compass and protractor). (Performance) | • **Pre:** There is no pre-assessment for this target.<br>• **Interim:** Personal Communication & Performance<br>• **Post:** The post assessment will be done at the end of the sequence. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. (Disposition) | • **Pre:** The pre-assessment was completed before the beginning of the sequence.<br>• **Interim:** Personal Communication<br>• **Post:** The post assessment will be done at the end of the unit. |

**Special Planning/Preparations (i.e., safety concerns, etc.):** Students will be instructed on the safe use of a compass, which has a very sharp point and has the potential for causing harm.

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Anticipatory Set:** Discussion with students about the use of measuring angles in everyday life. Where does this take place? (Carpentry, architecture, clothing design, etc) Show pictures of results (cathedrals, Greek Parthenon, etc) Discuss the tools that are needed (protractor & compass.) | 3 min | Pictures of structures and products that are created by measuring angles | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Objective:** Students will learn how to measure and draw angles using a protractor.<br>Students will learn how to construct and bisect line segments and angles using a compass and straightedge. | 1 min | | After careful consideration, no adaptations are needed for this portion of the lesson. |

| | | | |
|---|---|---|---|
| **Input & Modeling:** Students will write the new terms of the section in their geometry portfolio. Students will be given protractors and the *Checklist for Measuring Angles* worksheet. I will explain the parts of the protractor and instruct students on the procedure for measuring and drawing angles. | 15 min | *Checklist for Measuring Angles* worksheet Protractors | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Guided Practice:** I will ask the students to pair up with the person to their right and work on the *Measuring Angles* worksheet. I will monitor to make sure students understand the procedure. | 15 min | *Measuring Angles up to 180°* worksheet Protractors | I have paired up the students with the person to their right because Student B, who is on an IEP and has a hard time cooperating with his peers, yet he seems to work relatively well with the student seated to his right. |
| **Input & Modeling:** I will instruct the students on the proper handling of a compass, specifically explaining the safety issues. Students will be given the *Using a Compass* activity sheet and compasses. I will walk through each of the four activities on the sheet, demonstrating the proper procedures. | 15 min | *Using a Compass* activity sheet Compasses | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Guided Practice:** Students will once again pair up and work on the *Constructing and Bisecting Line Segments and Angles* activity sheet with their partner. | 20 min | *Constructing and Bisecting Line Segments and Angles* activity sheet | I have paired up the students with the person to their right because Student B, who is on an IEP and has a hard time cooperating with his peers, yet he seems to work relatively well with the student seated to his right. |
| **Independent Practice:** Students willwork on *Practice 69* worksheet and the*Constructing and Bisecting Line Segments and Angles* II activity sheet independently. Whatever students do not finish in class they will keep with them for free time in the next class, since I cannot be sure that all students have the necessary equipment at home to complete the activity sheets. **Closure:** We will review the objectives and clarify any misconceptions that may have arisen. | 15–20 min 1 min | *Practice 69* worksheet *Constructing and Bisecting Line Segments and Angles II activity sheet* Compasses Protractors | *Constructing and Bisecting Line Segments and Angles* |

**Integration of Technology:** There will be no integration of technology for this lesson.
**Outreach to Families:** I have given a letter of introduction to the students to give to their guardians, introducing myself and explaining my presence in their classroom.
**Reflection:** Students have just come back from break, so they are a bit rambunctious. This lesson was so much harder than I expected it to be! The students didn't know how to read a protractor, and their measurements were off by more degrees than would be expected. There has to be a better way! The compass activity was a nightmare! I thought by the eighth grade students would know how to use a compass, or at least have seen them before. Many had never used a compass, so there were a lot of basic skills to cover that I didn't expect. This was a frustrating lesson.

**Outreach to families:**

March 23, 2009

Dear Parents and Guardians,

I would like to take this opportunity to introduce myself to you. My name is Marygrace Condon and I am currently a student at Idaho State University in the Teacher Education Department. This semester, I am working in your child's 8th grade math class, observing and learning from Mrs. Hoy, and helping in the classroom.

Starting this week, I will be given the opportunity to teach a sequence of lessons to the students in your child's class. I am looking forward to this opportunity and I hope it will be an educational experience for us all. Mrs. Hoy will remain in the classroom and I will also be observed by my professors at ISU for a portion of the time. I will teach the curriculum your student would have learned from Mrs. Hoy.

I appreciate this opportunity. If you have any questions, you can contact Mrs. Hoy or you can contact me by email at condmary@isu.edu or I will be in the school on red days for the 2nd and 3rd hours.


Thank you,

**Learning Activity Plan # 2**
**Section 6.4**

Name:                             Estimated Time:  90 minutes

Content Area(s): Mathematics – Geometry            Grade Level(s):  8th grade

Standard(s):**Standard4: Concepts and Principles of Geometry -Goal 4.1: Apply concepts of size, shape, and spatial relationships** - 8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three- dimensional geometric figures, using their defining properties. ; 8.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. 8.M.4.1.3 Apply the fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles.;& 8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry. (Knowledge) | • **Pre:** The pre-assessment was completed before the beginning of the unit.<br>• **Interim:** Personal Communication & Selected Response<br>• **Post:** The post assessment will be done at the end of the unit. |
| • **Target Two:** Students will demonstrate their knowledge of the steps for measuring and drawing angles and constructing and bisecting line segments and angles using the appropriate tools (i.e. compass and protractor). (Performance) | • **Pre:** There is no pre-assessment for this target.<br>• **Interim:** Personal Communication & Performance<br>• **Post:** The post assessment will be done at the end of the sequence. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. (Disposition) | • **Pre:** The pre-assessment was completed before the beginning of the unit.<br>• **Interim:** Personal Communication<br>• **Post:** The post assessment will be done at the end of the unit. |

**Special Planning/Preparations (i.e., safety concerns, etc.):**

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Anticipatory Set:** Show students the protractors with thread, and review how to work with protractors. Also, show students how all angles are parts of a circle, and how protractors are half of a circle, just used to measure how much of the circle that the angle is occupying. | 10 minutes | | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Objectives:** To identify perpendicular and parallel lines and calculate the measures of the angles formed when a transversal intersects parallel lines. | 2 minute | | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Warm-up:** Students will do the odd exercises 1-13 out of their textbook  to reinforce their learning about complementary and supplementary angles and angle classifications so that they can use this information to move on to the lesson that I will be teaching. | 15 minutes | *Mathematical Connections* text pg. 247 | I will write the definition of complementary and supplementary angles on the board to make sure Student A, who is ELL, understands those terms. |

