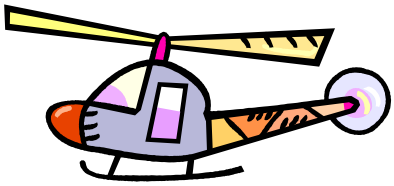
Name: _____Period: _____ Date: _____



Paper Helicopters

Part A: <u>Observing & Inferring</u>

Carefully cut out the pattern for "helicopter A" and follow the assembly directions. Test the device and find out how it works.

1. Record your ***observations and inferences*** of some possible things that could affect the flight.

_____

_____

_____

2. These things that could affect the flight are called _____

Part B: <u>Comparing and Contrasting</u>

Carefully cut out the pattern for "helicopters B & C" and follow the assembly directions.

3. What is the ***same*** about B, and C:

_____

_____

_____

Part C: <u>Controlled variables</u>

If we were going to have a race between helicopters B and C, there are things we must keep the same so the contest is fair.

4. These are called _____ variable

5. List the things (besides the thing listed above) that we must keep the same so the contest is fair:

_____

_____

Part D: <u>Identifying variables</u>

6. The one thing that is different between helicopters B & C is _____

7. This thing that is different is called the _____variable

8. The thing about the helicopters that we will measure as a result of this difference is _____

9. This is called the _____ variable

10. The way we will measure the responding variable is called the _____

Name: _____Period: _____ Date: _____

Paper Helicopters

Part E: Questioning

11. The question we want to answer is called the _____

12. Use the variables for B & C to write a research question on the lines below. Insert the things about the helicopters

_____

_____

Part F: Hypothesizing

13. To write a hypothesis we need to write an "_____" statement

14. Write your hypothesis for B & C. Insert the things about helicopters B & C

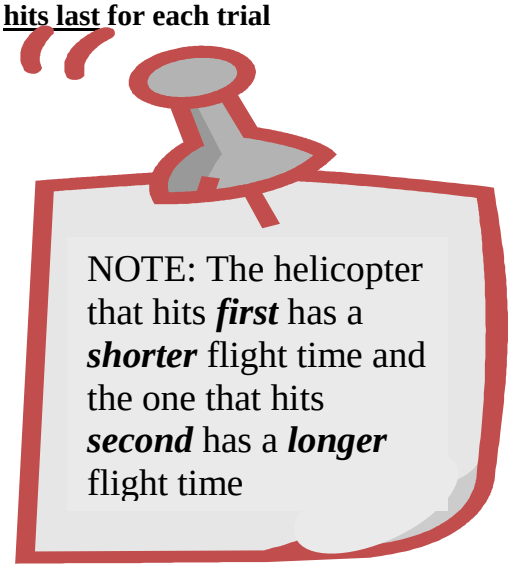
_____

_____

Part G: Experimenting

Write a 1 in the column below the letter of the helicopter that hits first and write a 2 in the column below the letter of the helicopter that hits last for each trial

Trial	B	C
1		
2		
3		
4		
5		
6		
7		



Part H: Analyzing Data

15. What factor between B & C did you test for to see its affect on the flight time_____

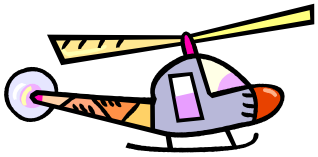
16. How did this factor affect the flight time?_____

Part I: Writing a conclusion

17. A _____is a judgment based on the results of an experiment.

18. Use your results to from the experiment with B & C to write a conclusion.

_____



Name: _____Period: _____ Date: _____

Paper Helicopters

Vocabulary (Write the word on the line next to its definition)

conclusion	How does… affect …	refutes
controlled variables	hypothesis	research question
dependent variable	If … then…	supports
	independent variable	

_____ The way the hypothesis should be phrased

_____ The effect you measure in an experiment

_____ The things you must keep the same in an experiment

_____ A testable educated guess

_____ When experiments show the hypothesis is right, we say it -?- it

_____ What you want to answer by experimenting

_____ The way a research question should be phrased

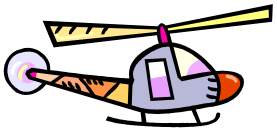
_____ The thing you change in an experiment

_____ A judgment based on the results of an experiment

_____ When experiments show the hypothesis is wrong, we say it -?- it

Use words from above to complete the sentences.

You may use words ***more than once*** or ***not at all***



Complete the following based on your experiments with helicopters B and C

The _____ _____ we wanted to answer was: "**How does** blade length **affect** flight time?" Our _____ was **"If** blade length increases **then** flight time increases. The _____ **variable** between helicopters B and C was the **length of the blade**. The _____ **variable** between B and C was the **flight time**. The _____ based on the results of the experiment was that as blade length increases flight time_____

(increases or decreases)