

Note Making

MAKING not taking because making something requires you to actively think.

Note making methods...
***your* style matters**

Outlining method

- Highly organized
- Shows relationships
- Easy to review



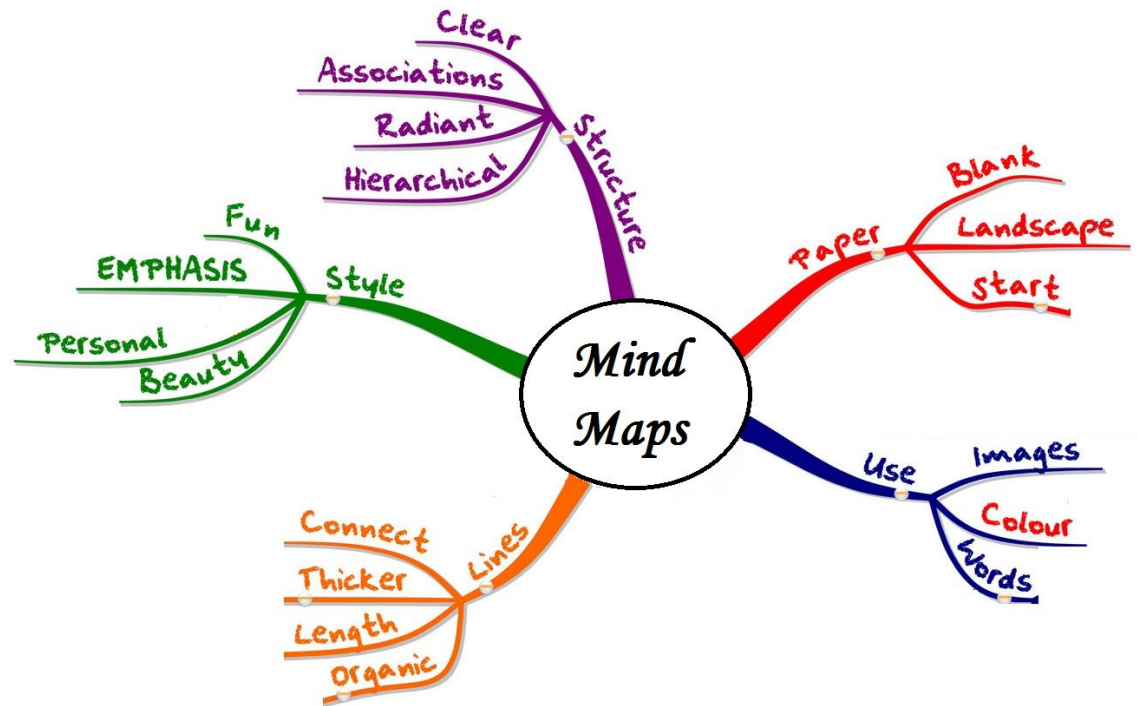
Charting method

- Reduces writing
- Helps memorization
- Easy to compare/contrast
- Usually created as a review

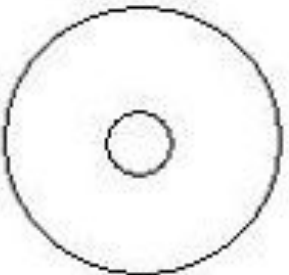
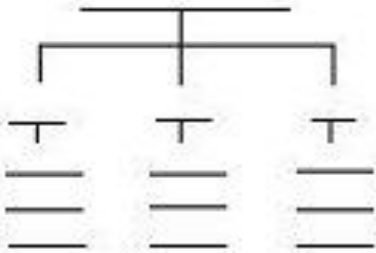
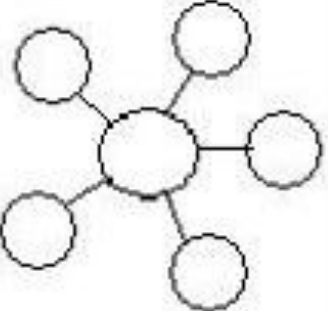
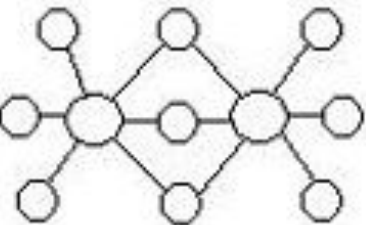
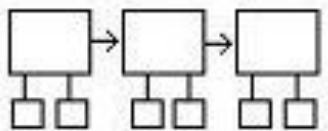
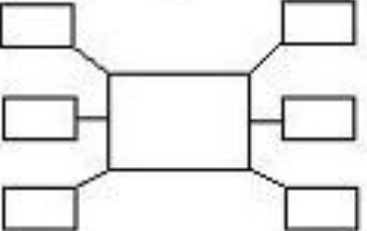
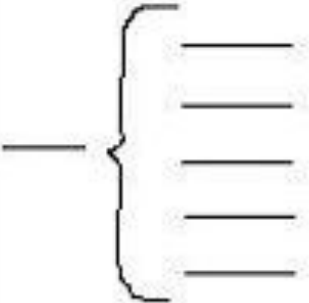

