Berea MS Lesson Plan 2026-2027 **Week: # 3** August 31 to September 4, 2026 **Teacher**: Mr. Danku **Grade/Subject: Math 8**

Unit Title:	Congruence and Similarity
Unit Vocabulary:	Congruence, similarity, quadrants, preimage, image, transformation, translation, vertical, horizontal
Upcoming Common Assessments (MasteryConnect):	Transformation quiz 1 (August 28, 2026) Congruence and Similarity quiz 2

	Standard(s) + Learning Objective	Activating Experience (Opening, may include "Scholar Starter")	Learning Experience (Work Time: SB Materials and Resources, Vocab, Scaffolds/Supports, SWRL, Costas)	Formative or Summative Assessment(s)	Summarizing Experience (Closing)	WICOR, AVID and/or ELLevation Strategies (aligned with learning objective)
M O N D A Y	**Standard** (write out)**:** **8.MGSR.2.3:** Identify the congruent corresponding angles of similar polygons. **Learning Objective** **Skill (what), Content (why), Product (how):** Scholars can determine a sequence of transformations that maps one figure to another figure.	**Scholar Starter** Cycle 2 day 1	***Essential Question*** How can I use a sequence of rigid transformations to move one figure into the exact position and orientation of another figure? **Standards Based Materials & Resources:** **notes Presentation** Coordinate-plane mats Congruent polygon cutouts Patty paper Transformation cards Colored pencils Rulers Student recording sheet **Content/Academic Vocabulary:** Preimage, Image, Transformation Sequence of Translation Rotation, Reflection Rigid transformation, Corresponding vertices, Congruent, Orientation **ILAP/IEP/504 Scaffolds & Supports:**	Exit Ticket Explain how a sequence of rigid transformations can prove two figures are congruent. Include a congruence statement.	Share response to exit ticket out loud	**WICOR, AVID, and ELL-Elevation Strategies** **Writing:** Students record a transformation sequence, track a vertex, and write a congruence justification. **Inquiry:** Students determine which transformations are needed and investigate whether changing the order changes the result. **Collaboration:** Partners give, follow, evaluate, and revise verbal transformation directions. **Organization:** Students organize transformation cards in sequence and complete a step-by-step recording table. **Reading:** Students read coordinate pairs, transformation directions, mathematical symbols, and labeled diagrams. **ELL-Elevation Strategies:** Use physical movement and visual models.

			Provide pre-labeled and color-coded figures. Color-code corresponding vertices. Provide polygon cutouts or patty paper. Begin with a two-step sequence involving familiar transformations. Break directions into numbered steps. Provide enlarged coordinate planes. Allow students to explain orally before writing. Provide extended processing time. Use strategic partner grouping. Check for understanding after each transformation. Reduce the number of practice problems while maintaining the same reasoning expectation. Frequently reinforce that rigid transformations preserve shape and size. **<u>Opportunities to SWRL:</u>** **Speaking:** Students verbally describe and defend their transformation sequences. **Writing:** Students record the sequence, track a corresponding vertex, and justify congruence. **Reading:** Students interpret coordinate planes, transformation directions, and labeled figures. **Listening:** Students follow a partner's directions and determine whether the directions correctly map the figure. **<u>Costa's Levels of Thinking/Questioning:</u>** **DOK Level 1** Identify the preimage and image. Name a translation, rotation, or reflection. State what rigid transformations preserve. Identify corresponding vertices. **DOK Level 2** Perform a rigid transformation. Describe a two-step sequence of transformations. Track a vertex through a sequence. Determine whether a sequence correctly maps the preimage onto the image.			Color-code corresponding vertices. Model transformation vocabulary with gestures. Provide a word bank. Allow students to rehearse explanations with a partner before writing. Provide sentence frames for speaking and writing.

