

Instructional Unit Assignment

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Daniel Gonzales

ICL 7030 - The University of Memphis

UNIT INTRODUCTION, UNIT OBJECTIVES, UNIT ACTIVITIES DESCRIPTION,
and ACTIVITIES RATIONALE:

[Please note that each time an activity is described, the objectives targeted by the activity are given in parentheses. The activity rationale tells why this activity will help students learn the objective. Objectives are also noted in the rationale.]

This is a description of the activities for the three-week unit on polygons for the sixth graders that is focused on relocating polygons on the coordinate plane, namely transformations. Throughout the unit, students will refer to their understanding of the use of graphs and properties of polygons. Students will diagram transformations of polygons on an interactive smartboard, or ISB. The day after a topic is introduced, my assigned activities are similar in description, mainly due to the students working cohesively in small groups. The unit is targeting the following objectives:

Goal 1: Students will learn about points on the coordinate plane.

Objective 1.1 Students will plot points on the coordinate plane.

Objective 1.2 Students will identify ordered pairs of points on the calculator.

Objective 1.3 Students will recognize vertices of polygons as possible points on the coordinate plane.

Goal 2: Students will learn the properties of triangles.

Objective 2.1 Students will graph triangles on the coordinate plane.

Objective 2.2 Students will identify each vertex of a triangle as an ordered pair.

Goal 3: Students will learn the properties of quadrilaterals.

Objective 3.1 Students will graph quadrilaterals on the coordinate plane.

Objective 3.2 Students will identify each vertex of a quadrilateral as an ordered pair.

Goal 4: Students will learn translations of polygons on the coordinate plane.

Objective 4.1 Students will graph a translation of a polygon on the coordinate plane.

Goal 5: Students will learn reflections of polygons on the coordinate plane.

Objective 5.1 Students will graph a reflection of a polygon on the coordinate plane.

Goal 6: Students will learn rotations of polygons on the coordinate plane.

Objective 6.1 Students will graph a rotation of a polygon on the coordinate plane.

Accommodations for students including those with disabilities:

I have one student with a disability. She is in my fifth period class. She has a physical handicap, which forces her to be in a wheelchair. She will be accommodated for the performance objectives, specifically the task of transforming polygons on the interactive smartboard, or ISB, by letting her diagram the different transformations of polygons in her lap on a hand-held dry-erase board using a marker.

I will offer accommodations to gifted students by providing additional material to them on each topic. They will complete this additional material if, and when, they finish the class assignments. In addition, the gifted students will be asked to help the other students in the class, to ensure everyone is properly doing the assigned work. This “teaching” to other students will reinforce a better understanding of the materia, therefore these gifted students will retain the information even stronger in their long-term memory.

On Day 1, I will begin with assigning bellwork that includes an exercise involving pre-requisite definitions the students will need to understand pertaining to the lesson objectives. The topic for Day 1 is the coordinate plane. Students will define words such as coordinate plane, x-coordinate, y-coordinate, ordered pair, x-axis, and y-axis. I will begin by drawing the coordinate plane on the interactive smartboard, or ISB, and then I will identify the different parts, which will include the definitions that were assigned in

the bellwork. I will then model for the class by providing examples on the ISB of plotting points on the coordinate plane (1.1). Students will take copy the examples by taking notes in their notebooks (1.1). Next, I will review the calculator keystrokes for the students as they identify ordered pairs on their calculator. Students will use a TI-84 Plus graphing calculator to plot points on the coordinate plane. The focus of the calculator exercise will continue with the students understanding the keystrokes by navigating to the table of values for x and y. Finally, I will draw two polygons, specifically triangles and quadrilaterals on the ISB. I will show the students where to identify each vertex of the polygon. Students will continue taking notes from what information is on the ISB regarding polygons and their vertices (1.3). For homework, students will complete textbook exercises on plotting points and graphing polygons on the coordinate plane (1.1). Students will also list the ordered pairs of the vertices of the polygons that they graph on the coordinate plane (1.3).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to plot points and graph polygons on the coordinate plane. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of the parts of the coordinate plane by first defining the terms involved. By modeling the locations of the parts of the coordinate plane on the ISB, students will see and hear the proper ways of

identifying the parts (1.2). Students will practice exercises from their textbook on the daily topics, which will enforce a deeper understanding of the material (1.1), (1.2), (1.3).