Ozone-destroying chemicals		
Name	Use	When U. S. production ends [±]
CFCs (chlorofluorocarbons)	solvents, aerosol sprays (most spray can uses banned in 1970s) foaming agents in plastic manufacture	January 1, 1996
Halons	fire extinguishers	January 1, 1994
Carbon tetrachloride	solvents, chemical manufacture; carbon tetrachloride causes cancer in animals	January 1, 1996
Methyl chloroform (1,1,1-trichloroethene)	very widely-used solvent; in many workplace and consumer solvents, including auto repair and maintenance products	January 1, 1996
HCFCs (hydro CFCs)	CFC substitutes, chemicals slightly different from CFCs	January 1, 2003 ^{**}

Mind mapping

- Visual in nature
- Easily shows relationships
- Little thinking necessary
- Can be a during presentation or a review method

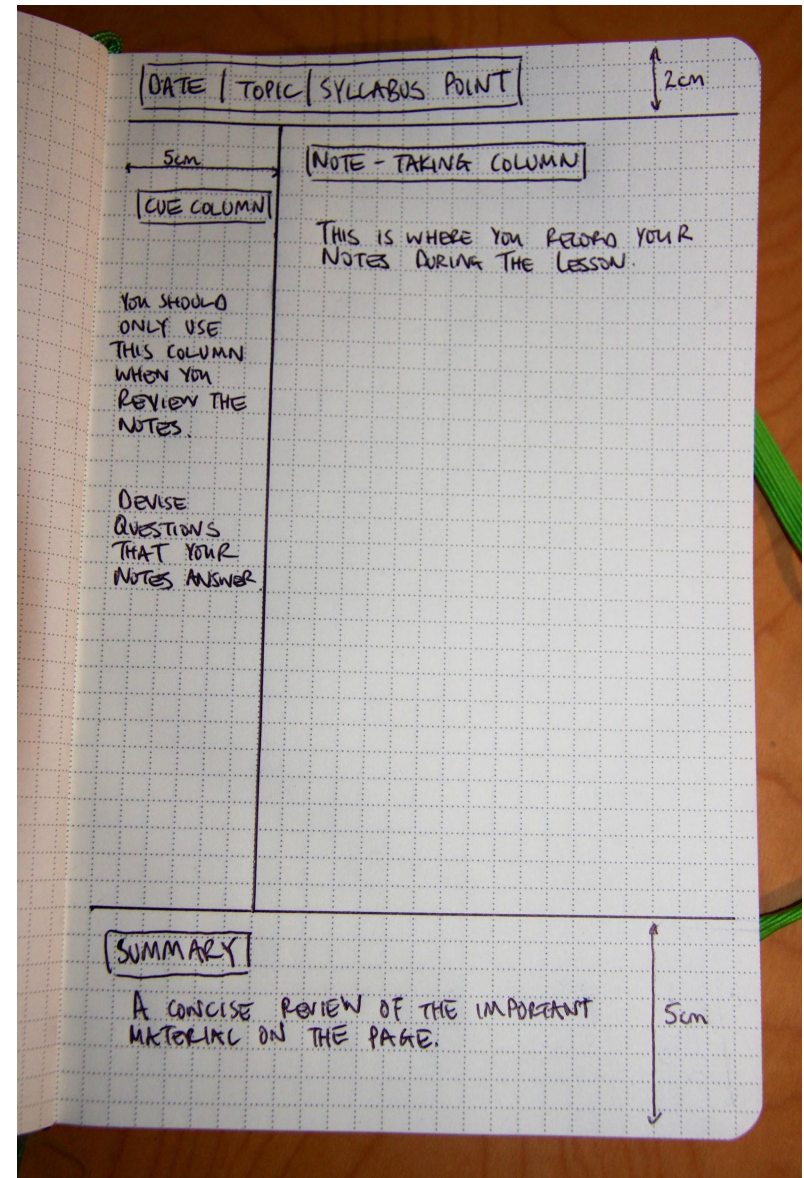


Thinking Maps (specific ways of mind mapping)

<p>Circle Map</p>  <p>FOR DEFINING</p>	<p>Tree Map</p>  <p>FOR CLASSIFYING</p>	<p>Bubble Map</p>  <p>FOR DESCRIBING</p>	<p>Double Bubble Map</p>  <p>FOR COMPARING</p>
<p>Flow Map</p>  <p>FOR SEQUENCING</p>	<p>Multi-Flow Map</p>  <p>FOR CAUSE AND EFFECT</p>	<p>Brace Map</p>  <p>WHOLE TO PARTS</p>	<p>Bridge Map</p>  <p>FOR ANALOGIES</p>