			DOK Level 3 Justify why a sequence maps one figure exactly onto another. Explain how the mapping demonstrates congruence. Analyze and correct an incorrect transformation sequence. Compare two different sequences that produce the same image. Explain why changing the order of transformations may change the result.			
T U E S D A Y	**standard** (write out)**:** **8.MGSR.2.3:** Identify the congruent corresponding angles of similar polygons. **Learning Objective** **Skill (what), Content (why), Product (how):** Scholars can use mathematical modeling to show that two figures are congruent using a sequence of transformations and congruence statements.	Bell Ringer cycle 2 Day2 **Time: 5 minutes** Display two figures that appear congruent but have different positions and orientations. Present two student claims: **Student A:** "The figures are congruent because they look the same. **Student B:** The figures are congruent because a rotation followed by a translation maps every vertex of the first figure onto a corresponding vertex of the second figure. Students respond: Which student provides stronger mathematical evidence? What additional evidence could be included? Students discuss their responses with a partner. **Sentence frame:** Student ___ provides stronger evidence because _____.	***Essential Question*** How can a mathematical model, a sequence of rigid transformations, and congruence statements demonstrate that two figures are congruent? **Standards Based Materials & Resources:** **Content/Academic Vocabulary:** Coordinate-plane mats Congruent polygon cutouts Patty paper Transformation cards Colored pencils Rulers Student recording sheet **ILAP/IEP/504 Scaffolds & Supports:** Provide pre-labeled and color-coded figures. Color-code corresponding vertices. Provide polygon cutouts or patty paper. Begin with a two-step sequence involving familiar transformations. Break directions into numbered steps. Provide enlarged coordinate planes. Allow students to explain orally before writing. Provide extended processing time. Use strategic partner grouping. Check for understanding after each transformation. **Opportunities to SWRL:**	Check the students individual activity to see if the understood the lesson Exit Ticket	**Traffic signal** The scholars given prompt How confident are you about reflection in Geometry? Each student will show their level of understanding by showing a color 🟢 Green: I can identify and explain two congruent figures 🟡 Yellow: "I'm starting to get it, but I still need a little help." 🔴 Red: "I'm confused and need more practice."	WICOR **W- Write-** Each scholar will write responses to prompt from activity **C- Collaboration** Students work in groups **O- Organize** Scholars organize thoughts and responses as they work together and response to prompt on activity Critical Reading Process

			Speaking: Students present and defend their mathematical models. **Writing:** Students record the transformation sequence, congruence statements, and written conclusion. **Reading:** Students interpret coordinate planes, transformation descriptions, and mathematical notation. **Listening:** Students follow their partner's explanation, ask questions, and verify the model. **Costa's Levels of Thinking/Questioning:** DOK Level 1: Recall and Identify Identify the preimage and image. Name a rigid transformation. Identify corresponding vertices. Recognize the congruence symbol. DOK Level 2: Apply Skills and Concepts Perform a sequence of rigid transformations. Track vertices using coordinates. Match corresponding sides and angles. Write accurate congruence statements. DOK Level 3: Strategic Thinking Create a mathematical model that demonstrates congruence. Justify why the transformation sequence works. Use coordinate evidence to verify the mapping. Analyze and correct an inaccurate congruence statement. Defend why the order of vertices in a congruence statement matters.			
W E D N E S D A Y	**Standard** (write out)**:** **8.MGSR.3.6** Create a dilation using a given scale factor and describe the effects of transformation Learning Objective **Skill (what), Content (why), Product (how):** Scholars will be able to perform and describe dilations of geometric figures on the coordinate plane, including identifying the scale factor and center of dilation.	**Scholar Starter** Cycle 2 day 3 **#HANGING HASHTAGS#** **Materials:** Hashtag cards with **math vocabulary terms or phrases** #Dilation, #ScaleFactor, #CenterOfDilation, #Coordinates, #Multiply, #ShrinkOrGrow)	***Essential Question*** How can we perform and describe dilations on the coordinate plane using the scale factor and center of dilation? **SStandards Based Materials & Resources:** Video on dilation The teacher models how to do dilation of an image. McGraw Hill text p. 77 to 80 **Content/Academic Vocabulary:** Dilation, scale factor, center of dilation, Enlargement, reduction, image, preimage, coordinate plane, proportional. **ILAP/IEP/504 Scaffolds & Supports:**	Exit Ticket A student claims that a dilation can change both the size and the shape of a figure. Do you agree or disagree? Justify your answer with reasoning and examples. Write a written argument using vocabulary like *proportional, scale factor, shape, angles*. Provide a word bank and sentence starters like:	Students selected at random to respond to the question given in the exit ticket.	Sentence stem and word bank WICOR **W**- Students are asked to **write** the definition or take notes on the hashtags/vocabulary related to dilation **I- Inquiry** The use of questions that deepen thinking (DOK 2 and DOK 3) encourages students to analyze, predict, and explain concepts: **C – Collaboration** Students are encouraged to **discuss their hashtags in small groups or with**

