ALL LEARNERS NETWORK

Grade Eight HLC Learning Progressions - DRAFT
(Linear Relationships)

Linear Relationships

Grade Eight Linear Relationships HLC

Understand linear relationships using contexts, tables, graphs and equations. Make connections among representations of linear relationships.

September → **Grade Eight (LR) Learning Progressions** → June

Students must use visual representations to build understanding along this trajectory and interact with a variety of linear contexts.
Be VERY cautious of introducing algorithms before conceptual understanding is SOLID

Critical Strategies: Finding the rate of change between two quantities (x and y) and the vertical intercept or initial value

Verbal (in context)	**Tables**	**Graphs**	**Equations**
At Monster Ski Mountain, the cost for a Bash Badge is $100. Once you purchase a badge, you then pay $20 for each day you ski. **Initial Value** (Starting cost/out of pocket) = $100 **Rate of Change**= $20 for every ticket you purchase. (an increase of $20 for every 1 ticket) ***Note:** the vocabulary **"initial value"** & **"rate of change"** comes directly from Common Core*	**Initial Value** of **100** (when x is 0, y is 100) $\Delta x=+4$ / $\Delta y=+80$ **Rate of Change** An increase of 80 for every 4 x's = an increase of 20 for every 1 x ⬇️ $\frac{\Delta y}{\Delta x} = \frac{80}{4} = \frac{20}{1}$	**Initial Value** of **100** is found when x=0, **on the y-axis** **Rate of Change** For every 3 x's, y increases by 60 so... **For every 1 x, y increases by 20**	Even when x is 0, you still will have to pay $100 so your **Initial Value** is **100** $y = 20x + 100$ For every 1x, y increases by 20 ... So your **Rate of Change** is 20

# of tickets (x)	Total Cost in dollars (y)
0	100
1	120
2	140
5	200
12	240