Cornell notes

- Identifies major concepts
- Easily customized
- Encourages review of notes



Sketchnotes

- Ideas not art
- Personal interpretation
- Visual thinking
- Engage the mind
- Improve memory
- No right or wrong
- You make the rules
- Created as you review your notes

THE STORY OF CELLULAR RESPIRATION PRODUCTS
 $6O_2 + C_6H_{12}O_6 \rightarrow 6CO_2 + 6H_2O$
 A PROCESS BY WHICH CELLS BREAK DOWN GLUCOSE TO MAKE ATP. THE CHEMICAL ENERGY OF ATP IS STORED POTENTIAL ENERGY THAT CAN BE CONVERTED TO KINETIC ENERGY + ADP.

IT ALL STARTS WITH THE SUN AND SUNLIGHT ENERGY
 PHOTOSYNTHESIS
 $6CO_2 + 12H_2O \rightarrow C_6H_{12}O_6 + 6O_2$
 PLANTS TAKE IN CARBON DIOXIDE AND WATER AND USE SUNLIGHT TO MAKE GLUCOSE AND OXYGEN.

GLYCOLYSIS
 SPLIT THE GLUCOSE INTO PYRUVIC ACID.
 $2 \text{ GLUCOSE} \rightarrow 2 \text{ PYRUVIC ACID} + 2 \text{ ATP}$

THE CITRIC ACID CYCLE
 PYRUVIC ACID ENTERS THE CYCLE AND RELEASES CO₂ AND ENERGY.
 $2 \text{ PYRUVIC ACID} \rightarrow 2 \text{ ACETYL COA} + 2 \text{ CO}_2$
 $2 \text{ ACETYL COA} \rightarrow 2 \text{ CITRATE} + 2 \text{ CO}_2$
 $2 \text{ CITRATE} \rightarrow 2 \text{ ISOCITRATE} + 2 \text{ CO}_2$
 $2 \text{ ISOCITRATE} \rightarrow 2 \text{ ALPHA KETOGLUTARATE} + 2 \text{ CO}_2$
 $2 \text{ ALPHA KETOGLUTARATE} \rightarrow 2 \text{ SUCINYL COA} + 2 \text{ CO}_2$
 $2 \text{ SUCINYL COA} \rightarrow 2 \text{ MALATE} + 2 \text{ CO}_2$
 $2 \text{ MALATE} \rightarrow 2 \text{ OXALOACETATE} + 2 \text{ CO}_2$
 NET: $2 \text{ PYRUVIC ACID} \rightarrow 2 \text{ OXALOACETATE} + 4 \text{ CO}_2 + 2 \text{ ATP}$

THESE TAKE PLACE IN THE MITOCHONDRION
 STEP BY STEP
 $6O_2 + 12 \text{ ATP} \rightarrow 6H_2O + 32 \text{ ATP}$
 ELECTRON TRANSPORT CHAIN

PLANTS ALSO HAVE MITOCHONDRION
 WE GET THE FOLLOWING MOLECULES AT THE END
 H_2O
 CO_2
 ATP
 HMM... THEN WHERE DO THEY GO?

Earth: Making of a Planet

HD Universe Channel

? How the Earth was Formed

Bang!

Explosion Evidence

Meteorite Very old

Expert: Michael Zuber

Expert: William Hartmann

Phd

Happy Accident → CSalt

30 million years to form

Layers

GRANITY!

Melting

Iron - Heavy Dense

Nickel - 1000 times

Lead - 100 times

Gold

Erk: 11.30

JOHN DUPUIS TANYA NOEL

CREATING NEXT GENERATION OF OPEN SCIENTISTS

SCHOLARLY LANDSCAPE

EMPTY VESSEL!

PUBLIC AVAILABILITY OF DATA

UNDERGRADUATE SCHOOL

OPEN SCIENTIST!

THE LIBRARIAN IS IN

TRANSPARENT METHODS & DATA

OPEN SCIENCE

PUBLIC ACCESSIBILITY OF COMMUNICATION

WEB BASED TOOLS FACILITATE COLLABORATION

- COLLABORATION OF PROFS/LIBRARIANS
- TEACH THE SKILLS TO INTERPRET SOURCES
- FOSTER CULTURE OF COLLABORATION
- REINTRODUCE LIBRARIANS AS COLLABORATORS IN LEARNING

How IT IS

Peer Review
Science journalism
News reporting
Personal blogging

How IT SHOULD BE

Process

News

Open Science

Science journalism

Debate

peer Review

blogs

opinion

Purposeful doodling