			Real world example of dilation (practical examples) Visual representations Translations of key words in scholars' home language (MLs) Fill in the blank with word bank/ sentence stem(MLs) **<u>Opportunities to SWRL:</u>** **S-** Students discussion in group or partner work **W-** The students will write the response to the prompt in their notebook **R-** Read the coordinates from the preimage and image after reflection. Read the content from text. Also read definitions to hashtags in activating strategy **L-** Listen to pair discussion. **<u>Costa's Levels of Thinking/Questioning:</u>** **Level 1:** What is the scale factor in the given dilation. Did the figure enlarge or reduce to form the image given? **Level 2:** A figure is dilated using a scale factor less than 1. Describe how the image will look compared to the original triangle. How do the side lengths and angles change? **Level 3:** A student claims that a dilation can change both the size and the shape of a figure. Do you agree or disagree? Justify your answer with reasoning and examples. Write a written argument using vocabulary like *proportional, scale factor, shape, angles*.	*agree/disagree because…* *A dilation keeps the shape the same because…*		**partners**, promoting peer interaction and shared reasoning. **O- Organization** The students organize information in their notebook or matching the correct hashtags with definitions **R- Read** Scholars read the definitions to match to the **hashtags/vocabulary** related to dilation Students transition to the **McGraw Hill textbook (p.77 to 80)** to apply the geometric
THURSDAY	**Standard (write out):** 8.MGSR.3.6: Create a dilation using a given scale factor and describe the effect of a dilation. **Learning Objective** ***Skill (what), Content (why), Product (how):*** I can create a dilation using a given scale factor and explain its effect on a figure.	**Scholar Starter: Predict Before You Plot Cycle review** Display triangle A(1,1), B(3,1), C(1,2). Tell scholars it will be dilated about the origin using a scale factor of 2.	**Essential Question** How can I create a dilation and explain what changes and what remains the same? **Standards Based Materials & Resources:** Coordinate-plane mats, rulers, colored pencils, tracing paper, straightedges/string, dilation task cards, recording sheet, interactive board **Content/Academic Vocabulary:** dilation, scale factor, center of dilation, preimage, image, enlargement, reduction, corresponding, similar **Mini-Review: Scale Factor (5 minutes)** • k > 1: enlargement	**Formative Assessment** Use observation, questioning, partner explanations, and student models. Check whether scholars can: • Identify the center and scale factor. • Predict enlargement or reduction.	**Changed or Remained the Same?** Call out each property. Students respond 'changed' or 'remained the same,' then justify to a partner: • size • shape • side lengths • angle measures	**WICOR/AVID** **Writing:** Predictions, coordinate calculations, comparisons, and written justification. **Inquiry:** Investigate which properties change and which remain the same. **Collaboration:** Partners create, verify, and explain dilation models. **Organization:** Color-coded diagrams and

