Concept Maps

What are concept maps?

Concept maps are visual representations of information. They can take the form of charts, graphic organizers, tables, flowcharts, Venn Diagrams, timelines, or T-charts. Concept maps are especially useful for students who learn better visually, although they can benefit any type of learner. They are a powerful study strategy because they help you see the big picture—because they start with higher-level concepts, they help you chunk information based on meaningful connections. In other words, knowing the big picture makes details more significant and easier to remember.

Concept maps work very well for classes or content that have visual elements or in times when it is important to see and understand relationships between different things. They can also be used to analyze information and compare and contrast.

Making and using concept maps

Making one is simple. There is no right or wrong way to make a concept map. The one key step is to focus on the ways ideas are linked to each other. For a few ideas on how to get started, take out a sheet of paper and try following the steps below:
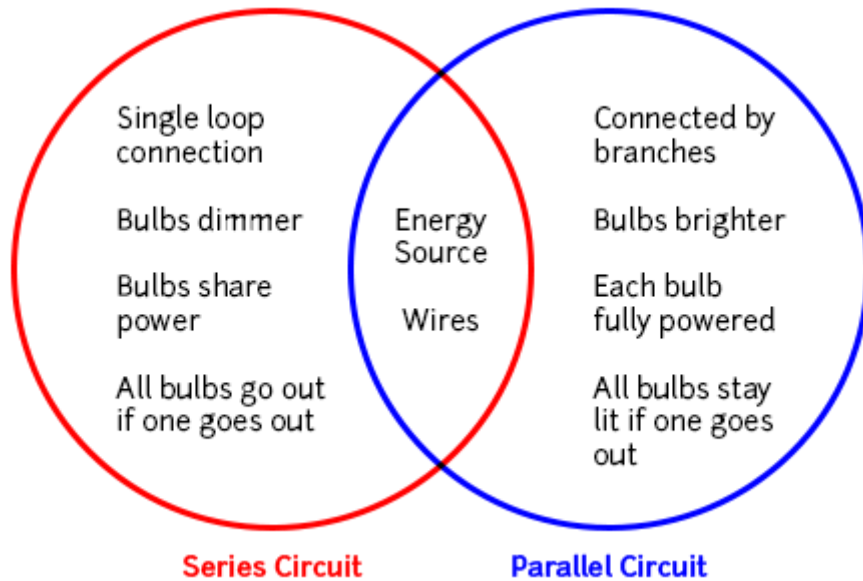
- Identify a concept.
- From memory, try creating a graphic organizer related to this concept. Starting from memory is an excellent way to assess what you already understand and what you need to review.
- Go through lecture notes, readings and any other resources you have to fill in any gaps.
- Focus on how concepts are related to each other.

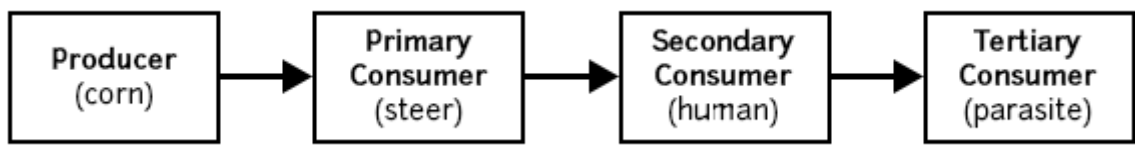Your completed concept map is a great study tool. Try the following steps when studying:

