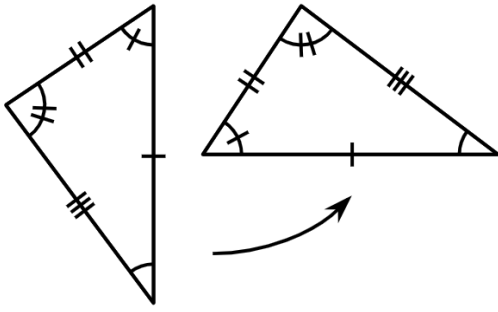
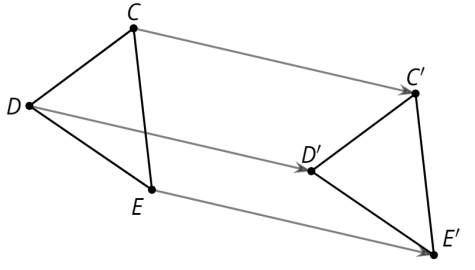
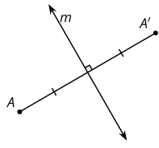
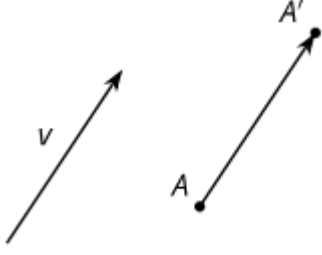
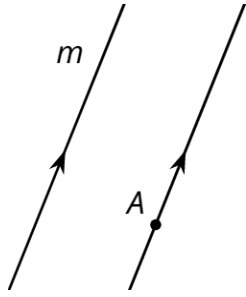
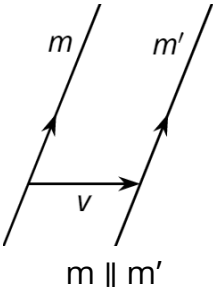
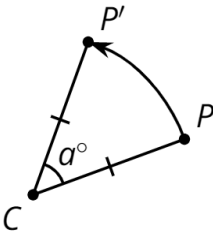
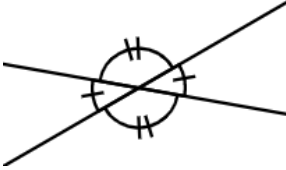
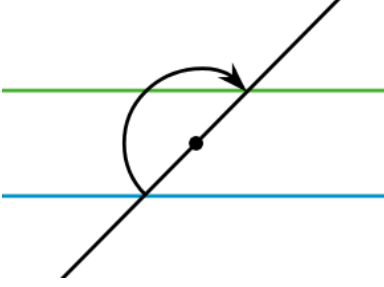
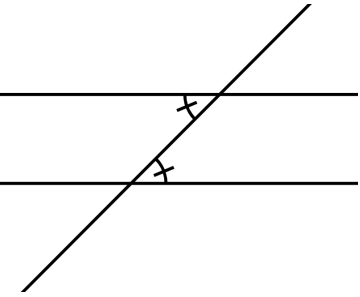
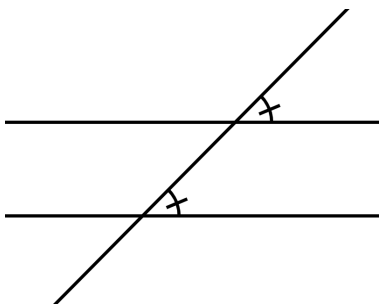
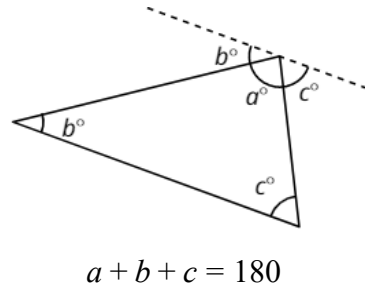
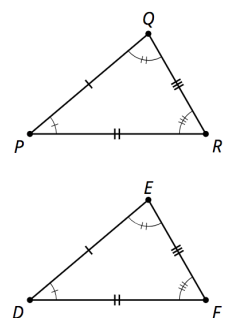
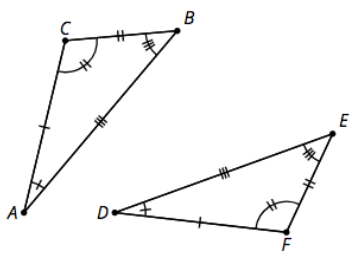
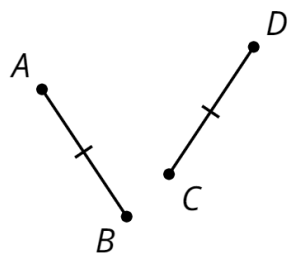
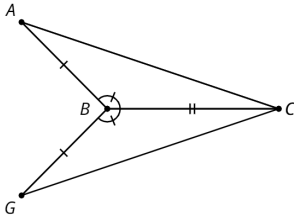
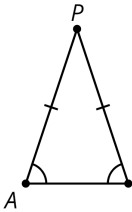
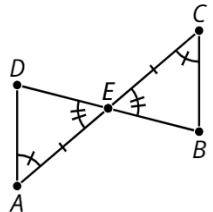
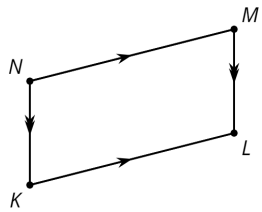
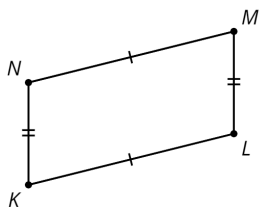
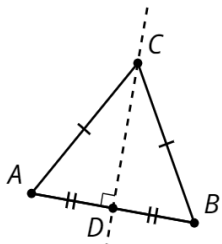
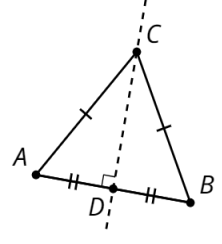
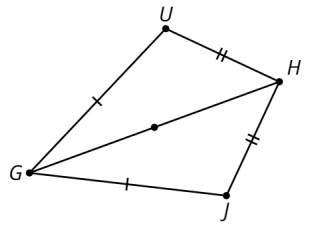
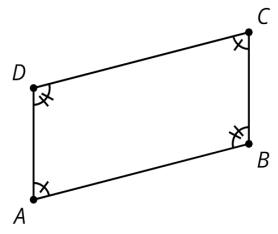
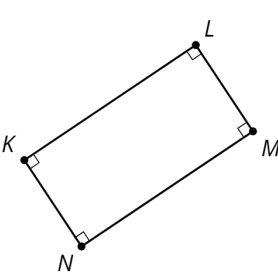


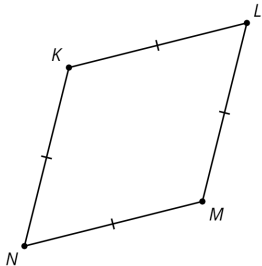
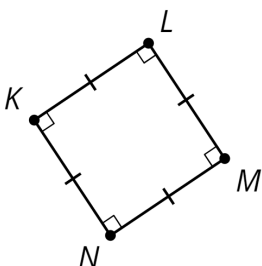
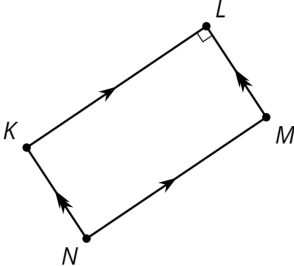
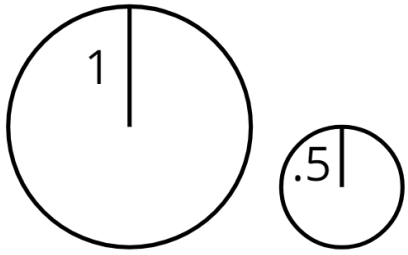
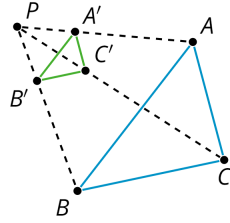
| Lesson, Type | Statement | Diagram |
|---|---|--|
| U1, L10 (students will write the date) Assert | <p>A rigid transformation is a translation, reflection, rotation, or any sequence of the three.</p> <p>Rigid transformations take lines to lines, angles to angles of the same measure, and segments to segments of the same length.</p> |  |
| U1, L10 Def'n | <p>One figure is congruent to another if there is a sequence of translations, rotations, and reflections that takes the first figure exactly onto the second figure.</p> <p>The second figure is called the image of the rigid transformation.</p> |  <p>$\triangle EDC \cong \triangle E'D'C'$</p> |
| U1, L11 Def'n | <p>Reflection is a rigid transformation that takes a point to another point that is the same distance from the given line, is on the other side of the given line, and so that the segment from the original point to the image is perpendicular to the given line.</p> <p>Reflect <u>(object)</u> across line <u>(name)</u>.</p> |  <p>Reflect A across line m.</p> |
