

Concept Maps:

A Step by Step Guide for the NSS Examination

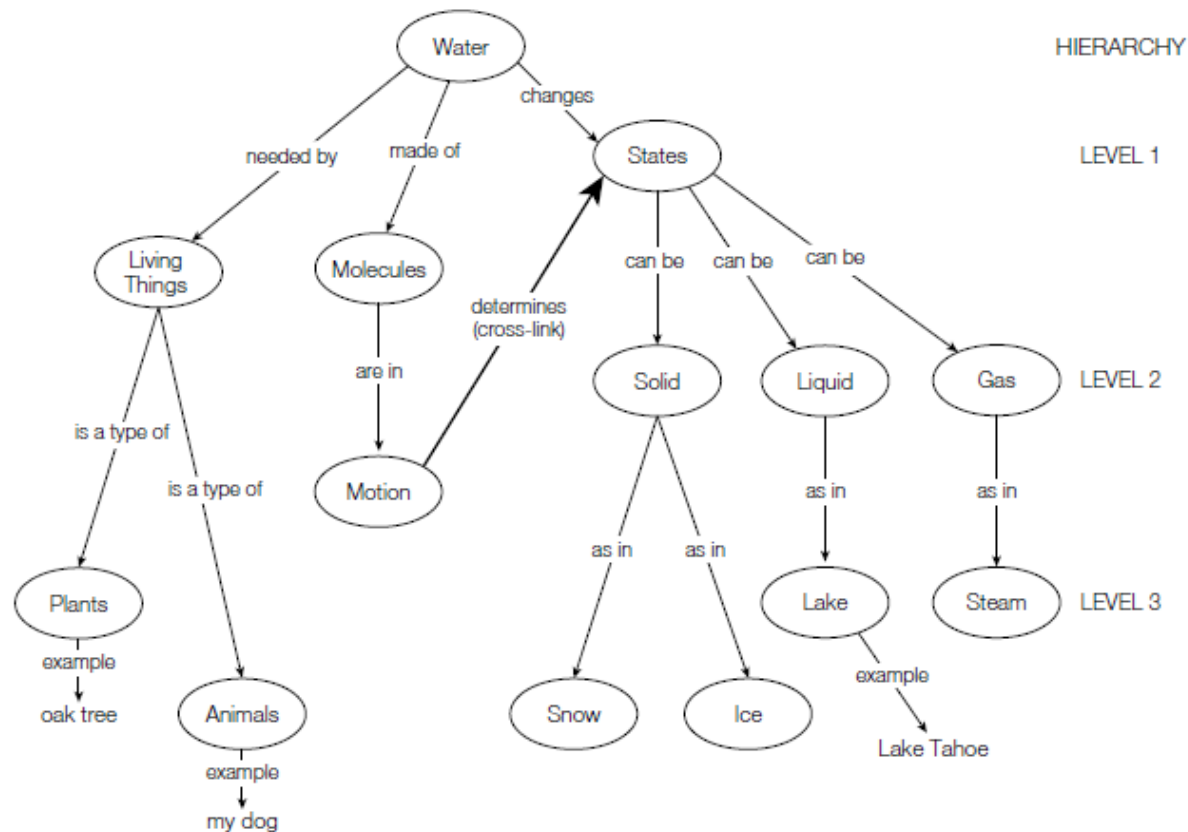
Why Concept Maps?

- A major goal of Genes-to-Society is to develop physicians who think in terms of system biology
- How do we assess system biology thinking?
- By having you construct a Concept Map

What is a Concept Map?

- Graphical tool that is used to represent the organization or structure of knowledge
- Includes:
 - Main Topic
 - Concepts relating to Main Topic
 - Concept links
 - Propositional Statements
 - Cross links
 - Examples

Example of a Concept Map for "Water"



Example map of *water* demonstrating the basic components of hierarchical concept maps. Note the cross-link (bold arrow) between the concepts *motion* and *states*. Reproduced with permission from Cambridge University Press.¹⁴

How to Construct a Concept Map

- **Step 1:** Start with the main topic

For your assignment:

Select a patient with a neurological disorder. This will be your main topic (e.g. Patient X: Seizures)

Example:



- Maps are either “top-down” or “center-out” from the main topic

How to Construct a Concept Map

Step 2: Construct a list of at least **20** concepts relating to ***the Patient's Neurological Disorder***