| | | | |
|---|---|---|---|
| **Input & Modeling:** Students will write the new terms from this section in their geometry portfolio.<br>I will ask students to find me examples of parallel lines (whiteboard borders, door…) and perpendicular lines (ceiling tiles, same as above…) in the room. I will then tell them about those concepts, showing them how to write about them using symbols. I will then draw a few on the board to see if they can be identified.<br>We will then discuss transversals, alternate interior angles, and corresponding angles. I will then show them a transversal going through parallel lines and non-parallel lines and ask if they know what the difference is? What special properties occur when the lines are parallel? I will teach them the special properties. | 20 minutes | Whiteboard and markers | I will be sure to ask for Student A(who is ELL) and B's (who is on an IEP) input when I am discussing the new information. I want to be sure they are participating in the discussion. |
| **Guided Practice:** The students and I will work onthe examples in the book on the board together. Then I will have the students come up and answer 1, 2, 3, 5, 7, 9, 13-18 of the Guided Practice problems on pg. 251 on the board. I will pick the students names out of a hat (that I previously created) so that they are chosen at random. | 15 minutes | *Mathematical Connections* textbook | I will once again remain aware of Student A and B's participation in the discussion. |
| **Independent Practice:** Students will work on thePractice 71 worksheet independently. If they finish early, they may finish up any work from the day before. | 20 minutes | *Practice 71* worksheets | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Extension:** If there is any extra time,I will introduce the students to an enrichment activity that will be ongoing throughout the rest of the unit. They will be creating symmetry disks using construction paper, colored pencils and brads. I will give a very brief explanation of how to complete a disk, showing an example, and there will be instructions in the enrichment area. This is an activity that they may work on when they have finished their work ahead of their peers and I will also give them time at the end of class each period to work on it. | 5 minutes | Construction paper, colored pencils, brads, and a finished disk for an example | I will explicitly explain to Student A that he must show me his completed work before he can go to the enrichment area each day. |
| **Closure:** I will go back to the objective and ask questions of the students to check their understanding of each point. | 3 minutes | | After careful consideration, no adaptations are needed for this portion of the lesson. |

**Integration of Technology:**There will be no integration of technology with this lesson.
**Outreach to Families:** There is no outreach to families for this lesson.
**Reflection:** I initially was going to use digital cameras with the students in the anticipatory set of this lesson, but I decided to re-teach the protractors lesson in a new way. I am so glad I did this. I found a way to use thread with the protractor so the students could be more precise with their measurements, and it helped SO much! There was a sub today and the class was pretty unruly. The sub kept interrupting to shush the kids who were acting up, but in doing so she kind of undermined my authority. I don't think she understood what I was trying to do. It was frustrating. The lesson was so hard for the kids to grasp. They just didn't get all of the ways that angles can be equal, and why. I don't think I explained it well enough either. I kept getting flustered by the behavior. I need to be more firm. I do feel somewhat discouraged today.
I forgot to tell them about vertical angles….I'll tell them next time.

**Learning Activity Plan # 3**
**Section 6.5**

Name:                                Estimated Time:  90 minutes

Content Area(s): Mathematics – Geometry            Grade Level(s):  8<sup>th</sup> grade

Standard(s):__Standard4__: **Concepts and Principles of Geometry -Goal 4.1: Apply concepts of size, shape, and spatial relationships** - 8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three- dimensional geometric figures, using their defining properties. ; 8.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. 8.M.4.1.3 Apply the fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles.;& 8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry. (Knowledge) | • **Pre:** The pre-assessment was completed before the beginning of the unit. <br> • **Interim:** Personal Communication & Selected Response <br> • **Post:** The post assessment will be done at the end of the unit. |
| • **Target Two:** Students will demonstrate their knowledge of the steps for measuring and drawing angles and constructing and bisecting line segments and angles using the appropriate tools (i.e. compass and protractor). (Performance) | • **Pre:** There is no pre-assessment for this target. <br> • **Interim:** Personal Communication & Performance <br> • **Post:** The post assessment will be done at the end of the sequence. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. (Disposition) | • **Pre:** The pre-assessment was completed before the beginning of the unit. <br> • **Interim:** Personal Communication <br> • **Post:** The post assessment will be done at the end of the unit. |

**Special Planning/Preparations (i.e., safety concerns, etc.):**

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Anticipatory Set:** I will hand out paper triangles to the class. I will ask the students to tear off the three angles that form the triangle and lay them side by side on the desk. Compare your results with the results from the students around you, what do they all have in common. (they are straight angles) Make a guess about the sum of the angles of a triangle. Draw and measure a triangle with a protractor to check your conjecture. | 10 minutes | Paper triangles Paper and pencils Protractors | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Objectives:** To identify types of polygons and find the measures of their angles. | 2 minutes | | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Warm-up:** Students will do the Lesson Starter 53 page to review the previous material in the chapter. They will do both the Warm-Up Exercises and the Daily Quiz. | 10 minutes | *Lesson Starter 53* worksheet | After careful consideration, no adaptations are needed for this portion of the lesson. |

| Input & Modeling: Students will write the new terms from this section in their geometry portfolio.<br>I will teach students about vertical angles, which I forgot to mention in the last class.<br>I will introduce polygons to the class, discussing the properties, sides, vertex (vertices), and diagonals. We will then discuss the table on pg. 257 with the names and info about different polygons.<br>I will then refer back to our anticipatory set, where we discovered the sum of the angles of a triangle. I will use this to help students discover the general formula for finding the sum of the angles of any polygon. | 25 minutes | Whiteboard and markers | After careful consideration, no adaptations are needed for this portion of the lesson. |
|---|---|---|---|
| Guided Practice: The students and I will work onthe examples in the book on the board together. Then I will have the students come up and answer the odd exercises from 5-15 of the Guided Practice problems on pg. 259 on the board. I will pick the students names out of a hat (that I previously created) so that they are chosen at random. | 15 minutes | *Mathematical Connections* textbook | I will once again remain aware of Student A (who is ELL) and B's (who is on an IEP) participation in the discussion. |
| Independent Practice: Students will work on thePractice 73 worksheet independently. If they finish early, they may finish up any work from the day before. | 20 minutes | *Practice 73* worksheets | After careful consideration, no adaptations are needed for this portion of the lesson. |
| Closure: I will go back to the objective and ask questions of the students to check their understanding of each point. | 3 minutes | | After careful consideration, no adaptations are needed for this portion of the lesson. |
| Extension: Students may continue working on their symmetry disks, or I will continue my explanation from the previous day, if necessary. | However long I have | Construction paper, colored pencils, brads, and a finished disk for an example | I will monitor Student A's work to make sure it is completed before he goes to the enrichment area. |

**Integration of Technology:**There will be no integration of technology for this lesson.

**Outreach to Families:** There is no outreach to families for this lesson.

**Reflection:** the students started a new procedure where they left in the middle of class for lunch and then came back…holy cow, that was hard to work in! It was also a short day for Principal's primetime, which I didn't know about, so I had to rush through everything. They didn't get it! There is one student who is driving me crazy in the front row! He teases me and is disrespectful, just enough to drive me crazy but he backs down when it gets too close to getting in trouble. I need to be more firm! Student A has such a hard time with language, a much harder time than I previously thought. And she is surrounded by disruptive kids. I need to change things up a bit. I'm going to talk to my CT.