| U1, L12 Def'n | <p>Translation is a rigid transformation that takes a point to another point so that the directed line segment from the original point to the image is parallel to the given line segment and has the same length and direction.</p> <p>Translate <u>(object)</u> by the directed line segment <u>(name or from [point] to [point])</u>.</p> |  <p>Translate A by the directed line segment v.</p> |
| U1, L12 Assert | <p>Parallel Postulate: Given a line (m) and a point (A) that is not on m, there is exactly one line that goes through A that is parallel to m.</p> |  |

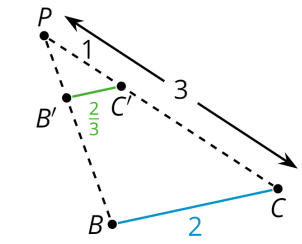
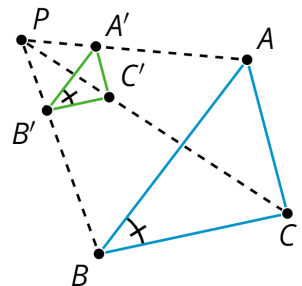
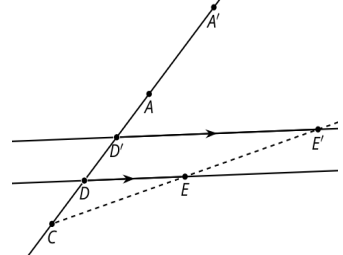
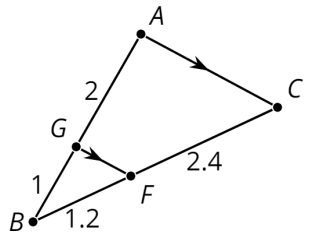
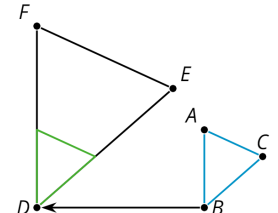
| Lesson, Type | Statement | Diagram |
|-------------------|--|---|
| U1, L12 Thm | Translations take lines to parallel lines or to themselves. |  <p>The diagram shows two parallel lines, m and m', with arrows indicating they are parallel ($m \parallel m'$). A horizontal vector v with arrows at both ends connects a point on line m to a corresponding point on line m'.</p> |
| U1, L14 Def'n | <p>Rotation is a rigid transformation that takes a point to another point on the circle through the original point with the given center. The two radii to the original point and the image make the given angle.</p> <p>Rotate <u>(object)</u> (clockwise or counterclockwise) by <u>(angle or angle measure)</u> using center <u>(point)</u>.</p> |  <p>The diagram shows a center point C. Two radii, CP and CP', are drawn. An arc between them indicates a rotation by an angle of a°. Tick marks on the radii indicate they are congruent.</p> <p>Rotate P counterclockwise by a° using center C.</p> |
| U1, L19 Thm | Vertical angles are congruent. |  <p>The diagram shows two intersecting lines forming four angles. The two vertical angles are each marked with a single arc, indicating they are congruent.</p> |
| U1, L20 Assert | Rotation by 180 degrees takes lines to parallel lines or to themselves. |  <p>The diagram shows two horizontal parallel lines, one green and one blue. A transversal line intersects both. A 180-degree rotation is indicated by a curved arrow around a point on the transversal, showing that the transversal maps to itself.</p> |
