

Compositions of Transformations

Carousel Activity

[Group - 25 minutes total; Presentation – 10 minutes]

Station 1

Given  $\triangle TRY$  with vertices  $T(-2, 3)$ ,  $R(3, 6)$ ,  $Y(1, -1)$

a) Perform the composition of transformations  $r_{x\text{-axis}} \circ R_{90^\circ}$

b) State the single transformation equivalent to the above composition of transformations

Station 2

Given  $\triangle CAT$  with vertices  $C(-5, 3)$ ,  $A(2, 6)$ ,  $T(7, 1)$

a) Perform the composition of transformations  $R_{90^\circ} \circ r_{y=x}$

b) State the single transformation equivalent to the above composition of transformations

Station 3

Given  $\triangle DOG$  with vertices  $D(1, 2)$ ,  $O(5, 7)$ ,  $G(8, 4)$

a) Perform the composition of transformations  $r_{x\text{-axis}} \circ r_{y=x}$

b) State the single transformation equivalent to the above composition of transformations

Station 4

Given  $\triangle ELF$  with vertices  $E(1, -5)$ ,  $L(6, -4)$ ,  $F(3, -1)$

a) Perform the composition of transformations  $R_{180^\circ} \circ R_{270^\circ}$

b) State the single transformation equivalent to the above composition of transformations

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Instructions per station

Round 1: List the order of transformations to be performed [2 minutes]

Round 2: Perform the first transformation. Graph and state the coordinates  
[8 minutes]

Round 3: Perform the second transformation. Graph and state the coordinates  
[8 minutes]

Round 4: Analyze the coordinates of the pre-image, and the final image. Name the single transformation that is equivalent to the composition  
[5 minutes]

## Carousel Activity

# Composition of Transformations

Group Members: \_\_\_\_\_  
\_\_\_\_\_



Problem 1:

**Perform the composition of transformations  $r_{x\text{-axis}}$   $\circ R_{90^\circ}$  on  $\triangle TRY$  with vertices  $T(-2, 3)$ ,  $R(3, 6)$ ,  $Y(1, -1)$**

**Round 1: List the order of transformations to be performed** [2 minutes]

1<sup>st</sup> Transformation:

2<sup>nd</sup> Transformation:

**Round 2: Perform the first transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 3: Perform the second transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 4: Analyze the coordinates of the pre-image, and the final image.  
Name the single transformation that is equivalent to the composition** [5 minutes]

Single Transformation:

## Carousel Activity

# Composition of Transformations

Group Members: \_\_\_\_\_  
\_\_\_\_\_



Problem 2:

**Perform the composition of transformations  $R_{90^\circ} \circ T_{y=x}$  on  $\triangle CAT$  with vertices  $C(-5, 3)$ ,  $A(2, 6)$ ,  $T(7, 1)$**

**Round 1: List the order of transformations to be performed** [2 minutes]

1<sup>st</sup> Transformation:

2<sup>nd</sup> Transformation:

**Round 2: Perform the first transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 3: Perform the second transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 4: Analyze the coordinates of the pre-image, and the final image.  
Name the single transformation that is equivalent to the composition** [5 minutes]

Single Transformation:

## Carousel Activity

# Composition of Transformations

Group Members: \_\_\_\_\_  
\_\_\_\_\_



Problem 3:

**Perform the composition of transformations  $r_{x\text{-axis}}$   $\circ$   $r_{y=x}$  on  $\triangle DOG$  with vertices  $D(1, 2)$ ,  $O(5, 7)$ ,  $G(8, 4)$**

**Round 1: List the order of transformations to be performed** [2 minutes]

1 <sup>st</sup> Transformation:	2 <sup>nd</sup> Transformation:
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**Round 2: Perform the first transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 3: Perform the second transformation. Graph and state the coordinates** [8 minutes]

Show work and state the coordinates on the construction paper

**Round 4: Analyze the coordinates of the pre-image, and the final image.  
Name the single transformation that is equivalent to the composition** [5 minutes]

Single Transformation:

## Carousel Activity

# Composition of Transformations

Group Members: \_\_\_\_\_  
\_\_\_\_\_



Problem 4:

**Perform the composition of transformations  $R_{180^\circ} \circ R_{270^\circ}$  on  $\triangle ELF$  with vertices  $E(1, -5)$ ,  $L(6, -4)$ ,  $F(3, -1)$**

**Round 1: List the order of transformations to be performed** [2 minutes]

1<sup>st</sup> Transformation:

2<sup>nd</sup> Transformation:

**Round 2: Perform the first transformation. Graph and state the coordinates**  
[8 minutes]

Show work and state the coordinates on the construction paper

**Round 3: Perform the second transformation. Graph and state the coordinates**  
[8 minutes]

Show work and state the coordinates on the construction paper

**Round 4: Analyze the coordinates of the pre-image, and the final image.  
Name the single transformation that is equivalent to the composition**  
[5 minutes]

Single Transformation: