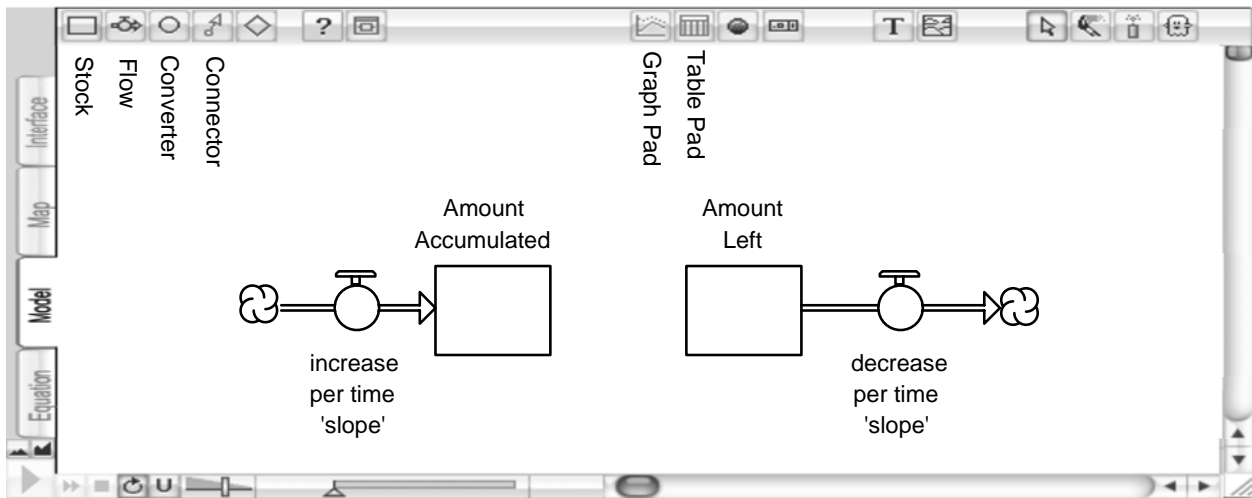




Visualizing Math with STELLA: Linear Functions



The stock  represents the main idea of the model, the variable whose quantity increases or decreases over time. The flow  can be drawn with the arrow pointing toward the stock or away from the stock. The flow represents something that causes the stock value to increase (inflow) or decrease (outflow)

A Linear Model

1. Consider a boy, Victor, who earns \$10 a week for doing chores around the house. He already has \$50 from his grandmother as a gift for his birthday. He stores his money in a shoebox in his room. He is saving for an iPod nano (\$150), so he will not spend any of his money until he has enough to buy the iPod.

What is the main idea (variable) of the model (whose quantity will increase or decrease over time)? _____

Will this quantity increase or decrease over time? _____ So will we need an (inflow or outflow)?

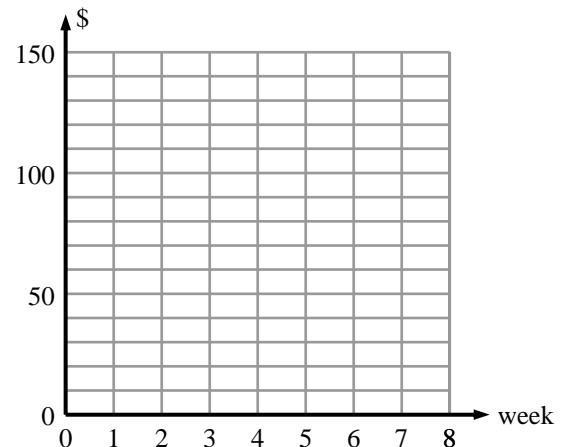
Draw the model diagram here. Be sure to label each icon and place the correct value/formula in each icon.



Now let's create a table of values for this situation.

Week	\$ in shoebox
0	50.00
1	
2	
3	
4	
5	
6	
7	
8	

Finally, graph the amount of money Victor has each week for 8 weeks.



How many more weeks does he have to save to be able to buy his iPod? _____

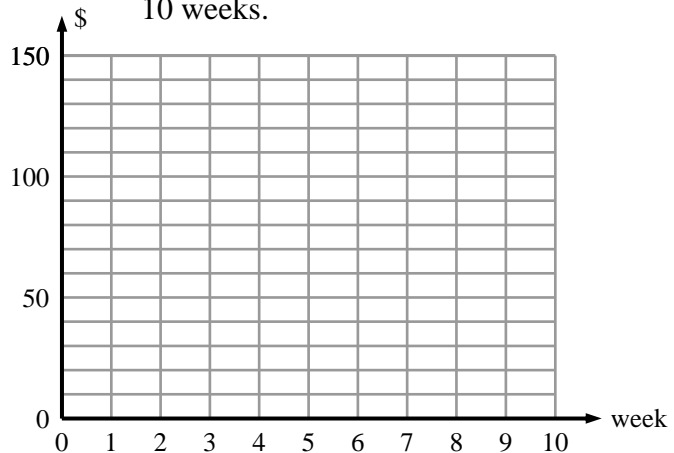
2. James really likes Victor's new iPod so he decides he will try to save money to buy one for himself. Over the summer he had a lawn mowing job and was able to earn \$50, which he placed in a shoebox in his room. He also had an allowance during the school year paying \$10 per week for doing chores around the house. But James cannot seem to just save his money. He spends \$4 per week on candy. Draw the diagram that best describes this situation. Be sure to label each icon and place the correct value/formula in each icon.



Let's create a table of values for this situation.

Week	\$ in	\$ out	\$ in shoebox
0	0	0	50.00
1	10	4	
2			
3			
4			
5			
6			
7			
8			
9			
10			

Again, graph the amount of money James has each week for 10 weeks.



How much longer will it take James to earn enough money for his iPod, than it took Victor? _____

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