# Learning Activity Plan #4
## Section 6.6

Name:                    Content Area(s): Mathematics—Geometry                    Grade Level(s):  8<sup>th</sup> grade

Standard(s): **Standard 4: Concepts and Principles of Geometry – Goal 4.1:  Apply concepts of size, shape, and spatial relationships** –
8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three-dimensional geometric figures, using their defining properties.;
8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry.(Knowledge )<br>Today's lesson focuses on Triangles | • **Pre-** The pre-assessment was completed before the beginning of the sequence.<br>• **Interim:**Personal communication and Selected Response<br>• **Post:** The post assessment will be conducted at the end of the sequence. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. (Disposition ) | • **Pre-** The pre-assessment was completed before the beginning of the sequence.<br>• **Interim:**Personal communication<br>• **Post:** The post assessment will be conducted at the end of the sequence. |

**Special Planning/Preparations (i.e., safety concerns, etc.):**

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Objective:** To classify triangles by their sides and angles and to use the triangle inequality. | 1 min | | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Warm-up**: We will review how to find the sum of the measures of the angles of a polygon and how to find the measure of a missing angle. I will walk the students through creating a table of triangles to determine the total number of degrees in the angles of any polygon. We will then find the pattern and review the formula. Then we will work on the overhead together as a class, using the polygon transparency and worksheets.<br> Students will then turn to their textbooks and write this section's vocabulary words into their geometry portfolios. | 20 min<br><br><br><br><br>10 min | Polygon Transparency and Worksheets<br><br><br><br>*Mathematical Connections* textbook p. 261 | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Inductive Strategy:** Students will be given three different length colored strips of paper (they are representing 2X4 lengths of wood).  I need to have three triangles built for a wood shop picture frame project. Can everyone make a triangle? What strips can make a triangle? What can't? I want students to make the relation that the sum of the lengths of any two sides of a triangle is greater than the length of the third side. | 10 min | Envelopes with strips of paper<br>Overhead with strips of paper so all students can see each combination | After careful consideration, no adaptations are needed for this portion of the lesson. |

| | | | |
|---|---|---|---|
| **Instruction:** I will instruct students on the classification of triangles based on the measure of their sides and their properties that distinguish one from the others.  I will instruct them on the specific relationships that apply to the scalene, isosceles and equilateral triangles.  I will then instruct the students on ways to classify the triangles by the measures of their angles, (Acute, right & obtuse) and that all of a triangles angles must add up to 180 degrees. I will also introduce and explain the triangle inequality. | 20 min | | I will write the vocabulary words on the board for student A (who is ELL) so that it is easy for her to refer to the definitions when needed. |
| **Guided Practice:** We will do the first problem in the first two sections of the Practice 74 worksheet so students know what is expected of them. | 8 min | Practice worksheet 74 | |
| **Independent Practice:** Students will finish Practice 74 independently- I will walk around classroom answering any questions and re-teaching as needed. | 20 min | Practice worksheet 74 | I will monitor student B (who is on an IEP) to help him stay on task. |
| **Closure:** I will quickly do a review by asking concept questions such as what triangle has sides that are all different lengths?,  When a triangle has two sides of same length what is it called?, etc.  These will be questions that reinforce the lesson and help students familiarize and use the vocabulary terms.<br>I will remind students that any work they did not finish in class is homework and to bring it to the next class, finished and in their portfolios. | 2 min | List of prepared questions | |

**Integration of Technology**: There will be no technology integration for this lesson

**Outreach to Families**: There will be no outreach to families for this lesson

**Reflection:** I was going to use social learning with the inductive strategy but I just didn't think I had enough of a handle on the students, and Dr. Kelle came. I couldn't do it. I am having a hard time not taking their negative attitudes personally…I need to work on this!
The re-teaching of the polygons went very well. I kept hearing students say "oh, I get it," which was gratifying.
Now it's the triangle inequality that is confusing to them. I think I got mixed up on this, so I don't think I explained it very well. More re-teaching!

**Learning Activity Plan # 5**
**Section 6.7**

Name:                                      Estimated Time: 90 minutes

Content Area(s): Mathematics—Geometry          Grade Level(s): 8th grade

Standard(s):**Standard 4: Concepts and Principles of Geometry—Goal 4.1: Apply concepts of size, shape, and spatial relationships** –
8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three-dimensional geometric figures, using their defining properties.;
8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry. <br> (Knowledge ) <br> Today's lesson is on Quadrilaterals | • **Pre-** The pre-assessment was completed before the beginning of the sequence. <br> • **Interim:** Personal communication and Selected Response <br> • **Post:** The post assessment will be conducted at the end of the sequence. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. <br> (Disposition ) | • **Pre-** The pre-assessment was completed before the beginning of the sequence. <br> • **Interim:** Personal communication <br> • **Post:** The post assessment will be conducted at the end of the sequence. |

**Special Planning/Preparations (i.e., safety concerns, etc.):** I will discuss with the students my expectations for their behavior out in the hall during the digital camera lesson the first day, and in the computer lab on the second day.
I made arrangements to use the computer lab about three weeks ago, so I could bring students in to do their webquest.

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Warm-up:** Students will complete a Warm-up sheet to review previous lesson concepts.  We will go over these as a whole group. | 10 min | *Lesson Starter worksheet 56* | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Anticipatory Set:** Discussion with students of places and things we see geometrical shapes in and around.  Examples: Architecture, video game designers use them all the time, etc.   The students will then be split into groups **(small group experiences)** where they will take digital cameras (*technology integration*) and quietly go around the school and take pictures of places and things that use geometric shapes.  They will have to fill out a data sheet telling the shapes and locations of their pictures. I will take two groups out and the other students will be left in the classroom with two adult helpers and they will create tessellations and/or symmetry disks. | 25 min | Digital cameras-enough for every group to have one. <br><br> Data sheet <br><br> Heavy duty cardstock, brads, colored pencils, scissors | I will place students in groups of my choosing that I feel will best benefit Students A (who is ELL) & B (who is on an IEP). |
| **Objective:**  To identify special quadrilaterals and apply their properties and relationship | 1 min | | |

| | | | |
|---|---|---|---|
| **Input & Modeling:** Students will then add this section's vocabulary words into their geometry portfolio to learn and review. | 3 min | *Mathematical Connections* textbook pg.266 | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Direct Whole Group Instruction:** I will instruct the students on the types of Quadrilaterals and their properties. I will hand out a sheet with visual models of these types for them to put into their portfolio and to be able to reference when needed and to study from. | 15 min | Handout of quadrilaterals | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Guided Practice:** Protractors will be handed out to use on the questions that require measuring and we will go through problems 1-16 pages 267-268 as a whole class. | 15 min | *Mathematical Connections* textbook Protractors. | After careful consideration, no adaptations are needed for this portion of the lesson. |
| **Independent Practice:** Students will be given Skills and Application worksheet to work on independently. If they do not finish in class it will be considered homework. | 15 min | *Practice worksheet 75* | I will monitor student B (who is on an IEP) to help him stay on task. |
| **Closure:** I will explain to students that our next class time will be spent in the computer lab. We will review rules for the lab and discuss the Web Quest Scavenger Hunt that they will be doing. | 5 min | | |
| **Integration of technology:** In the next class period, students will be participating in a webquest in the computer lab. My partner and I have created a website which is all about geometry. They will be given a set of questions they will have to answer using our website and the websites we have linked to from our page. The questions will review concepts we have gone over in class, and they will also give the students more information about how geometry is a part of everyday life. | 50-60 min | Website (http://sites.google.com/ site/8thgradegeometry/) and webquest questions worksheet | After careful consideration, no adaptations are needed for this portion of the lesson. |

