ACR Great Egret Study - Graph their Data!

Background information:

Scientists Scott and David want to learn as much as they can about Great Egrets. They have both spent a lot of time watching the birds while they look for food and nest. Though Scott and David learned a lot this way they still had many questions about the birds such as, "Where do they go when they leave the nest?" They wanted to know if they all stayed nearby or if some flew long distances.

To answer their questions, Scott and David needed to carefully capture the birds, so they could put data transmitters on the birds' backs. The transmitters go on the birds like a backpack. They are small and light, so they don't interfere with the birds' ability to fly.

The transmitters interact with satellites in space to determine where the birds are every 5 minutes, and once per day the transmitters send the data to the internet the same way cell phones transmit information. Scott and David can retrieve the

Egrets on a tree where they nest.

information about where the birds were at each 5-minute interval and map the information with a computer. This works like a cellphone GPS that can give someone directions to where they want to go. The difference is the data transmitters track where the birds have been rather than showing how to get somewhere.

David and Scott, like all good scientists, take careful records. Each time they capture a bird they give it a code to identify it. The code is made using the species name of the bird and the order the birds were captured. Great Egrets are given the code GREG. Snowy Egrets are given the code SNEG and Cattle Egrets are given the code CAEG. When scientists record the time of day they use 24 hour time. One AM is written as 1:00 and one PM is written as 13:00. Here is some of the information they recorded about the birds they captured.

Data

Bird ID Code	Date (m/d/yr)	Time Captured	Sex
GREG_1	6/8/2017	9:30	M
GREG_2	6/9/2017	12:25	F
GREG_3	6/10/2017	16:55	F
GREG_4	5/16/2018	14:45	F
GREG_5	6/8/2018	9:30	M
GREG_6	6/11/2018	15:10	F
GREG_7	7/3/2018	8:57	M
GREG_8	7/23/2018	11:07	F
GREG_9	9/19/2018	9:53	M
GREG_10	9/20/2018	11:14	M

Scott and Barbara are holding the bird while David takes a picture. Emi is recording data. They have already put the backpack on the bird and have a soft foam over its bill to keep it calm and safe.

Questions

Answer these questions on the back of your graph paper.

1. How many birds did the team capture?
2. How many of the birds were female?
   a. What fraction of the birds were female?

3. How any of the birds were capture before noon?
   a. What fraction of the birds were captured before noon?
4. What months did they capture birds in?
5. How many birds did they capture each month?
6. What fraction of the birds were captured in May?

Graphing

You will be making 2 bar graphs on your graph paper. Figure our how big your graphs should be to fit them both on the same page before you draw your graphs. Remember to: scale your graph, clearly label the axis, give each graph a clear title, and make a key for each graph.

A basic bar graph

Graph one:
Make a graph of the number of birds captured by month.
Put the number of birds on the y axis (vertical/ left side).
What will go on the X axis (horizontal/ bottom)?
How many bars will your graph have?
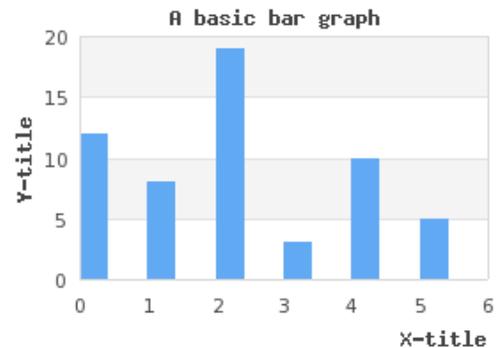
Graph two:
Make a graph of the number of male and female birds captured in the morning vs the afternoon. Color each bar on your graph a different color. Then make a key for your graph to show what information is in which colored bar.

GREG_9

You will have 4 bars on your graph:
- females capture in the morning
- females captured in the afternoon
- males captured in the morning
- male captured in the afternoon

Data analysis
After you finish your graphs answer the following questions on the back of your graph paper.

7. Which month did they capture the most birds?
8. Which month did they capture the fewest birds?
9. Is there a difference between the time of day males are captured and the time of day females are captured?
10. The researchers want to capture as many birds as possible. Using the information from your graphs what advice would you give them about when they should spend time trying to capture these birds?