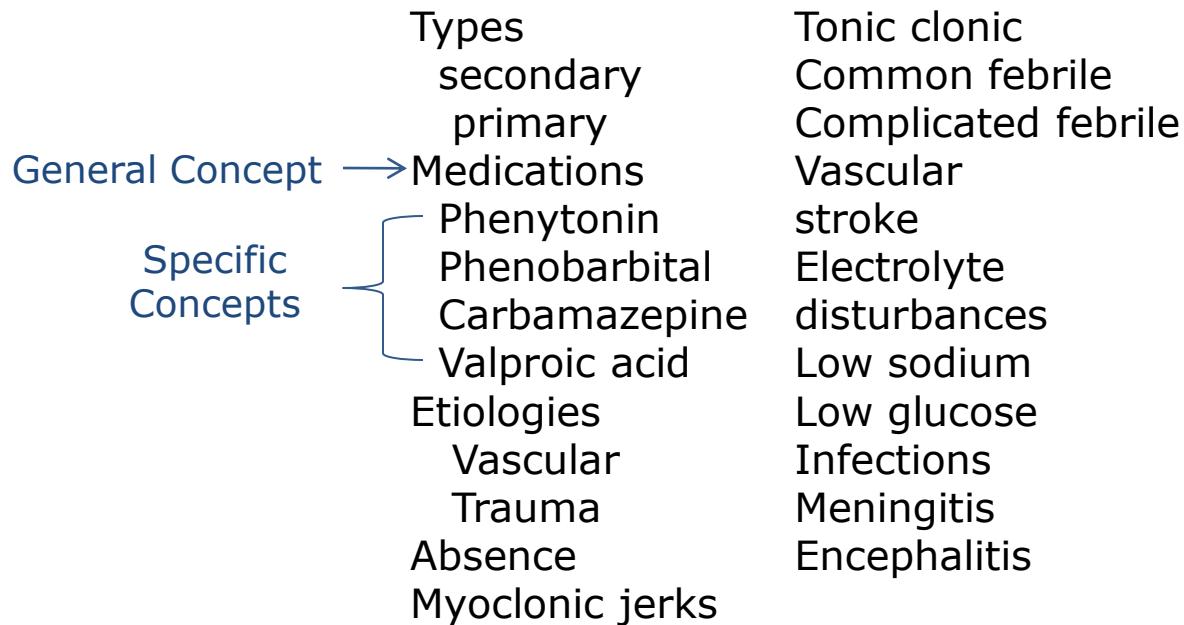
Keep in mind the GTS paradigm:

- Society
- Community-Family
- Environment
- Organ Physiology
- Cell Biology
- Genomics

Step 3: Organize the concepts from general to specific

Concept Map Example

Example for Steps 2 & 3: Develop a list of topics and organize from general to specific



How to Construct a Concept Map

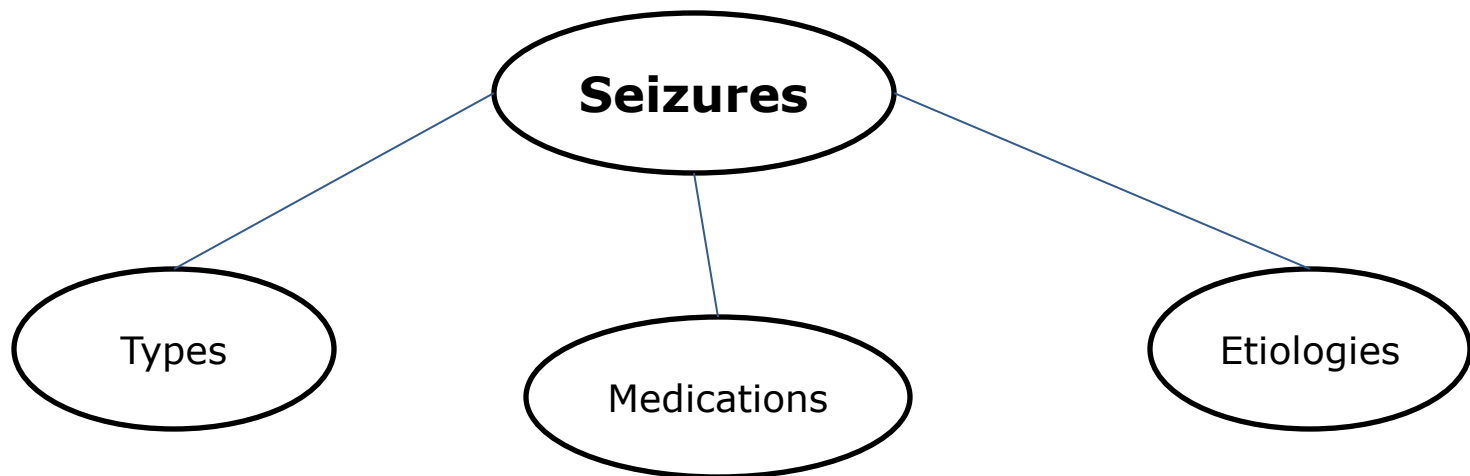
Step 4: Add general concepts to map with enclosed ovals or rectangles

