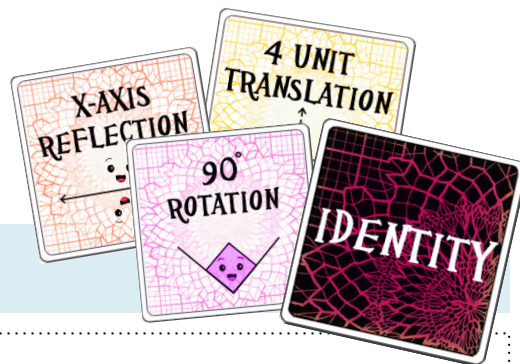


# IDENTITY



## Strands:

Number & Operations	
Algebra	
Functions	
Geometry	X
Statistics & Probability	

In this exciting game of Transformations, can you get back to the Identity?

### Set-Up:

- Choose game pieces and pass out coordinate planes, one to each player.
- Shuffle the deck and deal five cards to each player. Place remaining cards to the side. (3-6 players)
- Player on the dealer's left picks a point on the plane. This is the Identity. Mark the Identity on your coordinate plane with a pencil.
- Place your game piece on the Identity. This is where every player starts.

**Object of the Game:** Explore how transformations and the order they are used effects the location of your game piece when compared to the Identity.

### Playing the Game:

1. Pick one card from your hand that helps keep your game piece closest to the Identity. Place this card face down.
2. When everyone is ready, pass your remaining cards to the person on your left.
3. Flip over your chosen card.
4. REPEAT steps 1, 2, and 3 until all cards have been chosen.
5. Determine the order you will play your cards. Demonstrate moving your piece from the Identity using your cards in your chosen order.

**To Win:** The player whose game piece is closest to the Identity in the end wins. You must explain each transformation you make to win.

## Materials:



- Deck of Identity cards
- Game pieces
- Coordinate plane, one per player
- Pencil, one per player
- Optional: Page protector, dry erase marker, and eraser, one per player



### Think About It:

- What techniques do you want to remember to help you win the game?
- What transformations can undo another?
- How does the location of the Identity affect play? Try picking a point on one of the lines from a reflection card and another point that doesn't lie on one of these lines.

### Variations:

**Individual/2-Player:** Pick an Identity point. Shuffle and turn over 3 to 5 cards. Work together to figure out the order the transformations should be played to end up closest to the Identity.

**Secret Cards:** Instead of showing your cards during card selection and passing, keep your cards hidden until you demonstrate use of them.

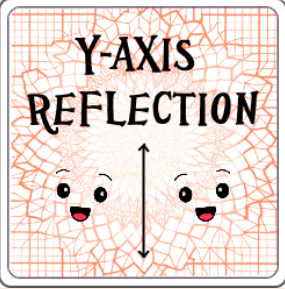

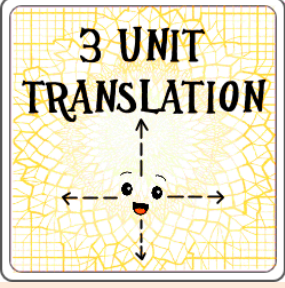
**Choose the Center of Rotation:** Instead of using the origin as the center of each rotation, you can choose the center of rotation when you play a rotation card. You must specify the center of rotation when demonstrating the rotation with your game piece.

## Where:

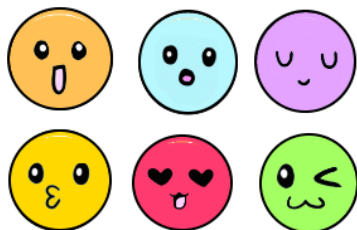
Outside	X
Inside	X
On-line	
On-site	



## Types of Cards:

Card	Number in Deck	Description
	12	<p><b>Reflection Cards:</b> The cards are reflections across the following:</p> <ul style="list-style-type: none"> <li>• The y-axis</li> <li>• The x-axis</li> <li>• The line <math>y = x</math></li> <li>• The line <math>y = -x</math>.</li> </ul>
	12	<p><b>Rotation Cards:</b> The cards are rotations of the following degrees:</p> <ul style="list-style-type: none"> <li>• 90</li> <li>• 180</li> <li>• 270</li> </ul> <p>For rotation cards, you can move clockwise or counterclockwise.</p>
	24	<p><b>Translation Cards:</b> The cards are translations of 1, 2, 3, 4, 5, or 6 units. For translation cards, you can only move in one direction: up or down, left or right.</p>

## Player Pieces:



## Extras:

