2.1 - Developing a Thesis

MDM4U
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Part 1: ISU Intro

This chapter will prepare you to begin your ISU that is worth 10% of your final grade. For the ISU you will be required to choose a topic that interests you and conduct a study that analyses large amounts of data using:

- one-variable statistics tools (chapter 3)
- two variable statistics tools (chapter 1)
- probability (chapter 4/5)

Part 2: Mind-Map

Before you can begin your project, you must create a thesis:

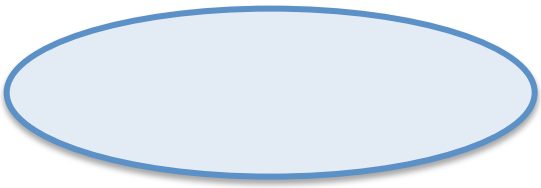
thesis: a formal statement or question that your project will answer or discuss

To begin creating a thesis, you must first determine what topics interest you and then determine what concepts related to that topic you want to study. A useful brainstorming tool that can illustrate how a topic relates to other concepts is a *mind map*.

mind map: a visual display used in brainstorming to illustrate relationships

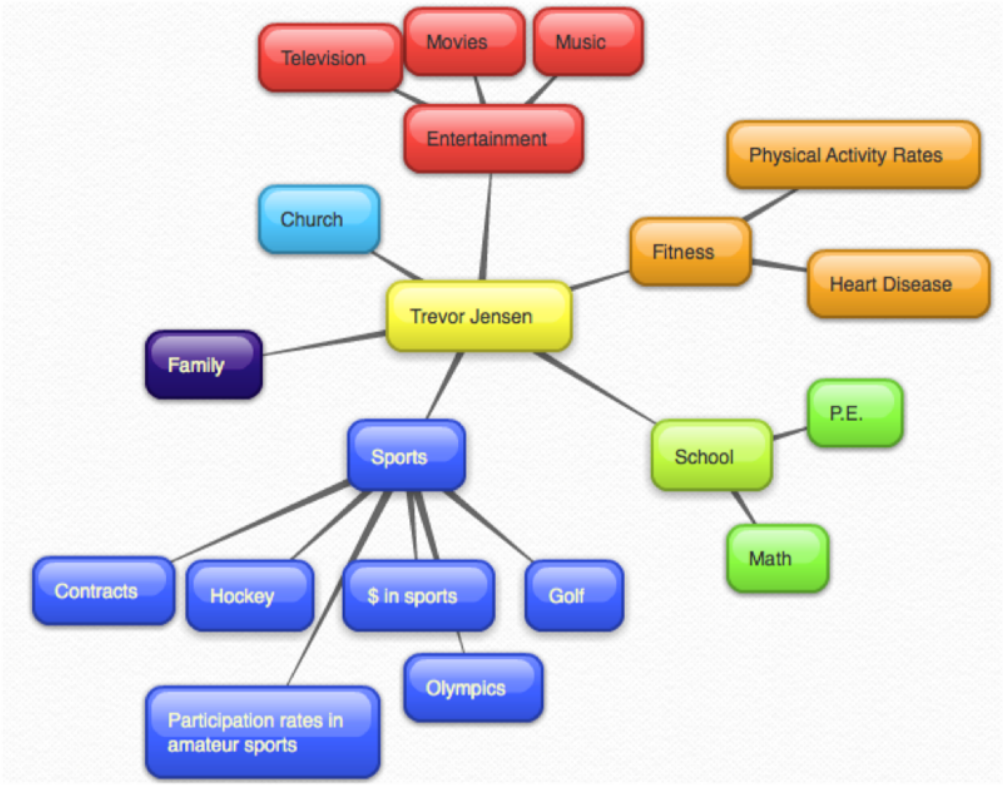
Constructing a Mind Map

1. Start by making a mind map of your interests with you at the center. Start off as simple as possible and draw arrows to show how topics are connected. Work from the inside out.



Extended Mind Map

2. Pick one of the topics from your mind map and extend it with sub-topics.



Part 3: Thesis Question Development

Once you have narrowed down your topic, you will need to pose a problem that you plan to investigate.

Money in Sports

3. Brainstorm and create number of questions that can be explored with the use of statistical information

a) How do people at my school feel about high salaries in professional sports?

b) How have salaries paid to professional hockey players changed from 1960 to present?

c) Is there a relationship between a very large salary increase to an athlete and his or her subsequent performance?

d) Does the amount a country spends to prepare its athletes for the Olympics correspond to the country's success at the games?

Thesis Question Analysis

Questions to ask of your Thesis:

i. What are the main variables in my question?

ii. Can these variables be measured statistically?

iii. Is there enough data to make an interesting analysis

4. Once you have chosen your thesis, analyze it using the three questions above to make sure your study will be able to provide an insightful answer.

Thesis: Is there a relationship between a very large salary increase to an athlete and his or her subsequent performance?

Analysis:

i. player salaries, performance statistics (goals, home-runs, etc.)

ii. yes; however it may be difficult to choose which performance statistics to use

iii. yes there would be lots of available data for professional athletes and their salaries and performance.

Project tips:

One way of posing a problem is to generate questions from data. For example, once a topic has been identified, do a preliminary data search. The type and quantity of available data may indicate some possible questions. Data from print sources, the Internet, and E-Stat are some resources that may be used.