- Elaborate (out loud or in writing) each part of the map.
- List related examples, where applicable, for sections of the map.
- Re-create your concept map without looking at the original, talking through each section as you do.
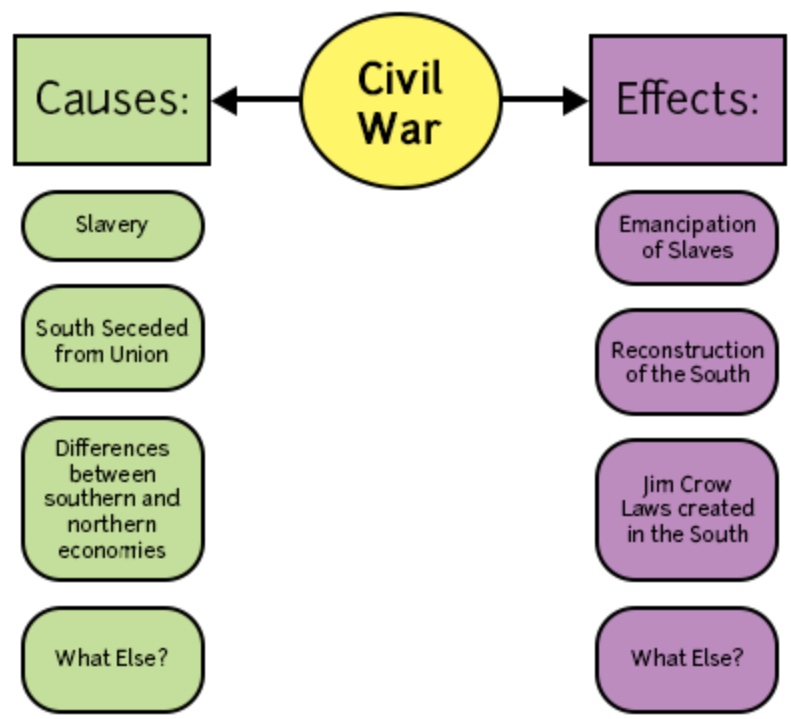
Examples of concept maps

Example 1: This example illustrates the similarities and differences between two ideas, such as Series and Parallel Circuits. Notice the similarities are in the intersection of the 2 circles.

Series Circuit

- Single loop connection
- Bulbs dimmer
- Bulbs share power
- All bulbs go out if one goes out

Energy Source

Wires

Parallel Circuit

- Connected by branches
- Bulbs brighter
- Each bulb fully powered
- All bulbs stay lit if one goes out

Example 2: This example illustrates the relationship between ideas that are part of a process, such as a Food Chain.

Producer (corn)	→	Primary Consumer (steer)	→	Secondary Consumer (human)	→	Tertiary Consumer (parasite)

Example 3: This example illustrates the Causes and Effects for an event, such as The Civil War.

Causes: ← Civil War → Effects:

Causes:
- Slavery
- South Seceded from Union
- Differences between southern and northern economies
- What Else?

Effects:
- Emancipation of Slaves
- Reconstruction of the South
- Jim Crow Laws created in the South
- What Else?