| U1, L20 Thm | <p>Alternate Interior Angle Theorem: If two parallel lines are cut by a transversal, then alternate interior angles are congruent.</p> <p>Conversely, if two lines are cut by a transversal and alternate interior angles are congruent, then the lines have to be parallel.</p> |  <p>The diagram shows two horizontal parallel lines intersected by a transversal. Two alternate interior angles are each marked with a single arc, indicating they are congruent.</p> |

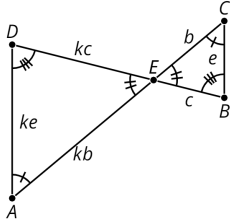
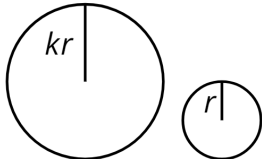
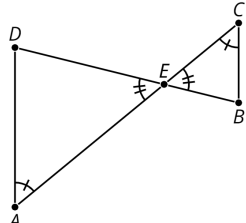
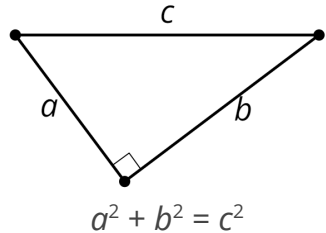
| Lesson, Type | Statement | Diagram |
|--------------------|--|--|
| U1, L20 Thm | <p>Corresponding Angle Theorem: If two parallel lines are cut by a transversal, then corresponding angles are congruent.</p> <p>Conversely, if two lines are cut by a transversal and corresponding angles are congruent, then the lines have to be parallel.</p> |  |
| U1, L21 Thm | <p>Triangle Angle Sum Theorem: The three angle measures of any triangle always sum to 180 degrees.</p> |  $a + b + c = 180$ |
| U2, L1 Thm | <p>If two figures are congruent then corresponding parts of those figures must be congruent</p> |  <p>$\triangle PQR \cong \triangle DEF$ so $PQ=DE$, $PR=DF$, $QR=EF$, $\angle P \cong \angle D$, $\angle Q \cong \angle E$, $\angle R \cong \angle F$</p> |
| U2, L3 Thm | <p>If all pairs of corresponding sides and all pairs of corresponding angles are congruent, then the triangles must be congruent.</p> |  <p>$AB=DE$, $BC=EF$, $CA=FD$, $\angle B \cong \angle E$, $\angle A \cong \angle D$, $\angle C \cong \angle F$ so, $\triangle ABC \cong \triangle DEF$</p> |
| U2, L5 Thm | <p>If two segments have the same length, then they are congruent.</p> |  <p>$AB \cong CD$</p> |

| Lesson, Type | Statement | Diagram |
|-----------------|---|---|
| U2, L6 Thm | SAS Triangle Congruence: In two triangles, if two pairs of congruent corresponding sides and the pair of corresponding angles between the sides are congruent, then the two triangles are congruent. |  <p>$AB=GB$, $BC=BC$, $\angle ABC \cong \angle GBC$ so $\triangle ABC \cong \triangle GBC$</p> |
