Skill Check List

As you are working through this unit, these are the skills that you should already have or are working on. Check back to this list often and check them off as you feel you have mastered them (do them successfully 95% of the time).

8.PR.1 Graph and analyze 2-variable linear relations.

- Substitution and evaluation of expressions and equations
- Add, subtract, multiply and divide integers
- Apply the order of operations
- Plot points on a co-ordinate grid
- Determine the x- and y-value from a point on a co-ordinate grid

- Create a table of values for the equation of a linear relation
- Construct a graph from the equation of a linear relation
- Describe the relationship between the variables of a graph using words
- Describe the relationship between the variables of a graph using an expression or equation

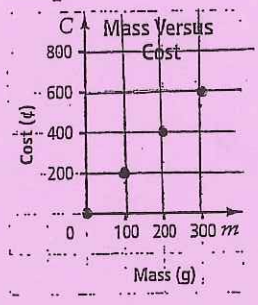
Linear Relations

- a linear relation is a pattern made by a set of points that lie in a straight line.

- The following are some ways that you can represent a linear relation.
  - Table of values:

Mass, m (g)	0	100	200	300
Cost, C (¢)	0	200	400	600

  - Words: The cost in cents is 2 times the mass in grams.
  - Ordered pair: $(m, 2m)$
  - Expression: The cost in cents is $2m$, where m is the mass in grams.
  - Graph:



- You can sometimes tell from a table whether the relationship is linear.

Table 1

p	2	3	4	5
q	7	13	19	25

(+1, +1, +1 over the p row; +6, +6, +6 over the q row)

Table 2

p	q
20	31
40	27
60	23
80	19

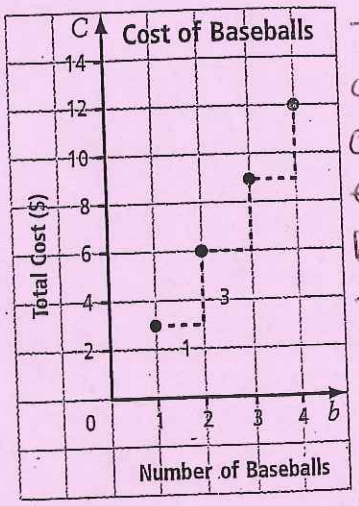
(+20, +20, +20 over the p column; -4, -4, -4 over the q column)

You can tell that the relationships in the above tables are linear because both of the following statements are true:

- Each consecutive value for p changes by the same amount.
- Each consecutive value for q changes by the same amount.

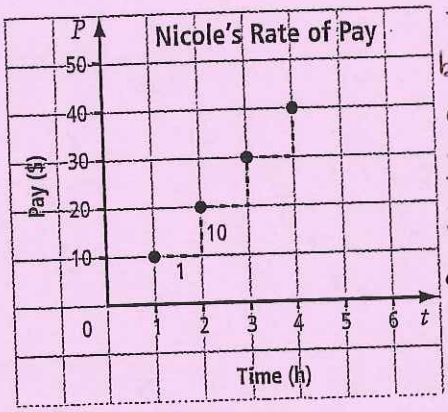
- You can describe a pattern by stating where it starts, what it relates and how it changes

Ex 1)



This graph starts at one baseball costing $3. For every additional ball bought, the total cost goes up by $3.

Ex 2)



This graph begins with Nicole getting $10 for 1 hour of work. She gets an additional $10 for every hour worked beyond that.

- Sometimes you will be asked if it makes sense to have points between the ones shown on the graph. Sometimes it does, and sometimes it doesn't.

  Ex 1 → it wouldn't make sense because you can't buy part of a ball

  Ex 2 → It would make sense because you can work part of an hour.