Step 5: Add lines or arrows between concepts

Step 6: Use linking word(s) to describe the relationship between concepts

Concept Map Example

Example for Steps 4 & 5: Add general concepts to map with enclosed ovals or rectangles and add lines or arrows between concepts



How to Construct a Concept Map

Step 7: Use branches to represent groupings of concepts

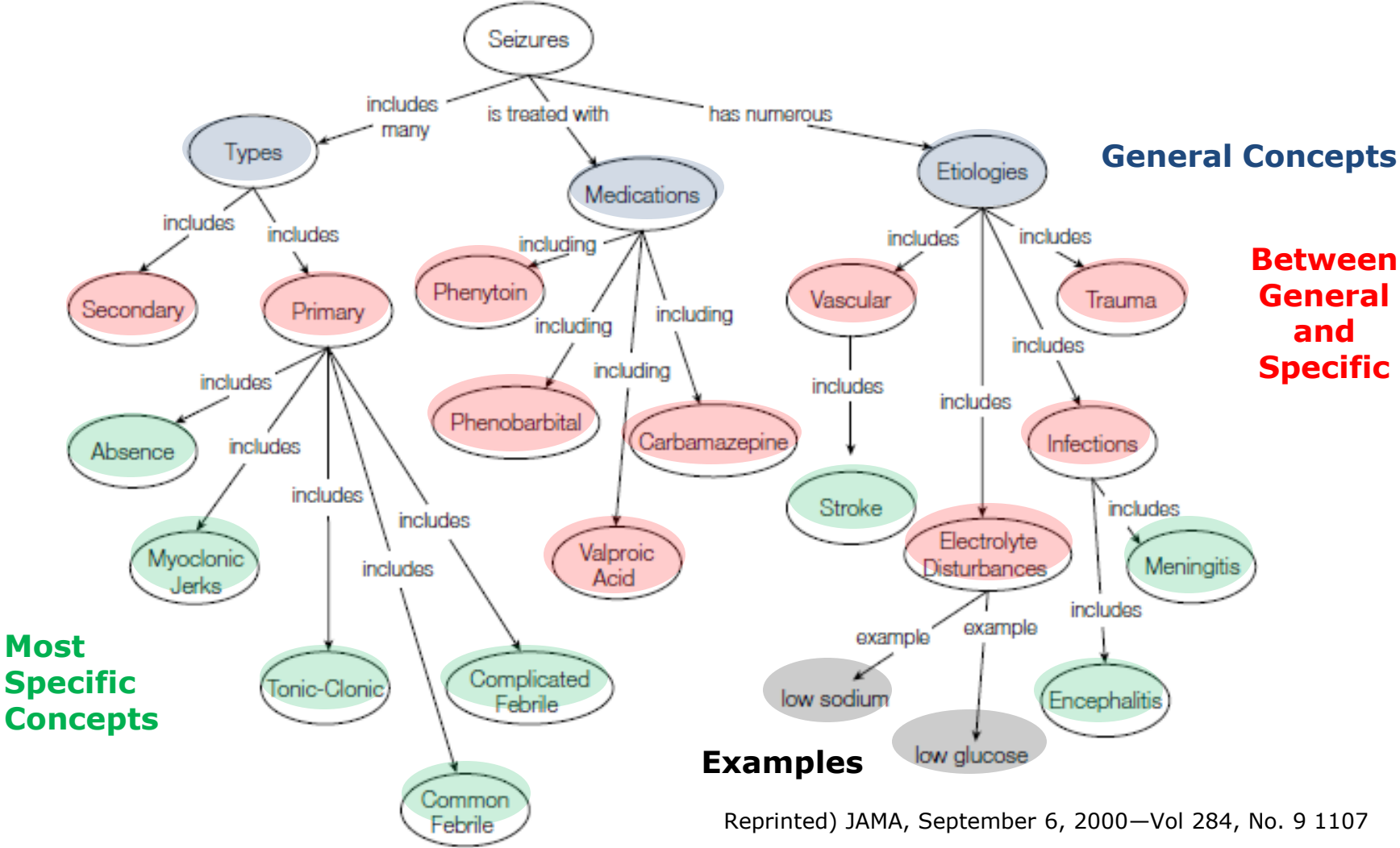
Step 8: Identify any crosslinks in map

- Relationship between concepts in two different sections of the map

Step 9: If necessary, add examples

Step 10: Revise and finalize map

Concept Map Example: Steps 6-10



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Assignment

- Construct a concept map using a patient with a neurology disorder as the main topic
- Add at least 20 concepts relating to the disorder keeping in mind the GTS paradigm (society, community/family, environment, organ physiology, cell biology and genomics)
- Please limit your concept map to one page with a readable font size
- Concept Maps can be constructed by hand or using Computer Software (Cmap is free and easy to use) <http://cmap.ihmc.us/download/>