| U2, L6 Thm | Isosceles Triangle Theorem: In an isosceles triangle, the base angles are congruent. |  <p>$AP=PB$ so $\angle A \cong \angle B$</p> |
| U2, L7 Thm | ASA Triangle Congruence: In two triangles, if two pairs of corresponding angles, and the pair of corresponding sides between the angles, are congruent, then the triangles must be congruent. |  <p>$\angle A \cong \angle C$, $AE=EC$, $\angle DEA \cong \angle BEC$, so $\triangle DEA \cong \triangle BEC$</p> |
| U2, L7 Def'n | A parallelogram is a quadrilateral with two pairs of opposite sides parallel. |  <p>$NM \parallel KL$, $NK \parallel ML$, so MNKL is a parallelogram</p> |
| U2, L7 Thm | In a parallelogram, pairs of opposite sides are congruent. |  <p>MNKL is a parallelogram, so $NM=KL$, $NK=ML$</p> |

| Lesson, Type | Statement | Diagram |
|------------------|--|---|
| U2, L8 Thm | If a point C is the same distance from A as it is from B, then C must be on the perpendicular bisector of AB. |  <p>$AC=BC, AD=BD, \text{ so } DC \perp AB$</p> |
| U2, L8 Thm | If C is a point on the perpendicular bisector of AB, the distance from C to A is the same as the distance from C to B. |  <p>$AB \perp CD, AD=BD, \text{ so } AC=BC$</p> |
| U2, L9 Thm | SSS Triangle Congruence: In two triangles, if all three pairs of corresponding sides are congruent, then the triangles must be congruent. |  <p>$HU=HJ, UG=JG, HG=HG \text{ so, } \triangle HUG = \triangle HJG$</p> |
| U2, L9 Thm | In a parallelogram, opposite angles are congruent. |  <p>$ABCD \text{ is a parallelogram so, } \angle A \cong \angle C, \angle D \cong \angle B$</p> |
| U2, L12 Def'n | A rectangle is a quadrilateral with four right angles. |  |

| Lesson, Type | Statement | Diagram |
|------------------|--|--|
| U2, L12 Def'n | A rhombus is a quadrilateral with four congruent sides. |  |
| U2, L11 Def'n | A square is a quadrilateral with four congruent sides and four right angles. |  |
| U2, L12 Thm | If a parallelogram has (at least) one right angle, then it is a rectangle. |  |
| U3, L1 Def'n | Scale factor is the factor by which every length in an original figure is multiplied when you make a scaled copy. |  <p>Scale factor is 2 or $\frac{1}{2}$</p> |
