Modern Human Variation. Assignment Outline: The goal of this assignment is to understand what phenotypic traits of modern humans are correlated to one another, and what traits are not correlated. As we are all modern humans, we will once again use ourselves as our data set. Similarly to the Bipedalism Big Assignment, you will first collect data on yourself and then upload that data to the class data sheet. I will post an announcement when the Class Data Sheet is closed. After that point, you will use the class-wide data to finish the activity. Download the Modern Human Variation Big Assignment WorksheetActions . SUPPLIES For this lab, you will need the following supplies: Measuring tool for length (ruler with centimeters is best, but use whatever you have and convert to cm) Human Pigmentation ChartsActions Modern Human Traits Class Data Sheet All measurements in this lab should be recorded in centimeters. If you only have a ruler/ measuring tape in imperial units (inches, feet, etc.), then you will need to convert between the two systems. Use the links below: Height converter (Links to an external site.) Inches to centimeter converter (Links to an external site.) COLLECT DATA You are a modern human! So once again we will start with collecting data on ourselves. We are collecting data on SIX traits; two of these traits we have already covered in our Bipedalism Big Assignment. Follow the instructions below to collect your data for each of these traits: HEIGHT: You should already have this data collected from the Bipedalism Big Assignment. Use the online converter above to convert from feet/inches to centimeters. Average height for Americans is between 152 cm and 177 cm. FOOT SIZE (LENGTH): Once again, you should have already collected this data. If you did not, see the Big Assignment: Bipedalism and the Laetoli Trackway page where I provide the instructions for how to collect this data. Average American foot size is between 24 cm and 29 cm. HAND LENGTH: Use your ruler (or other measuring device) and record the measurement in cm. You should measure length from the base of the palm to the tip of the middle finger. Average hand length is between 17 cm and 19 cm. HAIR COLOR: Use the provided Human Hair Color Chart (see Human Pigmentation ChartsActions ) to identify your hair color. Choose the best fit of the provided colors. Try to measure hair color around mid-length if possible (avoiding either the root or the tip). If your hair is artificially dyed, then choose the color that most closely resembles your natural hair color (as you can remember). If your hair is turning gray (like mine!), then choose the color that most closely resembles your hair color prior to this change. Record both the name of color and the number under the image. Do not record the manufacturer code. For example, you might record Medium Ash Brown and #9 (but will not record S13). Prevalence of hair color: Black and brown are the most common/prevalent hair colors in global populations; blonde is more rare and red tones are the rarest. EYE COLOR: Use the provided Human Eye Color Chart (see Human Pigmentation ChartsActions ) to identify your eye color. Choose the best fit of the provided colors. If you wear colored contacts, pick the color the best fits your natural eye color. Record both the name of color and the number under the image. Prevalence of eye color: Somewhere between 55-79% of the world’s population have brown eyes. Green eyes are pretty rare with an estimated 2% of the world’s population having this color. Blue eyes are an estimated 8-10% of the world’s population, and hazel and amber account for about 5%. Other very rare colors include gray, red/violet, and heterochromia (where a person exhibits two different eye colors) are each less than 1%. SKIN COLOR: Use the provided Human Skin Color Chart (see Human Pigmentation ChartsActions ) to identify your skin color. Choose the best fit of the provided colors. Measure pigmentation on the inside of the forearm. Record the Row Number for this trait. Prevalence of skin color: Far too much variation along a broad spectrum of pigmentation to estimate this in either American or global populations. Upload this data to the “Modern Human Traits Class Data Sheet”. GRAPH THE DATA After the Class Data Sheet closes, you will then export the data to Excel or Google Sheets or other spreadsheet software and create scatter plots (aka scatter charts, scatter graphs, etc.). Not sure how to do this? I have created a couple video tutorials (see below). You need to create THREE Scatter Plots (SP) according to the rules outlined below. Remember, a scatter plot is created by graphing the relation of one variable to another, with individual dots that represent individual people (for our data set). One of your scatter plots (either SP #2 or SP #3) MUST use skin color as a variable. For the color variables, use the corresponding color number (NOT the name) to create your SP. Finally, each SP should be color coded by sex. Again, see video tutorials below for help. Each graph should have the following: A clear title Labels for both the X (horizontal) axis and Y (vertical) axis Legend that identifies females/ males Data that fills the full graph area (delete blank space by adjusting the minimum value of X and Y axes) Scatter Plot #1: Pick two of the following three variables and create a scatter plot to explore the relationship between them. Possible variables for SP #1: Height Foot length Hand length Scatter Plot #2: Pick two of the following three variables and create a scatter plot to explore the relationship between them. Possible variables for SP #2: Eye Color Hair Color Skin Color Scatter Plot #3: Pick one of the variables from the SP #1 list and one of the variables form the SP #2 list and create a scatter plot to explore the relationship between them.