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| **Date Assigned: 1/5/16** | **Date Due: 1/7/16** |
| **Unit:** Languages | **Turn In List:** **1. Terms** |
| *“I will be able to declare the language of focus for Semester 2 .”* | |

**Computer Programming Languages: An in-depth analysis**

**Content Objectives:** Students will research each of the five languages acceptable for the 2A computer programming state CTE certification. The following [Wiki article](http://en.wikipedia.org/wiki/Comparison_of_programming_languages) may help in your search. [Language popularity article](http://en.wikipedia.org/wiki/Measuring_programming_language_popularity).

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| **Starter Activity** |
| Write a class that will run in Processing. You may choose from the following list of class names: Human, Cat, Dog, Spaceship, Soldier or Planet. The class must contain a name, at least 2 class variables, 1 constructor, a display function and at least one action function. Paste code below:  class Spaceship {  color c;  float x;  float y;  float speed;  float left; |

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| **Key Terms: (lookup each language and write a short description of each)** | |
| **C++** | General purpose programming language. |
| **C#** | Multi-paradigm programming language encompassing strong typing, imperative disciplines. |
| **Java** | Java is a high level, object-oriented, platform independent language. |
| **Python** | An interpreted, object oriented high level programming language. |
| **Visual Basic** | Third generation event driven programming language and integrated development environment from Microsoft. |
| Type Safety | The extent to which programming language discourages or prevents type errors. |
| Interpreted | Most of its implementations execute instructions directly. |
| Procedural | Based on the concept of the procedure call. |
| Compiled | Language whose implementations are typically compilers. |

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|  | **C++** | **C#** | **Java** | **Python** | **Visual Basic** |
| Intended Use | Generic uses | Simple, object oriented language. | General, multi platform applications. | Used with less code than other languages. | More visual than other languages. |
| Strongly Typed | no | no | Yes | Yes | yes |
| OS’s | All | Win | All | All | Win |
| Industry | Hardware | Videogames | Operating systems | Video games | Visual applications |
| **Atoms or Bits** | A | B | B | B | B |
| Current Version | ISO/IEC 14882 | 6.0 | 8 | 3.5.1 | 6.0 |
| Official Standard | http://isocpp.org/std/the-standard | http://msdn.microsoft.com/en-us/library/618ayhy6.aspx | http://docs.oracle.com/javase/7/docs/ | http://www.python.org/ | http://msdn.microsoft.com/en-us/library/sh9ywfdk.aspx |

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| **History and Background of the Language you are interested in:** |
| You may work in pairs for this portion but you need to submit your own file to Canvas. Give the When’s, Who’s, Why’s, Where’s, How’s and worldwide popularity pulse applicable for the language you are considering. (Note, this is NOT your final decision.)  Python was thought of in the late 1980’s and was released in December 1989 by Guido van Rossum because he wanted a hobby. Python was made in the Netherlands based on the ABC Language. Python is the 5th most used language in the world and is used by Google, Yahoo, and NASA. |

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| **Assignment:** |
| Rewrite Class from Starter:  Find the official standard website or simply do a google search for your language and “class” or “object” and do your best to re-write the class from starter in the new language (code not require to build or compile.)  class Spaceship {  color c;  float x;  float y;  float speed;  float left; |

Notes (Points of interest, mistakes, lessons learned, web resources, and thoughts):

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