**Representing Data Notes: Review How to Construct Graphs**

*\* when collecting and organizing data, you may need to construct charts before graphing:*

A) **Tally Chart (T Chart)–** making ticks under categories to organize info

B) **Frequency Chart –** using total numbers (instead of ticks) in categories to organize data

Example chart: Color of cars seen on vacation



Review Exercise

Create the following graphs on graph paper or looseleaf.

**\*Remember that all graphs need titles, numbers, and labels**

**1. Bar Graph**

Title: Favorite summer pastimes of grade 8 students

X axis – names of activities y axis –number of students

*Swimming – 12 Biking – 8 Computer/Electronic gaming – 6 Camping - 4*

**2. Double Bar Graph**

Title: Favorite summer pastimes of girls and boys in grade 8

X axis – names of activities y axis –number of students

*Swimming – Girls = 7, Boys = 5 Biking – Girls = 3, Boys = 5 Computer/Electronic gaming – Girls = 1, Boys = 5 Camping – Girls =2, Boys = 2*

**3. Line Graph**

Title: Temperature changes by the hour in the last 6 hours

X axis – Time (hours) Y axis – Temperature (degrees Celsius)

*12:00 - 20°C 1:00 - 23°C 2:00 - 23°C 3:00 - 24°C 4:00 - 24°C 5:00 - 23°*

**4. Pictograph**

Title: Number of students in grade 8 who biked to school in the last week

Legend – one @ equals 2 students who biked to school from each grade

*Grade 4 – 4 grade 5 – 10 Grade 6– 8 Grade 7 – 6 Grade 8- 10*

**5. Circle Graph**

Title: Favourite subjects of grade 8 students (%)

*Total number of students – 19*

*Math – 6 ELA – 4 Science – 4 SS – 5*

**Step one:** Convert to percentages. (Take the number for each category, and divide by the total number, then multiply by 100.)

Ex. Math – 6 divided by 19 = 0.3157… x 100 = 31.57…. which can be rounded to 32%

**Step two:** Take each percentage and multiply it by 360 (because there are 360 degrees in a full circle, and we want to find out how many degrees we need to color in for just this part of the circle)

Ex. Math – 32% or 0.32 x 360 = 115.2 which can be rounded to 115 degrees

**Step three:** Draw a circle with your compass and pencil. Draw a line from the center of the circle to the circumference (outside line) of the circle using your ruler.

**Step four:** Line up your protractor so that the line that is marked “0/180” sits on the line you drew in step 3. Make sure the dot in the center of the circle matches up with the center of the protractor. Use your pencil to mark where 115 is on the outside of the circle.

**Step five:** Remove the protractor and connect the mark you made for 115 to the center of the circle using your ruler. Label the space inside.

Ex. Label the space 32% Math

Repeat until the entire circle has been labelled.

**When done: Explore Microsoft Office** (Excel and Word) for how to insert / create these types of graphs. Create all of these and then compare the computer graphs to your graphs.