**Integration of Technology**: 1) Students used digital cameras to document everyday objects that have geometrical shapes.
2) Students will also have a second integration of technology when we go into the computer lab and do a Web Quest Scavenger Hunt using the website designed by my partner and myself.
**Outreach to Families**:Students will be given a permission slip for their guardians to sign, which they will bring back on the day we go to the computer lab. This note home provides the students' families with information about my expectations for my students in the computer lab, as well as information about how to access the Twin Falls School District's computer use policy.
**Reflection:** I finally changed the seating arrangement, which the students really resented. But I just couldn't take the groupings as they were….I hope it helps! It seemed to today. I also instituted a new arrangement for calling on students. Dr. Kelle had said that I only called on specific students, which I realized was true. So, I have a box with two cups inside. One cup is for the names of students that have been called on and one is for students who have not been called on. When I call on someone and they give me an answer, whether right or wrong, I give them a piece of candy. The students really liked this, and it really helped to keep me calling on everyone, which felt good.
The digital camera shape hunt was not as fun for the students as I thought it would be. They seemed to be uninterested in the whole process. But the webquest was a big hit with everyone! They loved the tangrams on the Virtual Manipulatives site and they loved the pictures of the geometry with wood. I think I got it right with this lesson!

April 2, 2009

Dear Parents/Guardians ~

On Monday, April 6, your student will be participating in a webquest in the computer lab for his/her math class. This webquest is similar to a scavenger hunt, the difference is that we will be using the Internet to hunt for information. In class, we have gone over the protocol that your student should follow while he/she is in the computer lab, but I also wanted to let you know of my expectations.  I would appreciate it if you would go over this information with your student, and then sign the bottom of this form and have them return it to school on Monday.

I expect students to:

- …stay on the web pages that have been compiled for them. Please do not search or explore web pages that have not been assigned, everything you need to answer the questions on the webquest are on the pages that are linked to our website.
- …be courteous of the fact that we are guests in the lab. Please log off when you leave and put everything back the way you found it.
- …adhere to the school district computer use policy. If you have questions about this policy, please let me know and I will find the answer for you. If you would like to see a copy of this policy, you may access it on the Internet at: http://www.tfsd.org/LinkClick.aspx?fileticket=u7UZQm3d8wY%3d&tabid=181 If you do not have access to the Internet, and would like a copy of the policy, let me know and will get one for you.

Most of all, I want your student to have fun! I believe this will be an enjoyable and interesting way for all of us to review the material we have been covering in class so far. I appreciate your time and support.

Sincerely,


_____          _____

   Parent Signature                                          Student Signature

**Learning Activity Plan # 6**
**Section 6.8**

Name: Estimated Time: 90 minutes

Content Area(s): Mathematical--Geometry Grade Level(s): 8th grade

Standard(s):**Standard 4: Concepts and Principles of Geometry – Goal 4.1: Apply concepts of size, shape, and spatial relationships** –
8.M.4.1.1 Describe and classify relationships among types of one-,two-, and three dimensional geometric figures, using their defining properties.
8.M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target Four:** Students will analyze and adapt the strategy of identifying patterns during problem solving. (Reasoning) | • **Pre-** The pre-assessment was completed before the beginning of the sequence.<br>• **Interim:** Personal communication and Selected Response<br>• **Post:** The post assessment will be conducted at the end of the sequence. |

**Special Planning/Preparations (i.e., safety concerns, etc.):**

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Warm Up:** We will review the homework for the previous section as I heard many students had difficulty with it. | 8 min | Practice 75 from previous section | |
| **Anticipatory Set:** Each student will be given a small kaleidoscope. They will be a few minutes to play with them and take notice of what they see.<br>Next I will model pictures from Escher and ask the students what they have in common with each other and what they have in common with the kaleidoscopes | 5 min | Kaleidoscopes for each student (Found at the Dollar store)<br>Photographs of some of M.C. Escher's work with patterns | After careful consideration, no adaptations are needed for this aspect of the lesson. |
| **Objective:** Students will be able to identify and analyze patterns and adapt strategies of how to identify patterns. | 1 min | | |
| **Discussion: (Whole group Instruction)** I will explain that patterns are found in many areas and many ways. There are patterns in art, computers use patterns for information processing, there are number patterns, etc. (Can the students name any patterns?) We will discuss ways to identify and solve using problem solving strategies: Choosing the correct operation, Making a Table, Guess and check, Using Equations, and Identifying a Pattern (this last strategy is the focus of this lesson) | 15 min | | I will be aware of any words that may be confusing to student A (who is ELL) and write definitions, when needed, on the board. |

| | | | |
|---|---|---|---|
| **Guided Practice:** Turning to pg 272 in textbooks, we will discuss, explain and clarify steps to identify patterns in problems 1-8. We will then move on to pg 273 and continue doing problems 1-6, 11& 12 | 20 min | *Mathematical Connections* textbook pg. 272 | |
| **Problem-based Learning model &Social Learning:** Students will work in pairs or groups of three and work on the Pretest worksheet. This sheet includes geometric patterns, numeric patterns and polygonal patterns problems. The students must identify what the problems is, what strategy to use to solve. | 15 min | | |
| **Independent Practice:** Students will be given a quiz, *Practice 76* worksheet, to finish independently. | 25 min | *Practice worksheet 76* | |
| **Closure:Whole group**review of problem solving strategies and finding patterns.<br>**Extension:** Students will continue to work on their tessellations or symmetry disks if they are finished with their assignments. | 3 min<br><br>Whatever time we have left | Heavy duty card stock, scissors, coloring pencils | Student B will be reminded that he must show me his completed work before moving to the enrichment area. |

**Integration of Technology**: There will be no technology integration for this lesson

**Outreach to Families**:There will be no outreach to families for this lesson.

**Reflection:**The new seating arrangement is helping a lot! I feel like I'm finally getting in the groove and now I'm almost finished! They seemed to understand the problem solving strategy of using a pattern. They liked the kaleidoscopes, more than I thought they would. They also were really interested in M.C. Escher's work, which was cool. I slipped in the combinations concept from statistics, without telling them it was statistics, and they seemed to understand it well enough. I hope it helps them on the ISAT.

