## Visual Mapping Inductive, Deductive and Abductive Reasoning

Inductive reasoning moves from specific instances into a generalized conclusion (bottom up), while deductive reasoning moves from generalized principles that are known to be true to a true to provide direction with specific instances (top down). Abductive reasoning usually starts with an incomplete set of observations and proceeds to the likeliest possible explanation for the group of observations. We will focus on inductive and deductive reasoning.

Lets keep it simple with an example. We will use a Tree Map for Classification to model. This map can be created 'top down' or 'bottom up':

- Top down requires starting with the top categories to sort the things and/or ideas being categorized.
- Bottom up starts with the things and/or ideas being categorized being sorted into similar categories, then determining the top categories.

Both have a purpose:

- Doing it from 'bottom up' requires thinking what are the connections and patterns are of the things and/or ideas being categorized, and from that determining what the top categories are. In small groups this increases the level of discussion in regards to synthesizing information and comprehending connections.
- Doing it from the 'top down' begins with and follows a predetermined design and order to sort the different things and/or ideas to be categorized. This assumes everyone has the same frame for categorizing.

While the different processes are modeled on the opposite page for a Sorting for Classifications Map, this process is applicable for ALL visual maps, and all explorations of things and ideas.

## Inductive Mapping

$\underset{\text { Ideas }}{\text { Brainstorming the }} \rightarrow$
Sorting by

Category $\quad \longrightarrow \quad$| Category |
| :--- |
| Headings |



| idea 2 | idea 1 |
| :--- | :--- |
| idea 3 | idea 4 |
| idea 5 | idea 6 |
| idea 7 | idea 8 |
|  | idea 9 |


| single digit |
| :---: |
| integers |

even
idea 2
idea 4
idea 6
idea 1 8
idea 3

$\quad$| idea 5 |
| :--- |
| idea 7 |
| idea 9 |


| idea 2 | idea 1 | single digit <br> integers |
| :--- | :--- | :--- |
| idea 4 | idea 3 | prime | | not prime |
| :---: |
| idea 6 |

## Deductive Mapping