On Day 2, students will work in small groups to work exercises on the coordinate plane. The small groups include four students of similar abilities so that tiered teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of graphing on the coordinate plane. The students in the group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on plotting points and graph polygons on the coordinate plane. At the end of class, there will be a pre-assessment worksheet on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and gauge what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will ensure a deeper understanding of the coordinate plane (1.1), as well as polygons (1.2). Working within small groups, and with the dry-erase board assignments will include the

students showing precisely how to evaluate sample problems that are assigned.

Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 3, I will graph triangles on the ISB. Students will take notes in their notebook on graphing triangles (2.1). Next, I will show the students how to identify each vertex of a triangle. The students will continue to take notes on the vertices of triangle (2.2). For homework, students will complete textbook exercises on graphing triangles (2.1), as well as identifying the vertices of triangles (2.2).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to graph triangles on the coordinate plane. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of graphing triangles (2.1) by copying notes from the ISB that I model on the ISB, and individually working examples from the textbook. Students will practice exercises on the daily topics, which will enforce a deeper understanding of the material (2.1), (2.2).

On Day 4, students will work in small groups to work exercises on graphing triangles on the coordinate plane. The small groups include four students of similar abilities so that tiered teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of graphing triangles on the coordinate plane. The students in the

group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on graphing triangles on the coordinate plane. At the end of class, there will be a pre-assessment on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and gauge what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will ensure a deeper understanding of graphing triangles on the coordinate plane (2.1), and identifying each vertex as an ordered pair (2.2). Working within small groups, and with the dry-erase board assignments will include the students showing precisely how to evaluate sample problems that are assigned. Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 5, I will graph quadrilaterals on the ISB. Students will take notes in their notebook on graphing quadrilaterals (3.1). Next, I will show the students how to identify each vertex of a quadrilateral. The students will continue to take notes on the vertices of a

quadrilateral (3.2). For homework, students will complete textbook exercises on graphing quadrilaterals (3.1), as well as identifying vertices of quadrilaterals (3.2).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to graph quadrilaterals on the coordinate plane. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of graphing quadrilaterals (3.1) by copying notes from the ISB that I model on the ISB, and individually working examples from their textbook. Students will practice exercises on the daily topics, which will enforce a deeper understanding of the material.

On Day 6, students will work in small groups to work exercises on graphing quadrilaterals on the coordinate plane. The small groups include four students of similar abilities so that tiered teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of graphing quadrilaterals on the coordinate plane. The students in the group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on graphing quadrilaterals on the coordinate plane. At the end of class, there will be a pre-assessment on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and gauge what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will ensure a deeper understanding of graphing quadrilaterals on the coordinate plane (3.1), as well as identifying each vertex as an ordered pair (3.2). Working within small groups, and with the dry-erase board assignments will include the students showing precisely how to evaluate sample problems that are assigned. Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 7, I will use the ISB to graph a polygon on the coordinate plane. Next, I will graph a translation of a polygon on the same coordinate plane. I will graph a total of 4 examples on the ISB. Students will copy the notes from the ISB into their notebooks on graphing a translation of a polygon on the coordinate plane (4.1). Next, I will randomly call on students to get out of their desk, and come to the ISB to graph a translation of a polygon on the coordinate plane (4.1). For homework, students will complete textbook exercises graphing translations of a polygon on the coordinate plane (4.1).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to

graph triangles. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of graphing translations of a polygon on the coordinate plane (4.1) by copying notes from the ISB that I model on the ISB, and individually working examples from their textbook. Students will practice exercises on the daily topics, which will enforce a deeper understanding of the material.

On Day 8, students will work in small groups to work exercises on graphing translations of polygons. The small groups include four students of similar abilities so that tiered teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of graphing translations of polygons. The students in the group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on graphing translations of polygons. At the end of class, there will be a pre-assessment on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and

gage what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will ensure a deeper understanding of translations of polygons on the coordinate plane (4.1). Working within small groups, and with the dry-erase board assignments will include the students showing precisely how to evaluate sample problems that are assigned. Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 9, I will use the ISB to graph a polygon on the coordinate plane. Next, I will graph a reflection of a polygon on the same coordinate plane. I will graph a total of 4 examples on the ISB. Students will copy the notes from the ISB into their notebooks on graphing a reflection of a polygon on the coordinate plane (5.1). Next, I will randomly call on students to get out of their desk, and come to the ISB to graph a reflection of a polygon on the coordinate plane (5.1). For homework, students will complete textbook exercises graphing reflections of a polygon on the coordinate plane (5.1).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to graph triangles. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of graphing reflections of a polygon on the coordinate plane (5.1) by copying notes from the ISB that

I model on the ISB, and individually working examples from their textbook. Students will practice exercises on the daily topics, which will enforce a deeper understanding of the material.