| U3, L3 Def'n | A dilation with center P and positive scale factor k takes a point A along the ray PA to another point whose distance is k times further away from P than A is. Dilate <u>(object)</u> using center <u>(point)</u> and a scale factor of <u>(number)</u> . |  <p>$PA' = k \cdot PA$</p> |

| Lesson, Type | Statement | Diagram |
|------------------|--|---|
| U3, L3 Assert | The dilation of a line segment is longer or shorter in the ratio given by the scale factor. |  <p>$PC:PC' = 3:1, BC:B'C' = 2:\frac{2}{3}$</p> |
| U3, L4 Assert | Corresponding angles of the original figure and the dilated image are congruent. |  |
| U3, L4 Thm | A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. |  <p>Dilate using center C, so $DE \parallel D'E'$</p> |
| U3, L5 Thm | If a line divides two sides of a triangle proportionally, the line must be parallel to the third side of the triangle. |  <p>$\frac{1}{2} = \frac{1.2}{2.4}$ so $AC \parallel GF$</p> |
| U3, L6 Def'n | One figure is similar to another if there is a sequence of rigid transformations and dilations that takes the first figure so that it fits exactly over the second. |  <p>Translation and dilation takes $\triangle ABC$ onto $\triangle DEF$ so $\triangle ABC \sim \triangle DEF$</p> |

| Lesson, Type | Statement | Diagram |
|-----------------|---|---|
| U3, L7 Thm | If two triangles have all pairs of corresponding angles congruent and all pairs of corresponding side lengths in the same proportion, then the two triangles are similar. |  <p> $\angle A \cong \angle C$, $\angle D \cong \angle B$, $\angle DEA \cong \angle BEC$, $\frac{AD}{CB} = \frac{DE}{BE} = \frac{EA}{EC}$ so $\triangle DEA \sim \triangle BEC$ </p> |
| U3, L8 Thm | All circles are similar. |  |
| U3, L9 Thm | AA Triangle Similarity: In two triangles, if two pairs of corresponding angles are congruent, then the triangles must be similar. |  <p> $\angle A \cong \angle C$, $\angle DEA \cong \angle BEC$, so $\triangle DEA \sim \triangle BEC$ </p> |
| U3, L14 Thm | Pythagorean Theorem: If a right triangle has legs a and b and hypotenuse c , then $a^2 + b^2 = c^2$. |  <p>$a^2 + b^2 = c^2$</p> |
| | | |