	Success Criteria: • Identify the center of dilation and scale factor. • Determine whether the image is an enlargement or reduction. • Calculate and plot the image coordinates. • Explain what changes and what remains the same.	**Students independently predict:** • Will the image be larger or smaller? • Will it be closer to or farther from the origin? • What will happen to the side lengths? • What will happen to the angle measures? **Turn and Talk:** *Because the scale factor is ___, the image will be a/an ___. I predict ___ will change, but ___ will remain the same.*	• 0 < k < 1: reduction • k = 1: same size *Ask: What can the scale factor tell us before we calculate?* **Teacher Model: Predict, Create, Compare (8 minutes)** • Predict the size and position of the image. • Use (x, y) -> (kx, ky) for a dilation centered at the origin. • Plot and label the image in a second color. • Compare corresponding side lengths and angles. *Emphasize: Side lengths and distances from the center are multiplied by k. Angle measures and orientation remain the same. The figures are similar; they are congruent only when k = 1.* **Conceptual Activity: Dilation Design Studio (22 minutes)** Context: A graphic designer must resize a logo for different products without changing its shape. Pairs receive a coordinate-plane logo, a scale factor, and a center of dilation. • Predict: Decide whether the image will be an enlargement or reduction and whether it will be closer to or farther from the center. • Create: Draw rays from the center through each vertex. Calculate, plot, and label the image coordinates. • Compare: Measure one pair of corresponding sides and angles. Record what changed and what remained the same. • Explain: Partner A explains how the dilation was created. Partner B explains its effect. Switch roles for a second task. *Speaking frame: The scale factor is __, so the image is a/an __. The side lengths __, while the angle measures __.* **Independent Practice (8 minutes)** Students complete one new dilation: predict, calculate image coordinates, plot, compare a corresponding side and angle, and explain the effect. **ILAP/IEP/504 Scaffolds & Supports:** • Use enlarged grids and color-coded corresponding vertices. • Begin with the origin and whole-number scale factors; then use fractions. • Provide a rule card and partially completed coordinate table. • Chunk the task: predict, calculate, plot, explain. • Allow tracing paper, oral rehearsal, extended time, and strategic pairing. • Reduce repetitive problems without removing the explanation requirement. **Opportunities to SWRL:** **Speaking:** Predict and explain the effect of a dilation. **Writing:** Record coordinates, comparisons, and a justification. **Reading:** Interpret scale factors, coordinates, and task directions. **Listening:** Verify a partner's explanation and model. **Costa's Levels of Thinking/Questioning:** **Level 1:** Identify the scale factor, center, enlargement, or reduction.	• Calculate and plot image coordinates accurately. • Describe the effects on side lengths, angles, size, and orientation. • Explain why the figures are similar. **Teacher Questions:** • What does the scale factor tell you before you calculate? • How can you verify that your dilation is accurate? • What changed? What remained the same? • Are the figures similar or congruent? Explain. **Exit Ticket** Triangle A(2,2), B(6,2), C(2,4) is dilated about the origin using k = 1/2. • Determine and plot A', B', and C'. • State whether the image is an enlargement or reduction. • Describe the effect on side lengths and angle measures. • Explain why the figures are similar.	• orientation • distance from the center **Closing Frame:** *A dilation with a scale factor of ___ creates a/an ___. The ___ and ___ remain the same, while the ___ are multiplied by the scale factor.* **Return to the Essential Question:** A mathematical model shows the preimage, image, center, scale factor, and corresponding measurements. It shows that lengths change proportionally while angle measures and shape remain the same.	a predict-create-compare organizer. **Reading:** Interpret scale factors, coordinates, and mathematical directions. **ELL/ELLevation Strategies** • Use gestures and visuals for enlargement and reduction. • Color-code corresponding vertices. • Display a visual word bank. • Allow oral rehearsal before writing. • Use sentence frames and a completed model.

