Science Research Mind Maps

Hello, Researchers,

For your final Science project of the year you will be synthesising (combining and making sense of) the extensive notes you have made from your independent inquiry projects into a Mind Map.

In Class Meetings we have looked at some examples, and you have been encouraged to do some independent investigation online to seek inspiration for your own work. Before we get to the steps, let's talk about the why's:

- **Why Mind Maps?** Because Mind Maps are a proven tool for increasing cognitive functioning. The act of making a Mind Map engages both sides of your Brain, and therefore you create more pathways and hooks for the information you are exploring, which in turn leads to increased comprehension and increased retention. Mind Maps are a great study tool, and they also are a great way of sharing information when you have free-choice for presenting projects, getting you away from the same old poster-board or PowerPoint.

- **Why start at the center?** Because starting in the center gives your Brain more freedom to spread out in all directions and to express itself more freely and naturally.

- **Why use key words?** Because the process of narrowing down your work into key words engages your Critical Thinking skills and forces you to see how each idea or strand of information can be broken down into related parts. Key words also give your Mind Map more power and flexibility.

- **Why use an image for your main branch?** Because an image *is* worth a thousand words. Creating images activates the right-side of your Brain by stimulating your imagination and your Creative Thinking. Also, creating and viewing images is more interesting to your Brain than just writing words—it helps keep you focused, helps you concentrate, and gives your Brain more buzz.

- **Why use color?** Because colors are as exciting to your Brain as images. Color adds extra vibrancy and life to your Mind Map, it adds tremendous energy to your Creative Thinking, and, well, it's fun.

- **Why connect your branches and your sub-branches and your sub-sub-branches?** Because your Brain works by association. It likes to link two (or three) (or four) (or five) (or—well, you get the point) things together. If you connect the branches, you will understand and remember things on a deeper and more permanent level.

- **Why make the branches curved?** Because nothing but straight lines is boring for your Brain.

- **Why use images throughout?** Because each image, like the central image, is also worth a thousand words. So even if you only have ten images in your Mind Map, it's already the equivalent of ten-thousand words of notes!

Materials:

- Paper of your choice – needs to be at least 8.5 x 11 (regular printer paper) but could be larger if you have it and if you know you either have a lot of notes to work with or your printing is usually large.

- Color – a different color for each sub-branch, and color for your images

- Your research notes (can be added to throughout this process)

Steps:

☐ Choose your Key Word to represent your research topic. You *may* need two or three words, but that is a last resort; actively challenge yourself to use as few words as possible. What is the Big Idea at the center of your exploration?

☐ What image will best capture/represent that Big Idea?

Organize Your Notes—*focus less on neatness here and more on organization*

☐ Create a new section in your comp book, or get some loose paper (and create a safe place to store it!).

☐ Read through your notes and make a list of your Maybe Ideas for your main branches. What are the main categories that naturally arise as you read through your work?

☐ Sort through your Maybe Ideas for branches and make your final list. Make a new page in you book for each branch.

☐ Go through your notes and sort the information into the appropriate branch.

☐ Look through each branch page—what categories within each branch do you notice? These will become your sub-branches.

☐ Create a system for yourself that will allow you to further sort your information into groupings—this could be highlighters or color-coding, or it could be lists on each page or something else that makes sense to your brain.

☐ Continue this system of sub-grouping until you feel you are at the end of each branch—note that some ideas will only need one sub-branch; some will need many sub-branches to create the chain that breaks down the idea.

☐ Look back through your new notes and create the key word for each idea—make notes to yourself as to where you will need a picture/chart/diagram to fully capture a complex idea (where a word will just not do).

Create Your Mind Map

☐   Make a rough sketch of your Mind Map—how many branches?

   How much space does each branch need to contain its sub-branches?

   What structure are you playing with?

   What paper are you using and how much space do you have to work with?

☐   Build your Mind Map in pencil, starting from the center with your Big Idea.

     Things to remember:

- All branches and sub-branches (and sub-sub-branches) need to connect, like a tree

- Curve the branches

- Give each branch an image

- Challenge yourself to work with key words throughout

- Where are you using an image to capture complex ideas instead of words?

☐   Add color—a different color for each branch (sub-branches are the same color as the branch they are connect to, unless your brain wants different colors for those, too).

☐   When you are finished, reflect on each branch and on the Mind Map as a whole. What questions do you have of the information? Write those questions near to the information they are connected to or arise from.

☐   *Optional:* like with a web, connect ideas across the Mind Map.

☐   You are done!

Note: you are *not* being assessed on your artistic ability. Clarity of communication and taking pride in one's work are the key factors here.