**Learning Activity Plan # 7**
**Section 6.9**

Name                    Content Area(s): Mathematics—Geometry          Grade Level(s): 8<sup>th</sup> grade

Standard(s):<u>**Standard 4:**</u> **Concepts and Principles of Geometry—Goal 4.1: Apply concepts of size, shape, and spatial relationships—**
8.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes.  8. M.4.1.7 Use appropriate vocabulary and symbols.

| Achievement Targets: | Assessments: |
|---|---|
| • **Target One:** Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry. (Knowledge) | • **Pre:** The pre-assessment was completed before the beginning of the unit.<br>• **Interim:** Personal Communication & Selected Response<br>• **Post:** The post assessment will be done at the end of the unit. |
| • **Target Three:** Students will understand and appreciate how geometry is used in everyday life applications. (Disposition) | • **Pre:** The pre-assessment was completed before the beginning of the unit.<br>• **Interim:** Personal Communication<br>• **Post:** The post assessment will be done at the end of the unit. |

**Special Planning/Preparations (i.e., safety concerns, etc.):**

| Procedures | Time | Materials | Adaptations for Students with Special Needs |
|---|---|---|---|
| **Warm-up:**Students will be given time to work on their vocabulary portfolios as they will need to be handed in the next class period. They will also add vocabulary terms for this section to their portfolio. | 10 min | *Mathematical Connections* textbook | After careful consideration, no adaptations will be needed for this aspect of the lesson. |
| **Objective:** To recognize and find lines of symmetry in plane figures. | 1 min | | |
| **Direct Instruction:** I will give examples and instruction in finding symmetry in various planes, shapes and everyday items.  I will hand out an informational sheet that gives visual examples of lines of symmetry.  They can use these to add to their portfolio and for future reference. | 8 min | Baseball, pictures of logos that have symmetry<br><br>Symmetry information sheet | |

| | | | |
|---|---|---|---|
| **Inductive Strategy with Centers:** Five centers will be set up: 1. Pages with letters of the alphabet (all symmetry) 2. Joker playing cards (anti-symmetry) 3. Kings, Queens & Jacks of playing cards (rotational symmetry) 4. Yin Yang signs and shapes (rotational symmetry). 5. Picture of the Washington Monument& bugs (horizontal & vertical symmetry). At each center, the students must decide if there is evidence of symmetry, if yes, what kind of symmetry? **(4 min at each center)** | 20 min | Alphabet letters, Jokers, Kings, Queens, Jacks from playing cards, pictures of Yin Yang sign, shapes cut out like snowflakes, Photos of Washington Monument with water reflections Symmetry Data Sheet | I have placed Students A & B in groups that I feel will best benefit their learning. |
| **Guided Practice:** We will go through what the students found at their centers. We will discuss the different kinds of symmetry. | 10 min | | After careful consideration, no adaptations will be needed for this aspect of the lesson. |
| **Closure:** Review of symmetry lines and clarification of any questions | 2 min | | |
| **Review for test:** Students will play Geometry Bingo. They will be given a bingo card with the answers to different review questions that I will ask. They will place a candy on the board for each correct answer. | The remainder of the period | | After careful consideration, no adaptations will be needed for this aspect of the lesson. |

**Integration of Technology**: There will be no technology integration for this lesson
**Outreach to Families**:There will be no outreach to families for this lesson
**Reflection**: My CT is getting worried about the ISAT, so we are post-testing sooner than we planned. So, I had to adjust this lesson plan to include a review, and Dr. Kelle came! But it actually worked out great! The kids really got into the symmetry idea, I tied in advertising and how our concept of beauty is tied to symmetry, which they just thought was really interesting. They were relatively well-behaved in the centers. I wish the center stuff was a bit more elaborate, but it was ok. The best, though, was the geometry bingo. They LOVED it! It was a really fun way to keep everyone engaged as we reviewed. I am so glad I thought of that! I just hope they get it enough for the test!

**Reflection-in-Action (1)**

**1.**On the first day of my teaching sequence I was teaching students how to use a protractor. I thought students at the eighth grade level would be well-versed in the use of a protractor, so I thought this lesson would be more of a review. I was wrong. I went through a description of the protractor, using the correct terminology. I also gave students a handout that had a picture of a protractor, which was labeled using the same terms that I was using in the lesson. I then went through a demonstration on the board of how to use a protractor to measure an angle and how to use it to draw an angle. I then had the students work in pairs to complete an activity sheet of measuring angles, as I walked around the room to answer questions. After I taught another skill, using a compass, I had the students do a worksheet on measuring angles independently.

**2.** There were so many things about this lesson that didn't work. First, students didn't understand how to use a protractor, or why someone would want to use a protractor. Then they just couldn't get an accurate measurement from the protractor. The rays of the angles weren't long enough to extend past the scales of the protractor, so they were left guessing what measurement the angle should be. I knew this frustrated them. I gave them a 5 degree range of error, but this was not enough for the answers they were coming up with. I saw them try to extend the lines of the ray by drawing them, but these were not drawn with enough accuracy to give the correct answer.

**3.**That evening,I looked on Internet for methods of teaching students how to use protractors and I found a great one. The teacher used thread that was put through the origin (or center hole) of the protractor and taped onto the back. Students can then lay the thread on the ray, thereby extending the ray so it crosses the scales of the protractor. The students loved it. At first, they didn't know what I was talking about or why I had taped thread to the protractors, but after they used it they all could see how much easier it made the whole process. It worked well for them.

**4.**In order to achieve target two, which is *Studentswill demonstrate their knowledge of the steps for measuring and drawing angles and constructing and bisecting line segments and angles using the appropriate tools (i.e. compass and protractor)*, students needed to learn how to measure an angle accurately using a protractor. But if they were not reading the measurement carefully they would not get the correct results. I needed to move beyond the simple idea of extending the lines of the ray to read the measurement and teach my students how to read the correct scale of the protractor and how to use what they knew about angles to see if their measurement made sense, but I could not move beyondthe initial step because it was inhibiting their ability to use this tool correctly. Having used this modification with my students, I was able to go on to the other concepts and teach the use of protractors more effectively. If students do not have a strategy that allows them to extend the ray of the angle efficiently, they will continually give inaccurate readings of the angle measure. This modification was very successful.

**Reflection-in-Action (2)**

**1.**The last lesson I taught was on symmetry (an object or shape is symmetrical when it is the same on both sides of a dividing line). I was teaching the anticipatory set, and I was leading into an activity about symmetry that would have my students working in groups moving through centers having to do with symmetry. Students have been studying symmetry since second grade, so I wanted to explain it to them in a more mature way. I also wanted them to be engaged enough to go through the centers with some interest so they would fulfill the task and answer the questions on their data sheet.

**2.** Within the anticipatory set, I was showing the students logos from cars and trying to explain why people who created advertisements tried to appeal to consumers using symmetry. I could

see the idea intrigued many of my students but they didn't understand fully what I was trying to say. I wanted them to appreciate that humans found symmetry beautiful.

**3.** As I was describing to the students that humans found symmetry beautiful I remembered a film I had seen in a speech class I had taken. The film was about why our physical appearance is so important. It discussed the research behind what humans found attractive in a human face and the conclusion was that we found a symmetrical face beautiful. I told the students about this idea that we are hard-wired to appreciate symmetry, and that it even affects how we view another person's beauty, or are seen as beautiful ourselves. This intrigued them much more than car logos. I was asked questions like what would be symmetrical about a face, and what can we do to be more symmetrical. The conversation that ensued was interesting to everyone, and it was also very natural and unrehearsed.

