

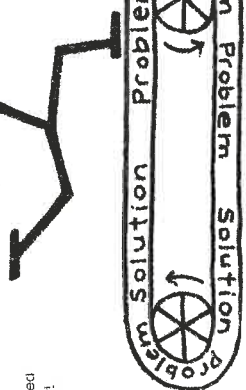
S.T.O.P. Systems Thinking Opens Possibilities

for Systems Understanding and Sustainable Change

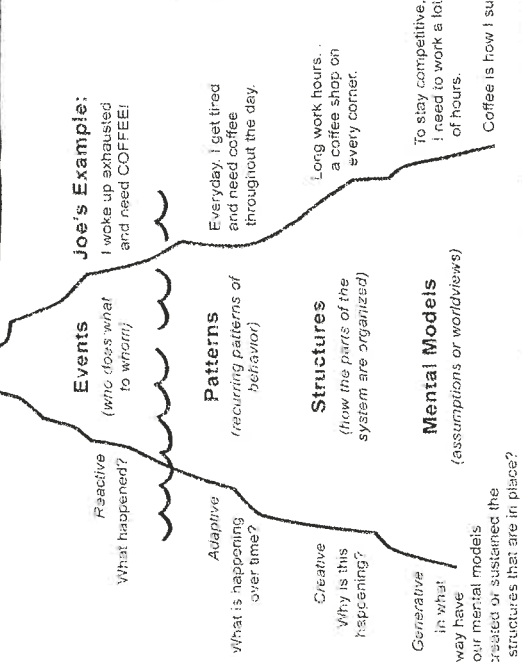
Sample Story

The Coffee Crunch. Having overslept, Joe grabs a cup of coffee for breakfast as he sprints out the door for work. By midmorning his energy slumps causing him to drink another cup of coffee. At lunchtime, as coworkers leave for their daily walk, Joe heads to the vending machine for a candy bar and soda. During his midafternoon meeting, Joe feels sleepy. He goes to the latte stand and, thinking about the work he'll need to do that night, orders a triple shot latte. This keeps him alert for the evening but makes it hard to go to sleep and causes him to be even more tired the next morning. Poor Joe seems to be trapped in a cycle and doesn't know how to break it!

How do I get off this thing?



Iceberg Model

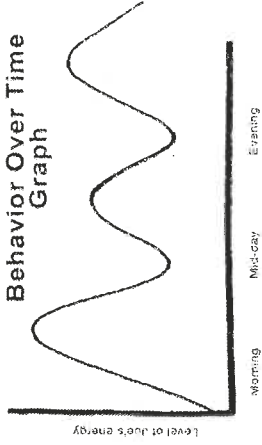
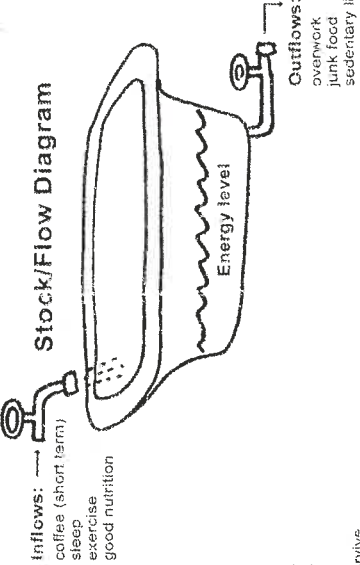


Joe's Example:
I woke up exhausted and need COFFEE!
Everyday, I get tired and need coffee throughout the day.
Long work hours... a coffee shop on every corner.
To stay competitive, I need to work a lot of hours.
Coffee is how I survive.

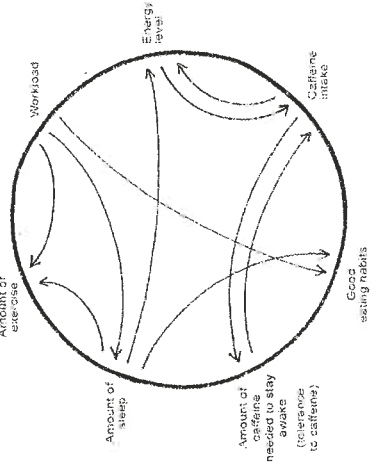
Systems Analysis in Six Steps

1. Tell the story
2. Name the variables
3. Determine the system boundaries
4. Sketch the trends
 - behavior over time graphs
5. Make the system visible
 - connection circles
 - causal loop diagrams
 - stock / flow diagrams
6. Share and look for leverage

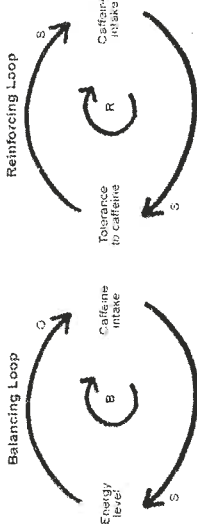
Joe's body



Connection Circle



Causal Loop Diagram

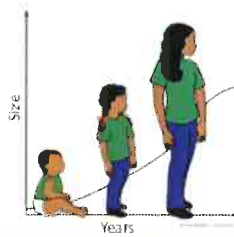


Adapted from: Sweeney, L. B. (2001). *When a butterfly sneezes: A guide for helping kids explore interconnections in our world through favorite stories*. Welham, MA: Pegasus Communications, Inc.

Seeks to understand the big picture



Observes how elements within systems change over time, generating patterns and trends



Recognizes that a system's structure generates its behavior



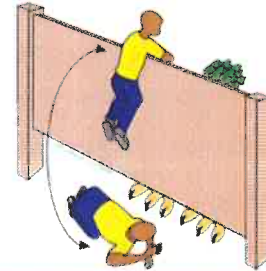
Identifies the circular nature of complex cause and effect relationships



Makes meaningful connections within and between systems



Changes perspectives to increase understanding



Surfaces and tests assumptions



Habits of a Systems Thinker



Considers an issue fully and resists the urge to come to a quick conclusion



Considers how mental models affect current reality and the future



Uses understanding of system structure to identify possible leverage actions



Considers short-term, long-term and unintended consequences of actions



Pays attention to accumulations and their rates of change



Recognizes the impact of time delays when exploring cause and effect relationships



Checks results and changes actions if needed: "successive approximation"