On Day 10, students will work in small groups to work exercises on graphing reflections of polygons. The small groups include four students of similar abilities so that tiered teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of graphing reflections of polygons. The students in the group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on graphing reflections of polygons. At the end of class, there will be a pre-assessment on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and gauge what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will

ensure a deeper understanding of reflections of polygons on the coordinate plane (5.1).

Working within small groups, and with the dry-erase board assignments will include the students showing precisely how to evaluate sample problems that are assigned.

Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 11, I will use the ISB to graph a polygon on the coordinate plane. Next, I will graph a rotation of a polygon on the same coordinate plane. I will graph a total of 4 examples on the ISB. Students will copy the notes from the ISB into their notebooks on graphing a rotation of a polygon on the coordinate plane (6.1). Next, I will randomly call on students to get out of their desk, and come to the ISB to graph a rotation of a polygon on the coordinate plane (6.1). For homework, students will complete textbook exercises graphing r rotations of a polygon on the coordinate plane (6.1).

Assessment: I will assign a journal entry to the students. They will explain the process in complete sentences on what they learned in a step-by-step method on how to graph triangles. The journal entries will be graded for correctness, and feedback for revisions will be offered as a way for them to improve their explanations of the process.

Activity rationale: Students will gain a better understanding of graphing rotations of a polygon on the coordinate plane (6.1) by copying notes from the ISB that I model on the ISB, and individually working examples from their textbook. Students will practice exercises on the daily topics, which will enforce a deeper understanding of the material.

On Day 12, students will work in small groups to work exercises on rotations of polygons. The small groups include four students of similar abilities so that tiered

teaching can be available if needed, especially to higher or lower performing student-groups. Each student in the group will use a hand-held dry-erase board to work problems of rotations of polygons. The students in the group that do not have the dry-erase board, only one student has the dry-erase board at a time, will provide support with each other by working the same problem in their notebook. Finally, the student will show the teacher his or her work on the dry-erase board, and the teacher will offer revisions if needed. The student will then pass the dry-erase board to the next student to his or her left to work a similar problem, and the same procedures will be followed.

Assessment: I will pass out a worksheet for the students to complete during class. This worksheet will serve as a post-assessment on graphing rotations of polygons. At the end of class, there will be a pre-assessment on the next day's lesson that will be turned in and graded. Also, this pre-assessment will allow the teacher to understand and gauge what the students understand about the next day's lesson, and ensure if remediation is necessary.

Activity rationale: The purpose of this day is to further the students' understanding of the material that was introduced the day before. This reinforcement will ensure a deeper understanding of rotations of polygons on the coordinate plane (6.1). Working within small groups, and with the dry-erase board assignments will include the students showing precisely how to evaluate sample problems that are assigned. Furthermore, the small group activity will help students in problem areas by having peers help each other in a cohesive way.

On Day 13, the students will complete a study guide that reviews the last twelve days of material. The study guide consists of a variety of problems on the coordinate plane (1.1), (1.2), (1.3), triangles (2.1), (2.2), quadrilaterals (3.1), (3.2), translations (4.1), reflections (5.1), and rotations (6.1). Students will work individually to complete his or her study guide.

Assessment: Students will turn in their study guide to be graded. This will show what the students understand about the coordinate plane (1.1), (1.2), (1.3), triangles (2.1), (2.2), quadrilaterals (3.1), (3.2), translations (4.1), reflections (5.1), and rotations (6.1). Students will work individually to complete his or her study guide.

Activity rationale: The purpose of this day is to review the material covered recently to further the students' understanding of the material. The reinforcement will ensure a deeper understanding of the coordinate plane (1.1), (1.2), (1.3), triangles (2.1), (2.2), quadrilaterals (3.1), (3.2), translations (4.1), reflections (5.1), and rotations (6.1). Students will work individually to complete his or her study guide.

On Day 14, the students will complete a formative assessment on the coordinate plane (1.1), (1.2), (1.3), triangles (2.1), (2.2), quadrilaterals (3.1), (3.2), translations (4.1), reflections (5.1), and rotations (6.1). Students will work individually to complete his or her study guide.

Assessment: The students will complete a 25 multiple-choice question test on recent material. The students have 60 minutes to complete the test.

Activity rationale: The test scores will provide data if the students mastered the lesson objectives, and have a deep understanding of the material. There is a goal in each class of 80% mastery.