			Level 2: Calculate and plot a dilation; compare corresponding parts. **Level 3:** Justify the model, explain similarity, and correct an inaccurate dilation.			
FRIDAY	**Standard (write out):** 8.MGSR.3.7: Describe the effect of a series of transformations, including dilations, translations, rotations, and reflections, on two-dimensional figures using coordinates on the coordinate plane. **Learning Objective** ***Skill (what), Content (why), Product (how):*** I can apply and describe transformations and explain whether the resulting figures are congruent or similar. **Success Criteria:** • Identify and perform each transformation. • Describe a sequence in the correct order. • Use coordinates to verify a mapping or dilation. • Write congruence or similarity statements. • Explain what changed and what remained the same.	**Scholar Starter: cycle Review** **Which One Does Not Belong?** Display four image/preimage pairs: a translation, rotation, reflection, and dilation. Students choose the pair that does not belong and justify their choice. **Possible reasoning:** The dilation does not belong because it changes size; the rigid transformations preserve size. **Turn and Talk Frame:** *___ does not belong because ___. Unlike ___, it changes/preserves ___.* *Use responses to place scholars on the Foundation, Core, or Challenge pathway. Pathways are flexible, not permanent groups.*	**Essential Question** How can coordinates and transformation properties help me explain whether figures are congruent or similar? **Standards Based Materials & Resources:** Four station task sets, coordinate-plane mats, polygon cutouts, tracing paper, rulers, colored pencils, transformation reference cards, recording sheet, answer-check cards **Content/Academic Vocabulary:** preimage, image, translation, rotation, reflection, dilation, scale factor, rigid transformation, sequence, corresponding, congruent, similar, orientation **Mini-Review: Sort the Properties (5 minutes)** As a class, sort property cards under Rigid Transformations or Dilations: preserves side length, preserves angle measure, may change orientation, changes size proportionally, produces congruent figures, produces similar figures. **Differentiated Transformation Review Lab (32 minutes)** Pairs rotate through four 8-minute stations. Each station has three versions: **Foundation:** color-coded figures, one transformation at a time, rule/word bank, partially completed coordinate table. **Core:** grade-level problems with a two-step sequence and written explanation. **Challenge:** missing transformation, multiple possible sequences, error analysis, or non-origin center of dilation. **Station 1 - Identify and Represent** Match diagrams, coordinate rules, and descriptions for translation, rotation, reflection, and dilation. State what changes and what is preserved. **Station 2 - Move It and Map It** Use a cutout or tracing paper to determine a sequence of rigid transformations. Record the sequence and track one corresponding vertex. **Station 3 - Prove Congruence** Verify that one figure maps exactly onto another. Write one polygon, side, and angle congruence statement; explain why rigid transformations establish congruence. **Station 4 - Dilate and Compare** Create a dilation using a given scale factor. Compare coordinates, a side, and an angle; explain enlargement/reduction and similarity. **Accountable Talk Roles:** **Explainer:** describes the strategy and uses vocabulary. **Verifier:** checks coordinates and asks, 'What is your evidence?'	**Formative Assessment** Use the starter, station recording sheet, questioning, and partner explanations. Check whether scholars can: • Identify and perform all four transformations. • Describe a sequence in order. • Track vertices using coordinates. • Use congruence/similarity statements correctly. • Explain preserved and changed properties. **Individual Exit Ticket** A triangle is reflected across the y-axis, translated 3 units right, and dilated about the origin by k = 1/2. • Describe the effect of each transformation. • Which steps preserve congruence? • Is the final figure congruent or similar to the original? Explain. • Write one correct corresponding-angle statement. *Use exit-ticket evidence to determine reteach, practice, or extension needs for the next lesson.*	**Four Corners: Transformation Review** Label corners Translation, Rotation, Reflection, and Dilation. Read a property or scenario. Students move to the matching corner, discuss, and justify. **Final Written Summary:** *Translations, rotations, and reflections are ___ transformations because they preserve ___. Dilations preserve ___ but change ___ by a scale factor. Therefore, rigid transformations produce ___figures, while dilations with k not equal to 1 produce ___figures.* **Expected terms:** rigid; shape and size; angle measures/shape; side lengths/size; congruent; similar	**WICOR/AVID** **Writing:** Station responses, coordinate work, congruence/similarity statements, and exit-ticket justification. **Inquiry:** Select transformations, test sequences, analyze errors, and justify conclusions. **Collaboration:** Explainer and Verifier roles with accountable talk. **Organization:** Station recording sheet and color-coded transformation models. **Reading:** Interpret diagrams, rules, coordinates, and academic vocabulary. **ELL/ELLevation Strategies** • Use visuals and gestures for slide, turn, flip, enlarge, and reduce. • Provide a bilingual/visual word bank when available. • Use sentence frames and partner rehearsal. • Color-code corresponding vertices and transformation steps.

			Synthesis Task (8 minutes) Students independently analyze a figure transformed by a rigid motion and then a dilation. They describe the sequence, plot the final image, and explain why the final figure is similar rather than congruent when k is not 1. **ILAP/IEP/504 Scaffolds & Supports:** • Assign the appropriate pathway from starter evidence; allow movement between levels. • Use enlarged grids, color-coded vertices, cutouts, tracing paper, and gestures. • Provide transformation rules, vocabulary bank, sentence frames, and chunked directions. • Allow oral rehearsal before writing and extended processing time. • Teacher begins with the Foundation group; use frequent checks for understanding. • Reduce the number of items, not the required reasoning or explanation. • Offer challenge cards only after students demonstrate accurate core understanding. **Opportunities to SWRL:** **Speaking:** Explain, question, and defend a transformation strategy. **Writing:** Record rules, coordinates, statements, and justification. **Reading:** Interpret diagrams, task cards, rules, and notation. **Listening:** Follow a partner's explanation and verify the evidence. **Costa's Levels of Thinking/Questioning:** **Level 1:** Name the transformation and identify image/preimage. **Level 2:** Perform transformations and compare corresponding parts. **Level 3:** Justify congruence/similarity, analyze errors, and create an alternate sequence.			