**4.** While students have been learning about symmetry since they were young, many still find it confusing. I wanted students to relate this rather abstract concept to something they were interested in, and to an eighth grader the most interesting thing is themselves and their peers. I could then touch upon two of my target areas; target one: *Students will learn basic concepts of geometry such as shapes, angles, quadrilaterals, triangles, and symmetry.* (Knowledge) and target three: *Students will understand and appreciate how geometry is used in everyday life applications.* (Disposition). If students do not understand the real life application of symmetry they will not understand why it is such a focus in mathematics and they will become disengaged from learning about the concept.

**F. Profile and Analysis of Student Learning**

**Profile of Student Learning: whole class analysis**



Target 1 - Whole Class



Target 4 - Whole Class
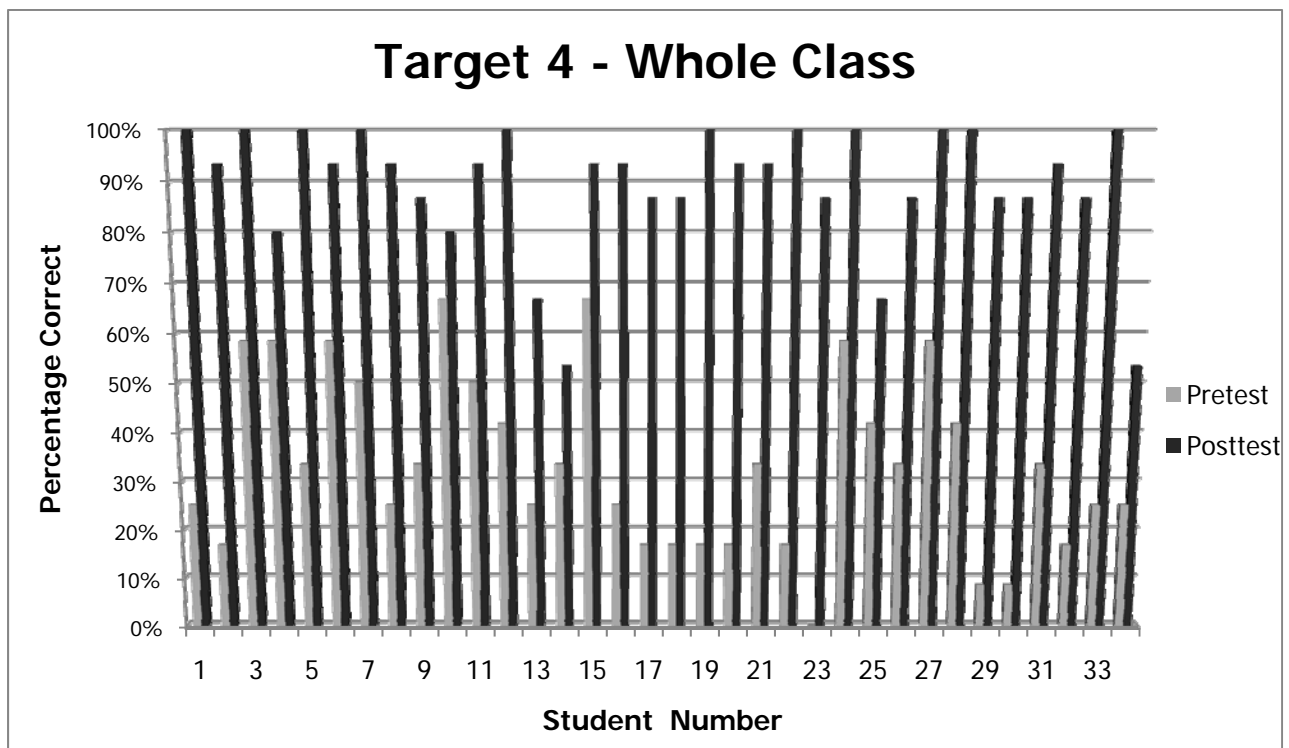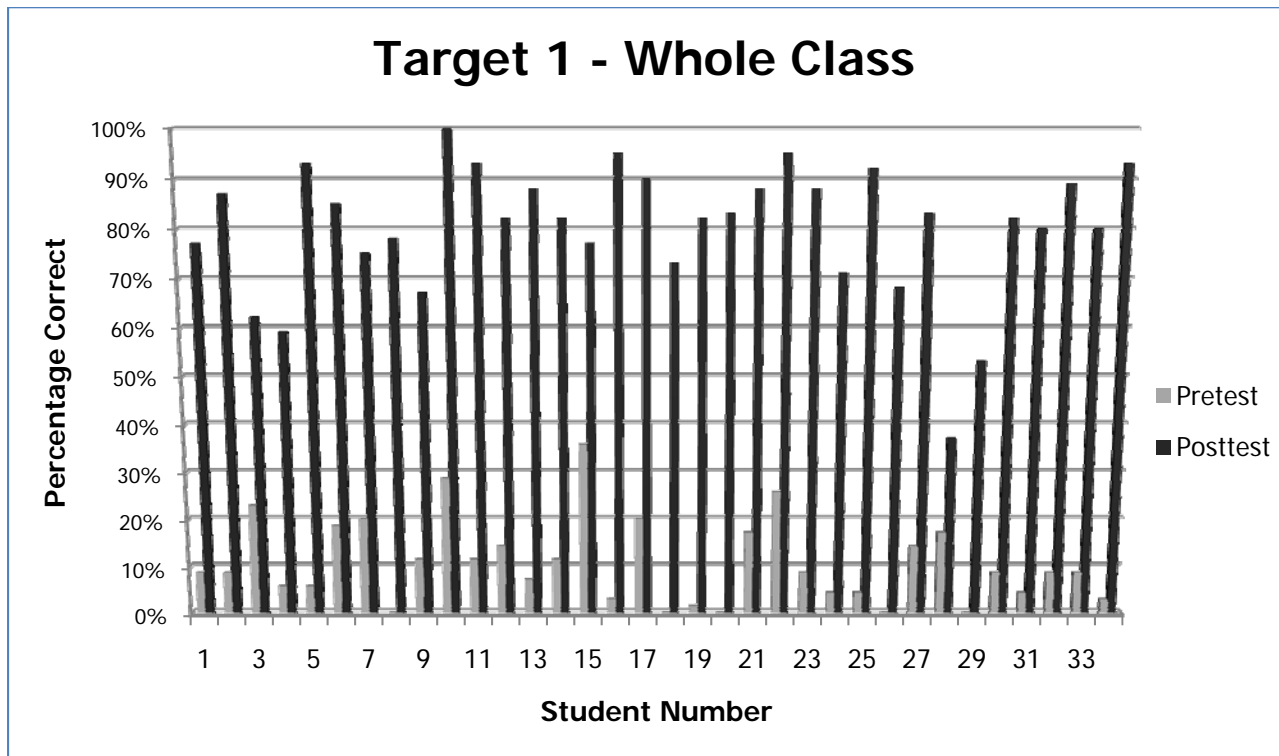
**Impact on Student Learning**

| | Students Who *Achieved the Target* According to Stated Criteria | | Students Who *Showed Improvement* from Pre-assessment to Post-assessment | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Achievement Target #1 | 28 | 82% | 34 | 100% |
| Achievement Target #4 | 30 | 88% | 34 | 100% |