Example 4: This example illustrates the relationship between main idea, such as Climate Change, and supporting details.
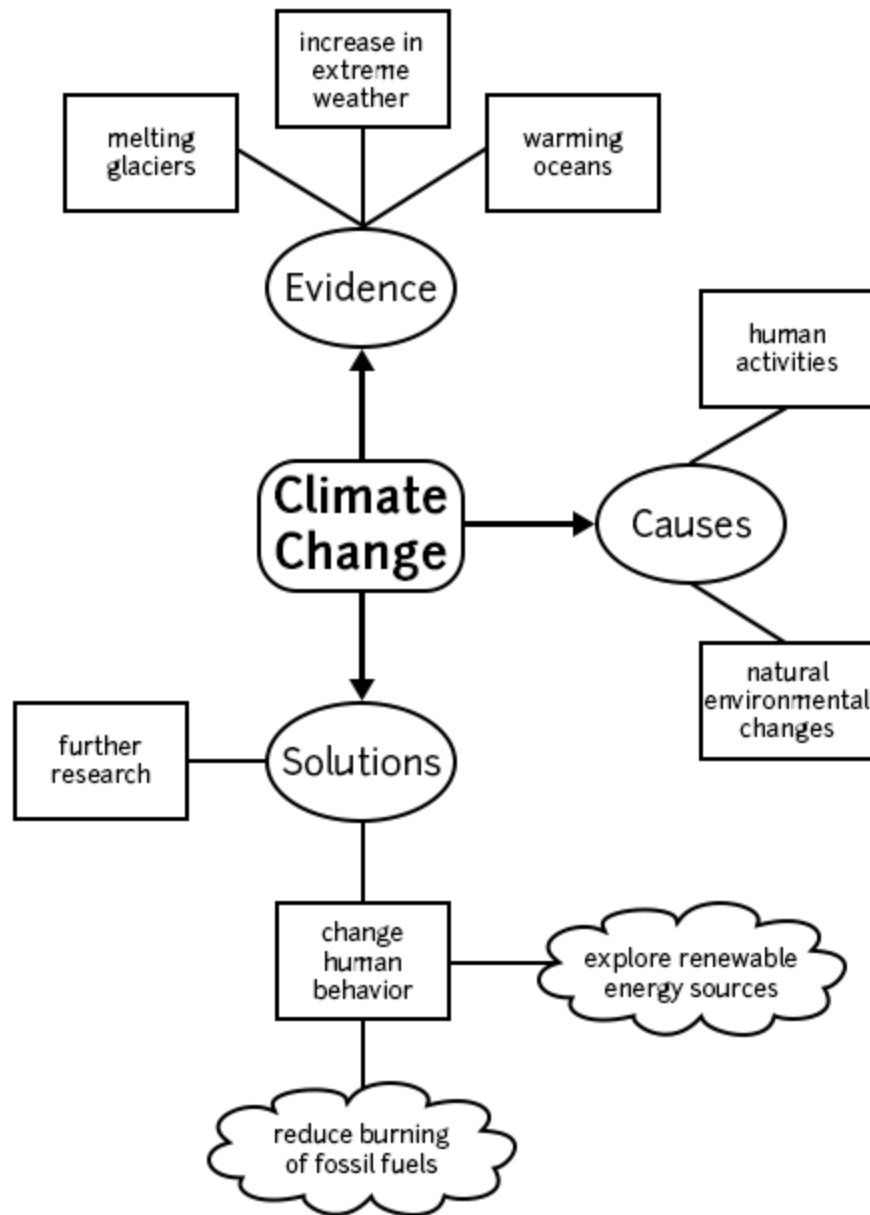
Example 5: Outlining is a less visual form of concept mapping, but it might be the one you're most familiar with. Outlining by starting with high-level topis and then drilling down to fill in details is a great way to determine what you know (and what you don't know) when you're studying. Creating an outline to start your studying will allow you to assess your knowledge base and figure out what gaps you need to fill in. You can use type your outline or create a handwritten, color-coded one as seen in Example 5.

"free surface"
"Basement membrane"

A) Epithelial

1. * Simple Squamos
   - 1 layer
   - diffusion + filtration
   - air sacks in lungs (capilaries)

2. * Simple columnar
   - 1 layer, tall cells, microvilli
   - secretion (mucus), movement, absorption
   - respiratory tract, digestive tract

3. * Simple Cuboidal
   - single layer
   - secretion (glandular), absorption
   - ovaries + testies ducts

4. * Stratified Squamous
   - layers of flattened cells
   - protection
   - upper digestive tract

B) Connective

1. Loose - loose fibers / extensive ground subst.
   - elastic binding + packaging
   - beneath skin

2. Dense - dense fibers / little ground subst.
   - support, strength, elasticity
   - skin (organs, tendons, ligaments)

3. Adipose - fat / sparse ground subst, surrounded
   - by blood vessels
   - padding, insulation, energy storage

4. blood - carry oxygen, CO2, waste

5. Cartilage - rubbery ground substance, no blood
   - flexible support, low friction movement

6. Bone - mineralized ground substance
   - protects organs + brain
   - sturdy support.

C) Muscle — all contract

1. * Skeletal - striated cells
   - voluntary control
   - bones + tendons

2. * Cardiac - striated cells w/ gap junc.
   - only in heart

3. * Smooth - not striated
   - involuntary contract - slow
   - strong
   - digestive tract, uterus, etc

TISSUE TYPES

D) Nervous tissue

- long extensions close to each other
- axons
- signals
- heart, muscle

Works Consulted:

"Tips & Tools." Learning Center, learningcenter.unc.edu/tips-and-tools/.