Logarithmic Graphs
2.1.16
Springboard 23.3

Warm-up
Rewrite in logarithmic form
1) $y^3 = 27$
2) $4^a = c$
3) $2^3 = 8$
4) $4^3 = x$

Parent Graph
$y = log_b x$

I Try:
Graph $y = log_3 x$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Connect points and finish graph.	

We Try:

Graph $y = log_5 x$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Connect points and finish graph.	

You try with your partner:

Graph $y = log_3 x$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Connect points and finish graph.	

Graphing with transformations.

$$y = a\ log_b(x - h) + k$$

I Try:

Graph $y = log_3(x + 2) - 3$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Apply transformations	
Connect dots and finish graph.	

We Try:

Graph $y = log_2(x - 2) - 1$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Apply transformations	
Connect dots and finish graph.	

You Try:

Graph $y = log_3(x - 1) + 2$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Apply transformations	
Connect dots and finish graph.	

You Try:

Graph $y = log_2(x - 2) + 3$

Identify b	
Plot the 3 points $\left(\frac{1}{b}, -1\right), (1,0), (b, 1)$	
Apply transformations	
Connect dots and finish graph.	

Exit Ticket

Graph $y = log_2(x - 1) + 2$

Graph the parent function.

Identify the transformations:

Horizontal shift.

Vertical shift