Linear Telestrations

Work as a team to represent linear equations using graphs, tables, and problems in context.

Strands:

Number & Quantity	
Algebra	X
Functions	X
Geometry	
Statistics & Probability	

Materials Needed:
- Scrap paper, stapled into 5-page booklets, at least 2 per player
- *Linear Telestrations Representation Cycle* cards, 1 per player
- Pencil, 1 per player
- *Ugly Functions* Linear Cards
- Paper clips, at least 2 per player

Where:

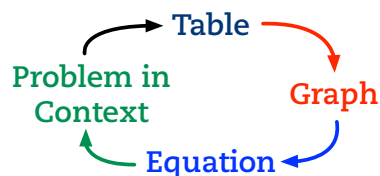|	
Outside	
Inside	X
On-line	
On-site	

Set-Up:
- Play in teams of 4 players each.
- Organize *Ugly Functions* Linear cards by representation.
- Round 1: Make a recording booklet for each player with an *Ugly Functions* Linear table card paper clipped inside the first page.
- Round 2: Choose a second type of representation. Make a second set of booklets using this representation.
- For each round, open each recording booklet to the first blank page. Give each player an open booklet.

Object of the Game: Accurately represent linear functions using equations, graphs, and tables, and creatively represent linear functions with problems in context.

Playing the Game:
Each player performs the following steps simultaneously:
1. a. Look at the representation on the previous page of the recording booklet.
   b. On the open page (as the booklet was passed to you), draw the next representation shown in the cycle below:

   The representation is always based on the previous page in the booklet.
   c. Flip to the next blank page and pass the booklet to your left.
2. Repeat Step 1 until the booklet returns to the player who drew the first representation.
3. Once the booklet you started is back to you, go through the booklet to check if each representation matches the function represented on the card.
4. Share the representations and how you know they are correct or incorrect. Discuss what is still needed, if anything, in each of the representations.
5. Replay with new booklets and another *Ugly Functions* Linear card in each.

Think About It:
1. Which representation was the most challenging to create? Why? What help do you need to feel more comfortable with this representation?
2. Which representation was the easiest to create? Why?
3. What strategies did you use to create a graph?
4. How are the points on the graph related to the table?

Variations:

Smaller Group Play: Play with fewer than 4 players. Each player creates more than one of the representations.

Team Play: Make teams of players and compete. Each booklet that has all 4 representations created correctly earns the team 1 point.

Different Order: Reorder the representations and play again.

Different Representations: Make as many booklets as players using different representations from the *Ugly Functions* Linear cards. Open each booklet to the first blank page. Pass a booklet to each player. Play as above.