TWS Content: __Mathematics – Geometry__
TWS Grade Level: ____8_____

**Analysis of Student Learning**

       The pre-assessment and post-assessment for target one were both selected response fill-in the blank tests. The pre-assessment was a standard end of the unit test provided by the publishers of the *Mathematical Connections* textbook that is used in my class. The post-assessment was a teacher-created test, made by my cooperating teacher. She uses a method in which she groups the questions into categories relative to the objectives she is teaching. Although the categories I was using for my targets were different, as I grouped multiple objectives into one target, the overall objectives I was teaching were the same as my CT. So, I used this test as it was very useful for me to analyze which objectives, or concepts, the students did not understand fully. The students also liked this type of test because my CT and I allowed students to make up the objectives of the test that they did not pass in order to get a better grade, so they could focus on the parts of the test that were difficult for them rather than retaking the test as a whole. This also allowed me to teach to mastery rather than allowing students to continue who did not fully comprehend the material. But, for this profile and analysis, I will focus on the results for first time the students took the test, as I have not received the scores for the make-up tests yet.

       28 out of 34 of my students reached or exceeded the 70% criteria for the target. Of the six students who did not reach the 70% criteria, two scored a high 60%, one a low 60%, one scored a

high 50%, another student a low 50%, and one student scored a 38%. I believe that one of the critical factors in not having all of my students reach the criteria was time. I felt that I did not get to re-teach concepts that were causing my students problems because I was so rushed to get through the lessons that I was presenting. I also feel that, because my class size was so large with 34 students, I could not give each student the time they needed to get extra help and additional instruction. The student who scored a 38% was also absent for the majority of the days that I was teaching, which my CT told me was a problem she had been having with this student all year. My CT also suggested that I could have used more interim assessments during my teaching so that I could catch the concepts the students were missing as they were being taught, rather than at the end of the unit.All of my students showed growth, however, with all but three gaining over 50% growth from the pre to post-assessment scores.

The concepts addressed in target four were not going to be addressed on the end of the unit exam for my CT, so I created a pre-assessment for the target and used a pre-made worksheet that focused upon the concepts for my post-assessment. Both assessments were fill-in the blank, selected response. All but four of my students reached the criteria for this target, and of the four, two students received a 68% and the two other students received a 53%. Again, I think my two biggest factors for not having all of my students achieve the target is that of time and class size. I had thought that 90 minutes would be ample time to teach a concept, but it was not a sufficient amount of time for me to review and re-teach all of the concepts the students did not understand.

Target four was a bit easier to achieve because there weren't as many concepts being addressed as there were in target one. All of my students achieved growth, yet only 22 students had over 50% growth. I believe that there was less growth on this concept because the students

had been continually introduced to it throughout the semester, so it was not so much a new concept as a new strategy for solving mathematical problems.

**Subgroup and/or Individual Profile and Analysis**
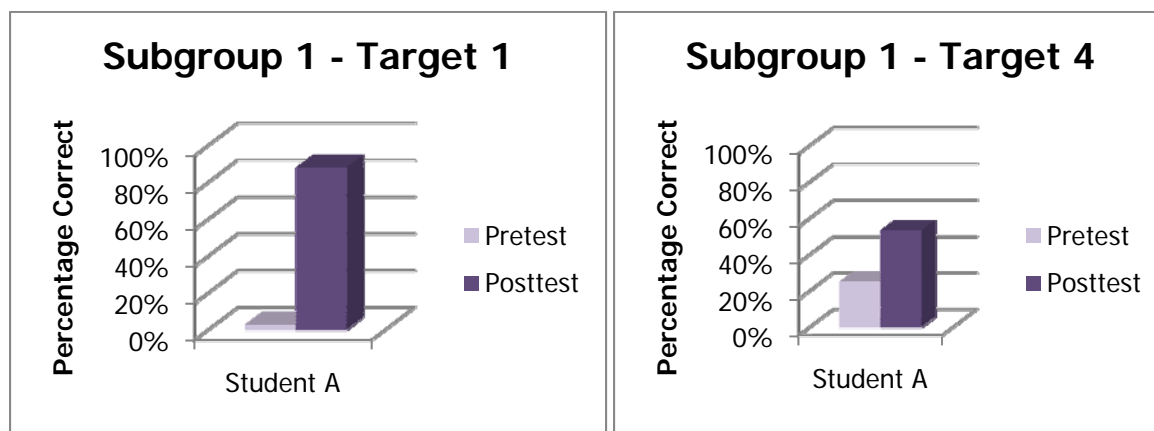


Student A is an ELL student from China. She is a very intelligent young woman, but she is also somewhat proud and does not want to stand out any more than she already does because of her cultural and linguistic differences. Because of this, student A does not utilize translation devices that she has at her disposal, which can be a problem when she comes across mathematical jargon and concepts, as well as the language in story problems and directions. For the post-assessment of target one, I was able to give student A a word bank that consisted of mathematical terms that she had difficulty with, such as the classification of triangles by their sides using terms such as equilateral, scalene and isosceles. This accommodation to the material helped her to be more successful on the post-assessment for target one, scoring an 88%, which far exceeded her pre-assessment score of 3%.

Target four was much more difficult for student A, as the test questions were primarily in the form of story problems. Her pre-assessment score for target four was 25% and her post-assessment score was a 53%. While this does show growth, I was frustrated by my inability to help student A be successful on this target. I did not present the material in such a way that she

could understand the concepts well enough, and I don't think that I was creative enough in my modifications to the work or to the assessment so that I could help her find success. Again, I think time and class size were barriers for me in finding effective ways to teach student A, but I also think my inexperience as a teacher was a barrier as well.
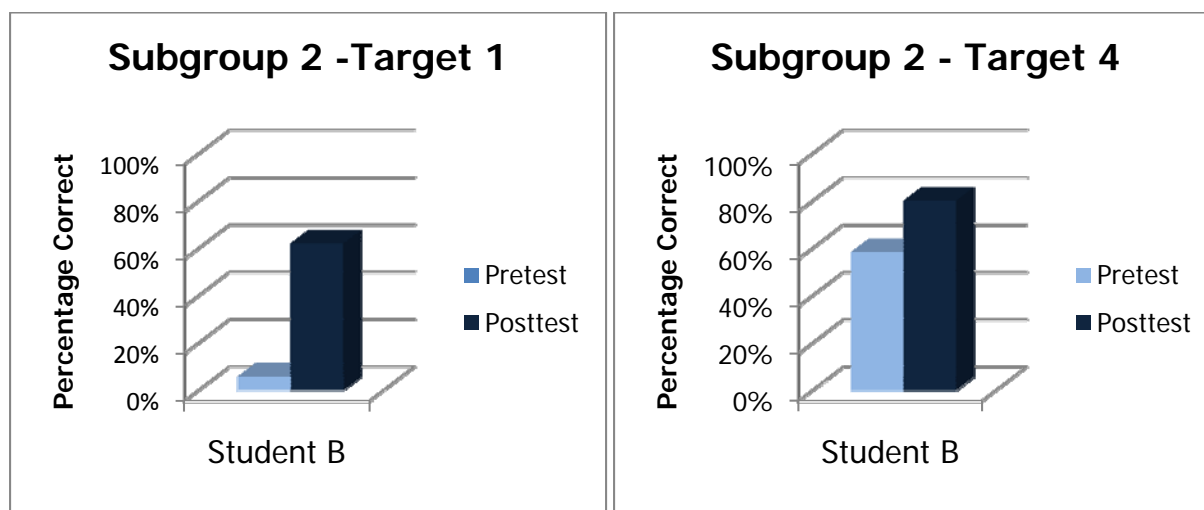


Student B is a young man in my class who is on an IEP. I never found out what he was on an IEP for, but I did know that it was not specifically for math. After observing and interacting with student B, I found that a few of the challenges he faced were: he had trouble staying on task, he became defiant when anyone tried to help him, and he was not accepted into the social structure of the class. While I feel I made great strides with student B personally, and found ways to interact with him in a positive way, I had a hard time keeping him on task and I never found ways that helped him integrate into the class as a whole effectively.

Unlike student A, student B had a much more difficult time with target one. I attribute this to the fact that target one encompassed so much more material than target four, and student B did not hand in a large percentage of his work for this target. And because he became frustrated when I tried to help him with his work, I was not able to give him the clarification of the concepts that he needed while I was teaching. I believe he scored as well as he did because he

is so intelligent and can grasp concepts that many other students find difficult. It was gratifying to see the growth in student B's assessments, from a 6% to a 62%, but I wish I could have helped him achieve as much as he could have potentially achieved.

Target four was a more concentrated target, covering problem solving strategies. Student B scored a 58% on his pre-assessment and an 80% on his post-assessment. Again, I think if I could have figured out ways to clarify concepts that he did not understand, I think student B could have scored even higher on his post-test.

**Reflection-on-Action**

**1.** As I look back on my teaching sequence I think the most inhibiting factor to finding complete success with all of my students was time. I don't just mean time in the classroom, although that was an important factor, but I also think that the time I had outside the classroom was also limited. It was limited by the amount of work I had to do for other classes and tests I had to take, such as the Praxis tests and the ICLAs, so I could not devote as much time as I wished to finding more effective teaching strategies.

I also think my own inexperience was a factor that came into to play in looking at why not all of my students met the criteria for each target. I was not able to adapt my teaching strategies and style to my students' diverse needs effectively enough because I was focusing so much on the content, as well as to putting into practice all of the many components of teaching that I have been learning over the course of the previous semesters. I think that time and experience will play a huge role in my becoming a more successful teacher. I also think that acquiring more skills by observing more teachers, as well as taking methods classes will give me the tools that I need to be more effective with the students in my classroom.

Finally, I think class size played a large part in my inability to reach every student in the class, and ensure each student's success. Having 34 eighth grade students in the classroom made classroom management a primary focus of each lesson. I had to keep the class under control, using my energy to think of strategies to keep the disruptive students on task, while engaging the quieter students in the lesson. At times I felt as if I were juggling 34 balls in the air, with only my two arms. I am sure this is how many teachers feel, especially when they are inexperienced. I see now that I need to be firmer with disruptive students so that all of the students in my class have a chance to learn. Classroom management is an area in which I will strive to be more effective.

**2.** My instructional sequence went much more smoothly when I took control of the class. I began the fifth of my seven lesson plans by changing the seating arrangement of my students. This changed the dynamics of the class dramatically. Before I changed the seating, I had five or six students clumped together in front of me that would join together in disrupting the class. By dispersing these students throughout the class, I effectively changed the climate in the room to one that was much more conducive to learning. I wish I had done this sooner.

I also found that when I tied the concepts I was teaching to my students' lives, they were much more engaged by the material. Yet, this had to be done authentically. My students could tell when I was overreaching for a connection, rather than just admitting it was an abstract concept, and they were much less engaged by those concepts. I learned that I must be absolutely authentic with what I was teaching my students, and sometimes that authenticity must bring out the fact that some of these math concepts just have to be learned for their own sake.

Another area in which I found my instructional sequence impacted waswhether or not I was comfortable with the material I was teaching. When I had a clear understanding of the material, my students would find it much more comprehensible. There were two concepts that I

found difficult and, as a result, these concepts were much more difficult for my students to grasp. They were the activity in which I taught them how to use a compass and the lesson about the triangle inequality. When I began my sequence, I felt I had a grasp on these concepts, yet when I stood in front of my class and tried to teach them to my students, I found myself becoming flustered and second-guessing what I knew. I now realize that I must spend more time understanding concepts if I have any doubts about them, by asking other teachers and so forth, but I also realize that I must get used to making mistakes in front of my students and being comfortable being wrong or admitting that I don't know some of the answers.

Finally, I think my instructional sequence was not as successful as it could have been for student A and B because I did have fundamental information about their specific needs. I think I would have been more effective with both of these students had I had more information about them. I would have liked to have talked to both the ELL teacher and the resource teacher, and I would have liked to have read the students' cum files to get a better idea about how I could help these students find success in my classroom. I don't think I was aptly prepared to teach either of these students effectively enough.

**3.** If I was going to redesign this instructional unit I would do a number of things differently. I would assess my students more frequently throughout the course of the unit, as my CT suggested, so that I could keep a closer eye on their understanding. I would be more resolute in my attempts to discover the necessary information about student A and B's needs so that I could teach them more effectively. And, finally, I would group my students into heterogeneous groupings more often, so that they could peer teach each other concepts that they found difficult. With such a large class, I needed ways to reach students on a more individual basis. Utilizing the

students who understood particular concepts, and having them re-teach students who had less of an understanding, would have given me one more way to reach all of the students in my class.

**4.** I believe professional development is critical in the profession of teaching. Educational theory is consistently evolving as new methods and strategies are introduced. Staying abreast of those changes is an important part of being a successful teacher. In the past, I have been a contributing member of the Twin Falls Education Association [TFEA], which is the local chapter of the National Education Association [NEA]. I served as vice-president during the 2007-2008 school year and a delegate for the TFEA for two additional years. I received valuable training and support through the TFEA and I will continue that association by being an active member when I become a teacher. I will also take advantage of the teacher trainings, workshops, conferences and in-services that my school district provides. I have been lucky enough to attend some trainings and in-services provided by the Twin Falls School District and I have found them to be filled with pertinent information that was extremely beneficial. Finally, I plan on continuing my education after I receive my bachelor's degree. I plan on working on my reading endorsement first, then working toward a master's degree in education. I love learning, and I plan on continuing my education so that I can pass on relevant information to my students and incorporate the newest research-based strategies into my classroom.

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