***Scientific Method* – Notes Guide**

Name: _____

Saving the Kakapo

- What is a kakapo? _____
- The **Kakapo**, *Strigops habroptila* is a species of large, _____ _____ parrot endemic to New Zealand
- It is the world's heaviest parrot, weighing up to _____ pounds.

How are researchers trying to save them?

- Incubating eggs and _____
  - Almost _____ of the population consists of handraised birds
  - Thanks to the _____ intervention, more kakapos have been returned to the wild
- Regular Health Checks
  - Birds are checked annually by being _____, blood samples taken, and checked for _____
- Supplementary feeding
  - A special diet is put out in _____ so the parrots always have a food source

Something interesting happened…

- Scientists were collecting data to see how many chicks were hatched after the feeders were put out.
- They were happy to find that more _____ hatched thanks to the feeders.
- They also realized that there were more _____ chicks hatched from females who ate from the feeders.
- What could have caused this?

Basic Scientific Method

- Ask the Question: what are you trying to _____?
- Hypothesis: Make an _____ guess about what you think might happen; no wrong answers!
- Experiment: Always do many experiments to test your _____
- Collect Data: Collect your _____ and organize them for better understanding
- Analyze results: What did the _____ tell you?
- Conclusion: State the outcome of your _____ and how it affects your _____.
- Share your Findings: sharing with others who might have the same questions expands understanding of biology

Let's see how this method is applied to the kakapo recovery program…

Ask the Question

What do we know about the kakapo? What do they need to produce healthy chicks?

- It costs more _____ to produce a big male than a female.
- If resources are _____, a son can be produced.
- They picked a _____ variable to observe: diet.
- Variable: the thing you test that differs from the _____ group which is unchanged.
- ***Our question: _____?***

Hypothesis

- Hypothesis: an educated guess based on prior _____
- Write **ONLY ONE** of the hypotheses:
  - _____
- Does it matter if your hypothesis is proven false? _____

Experiment

Procedure:

1) ***Weigh all _____ birds***
2) ***For hens over _____ kg (_____ lbs), cut the supplemental diet (experimental group)***
3) ***For hens under _____ kg (_____ lbs), continue the supplemental diet (control group)***
4) ***After the breeding season, count the number of _____ and _____ chicks in each group***
5) ***Calculate the percentage of _____ chicks for each group***
6) ***Collect and compare data to _____ group***

Materials & Methods

- Weigh scale and feeder
  - Birds must get on the _____ to eat from the feeder
- High quality feed
  - High in _____ and _____ for hens to bulk up for breeding season

Collect data

- What percentage of male chicks were produced by hens on the supplemental diet? _____
- What percentage of male chicks were produced by hens on the reduced diet? _____

Analyze Results

- What do the results tell us? _____
- How do we know this is what the results mean? _____

What were the strengths of this experiment?

1) _____

2) _____

What were the weaknesses of this experiment?

1) _____

2) _____

Conclusion

- Write a 3-5 sentence conclusion, including the following:
- A summary of the experiment,
- Restate your hypothesis,
- Explain why the data proved your hypothesis true or false, and
- What would you do different to make the experiment more effective.

Write your conclusion here:

_____

_____

_____

_____

_____