

# Writing Up an Investigation

Assignment – Teacher Edition

## I. Modified True or False

Decide whether the given statement is true or false. If false, provide an explanation on why the statement is incorrect.

1. A laboratory report is a written report that explains everything that happened in a scientific investigation.

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2. A laboratory report is usually made with an objective to communicate the findings of an experiment.

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3. In writing a laboratory report, one usually starts with the evaluation of the investigation.

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4. Processing data means giving meaning to the data collected.

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5. Doing several trials of the experiment provide a range of data that can be used to calculate the average.

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6. To compute for the average of the data given in 3 trials, add all the numbers in each trial then multiply it by 3.

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7. Graphs provide better visualization of data which makes the data analysis easier.

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8. In data analysis, it is necessary to look for patterns or trends to make sense of what the data could probably mean.

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9. Direct proportional relationship is evident in data wherein dependent variable decreases when the independent variable increases.

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10. In drawing conclusion, one must base it on personal opinion and not on data obtained.

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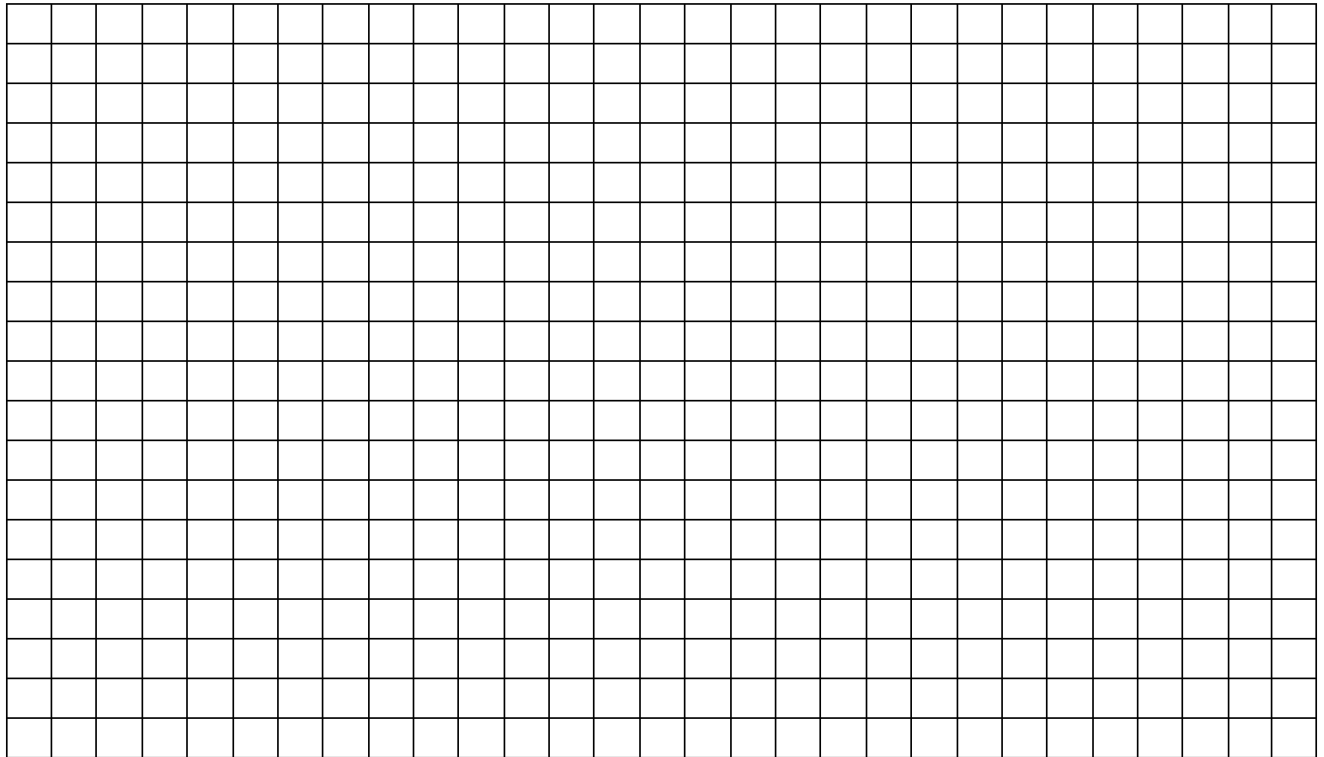
## II. Processing Data

The data below was recorded as part of lab investigating how the number of coils in an electromagnet affect the number of paper clips attracted to it.

<i>number of coils = 0</i>	<i>paper clips attracted = 0</i>	<i>number of coils = 20</i>	<i>paper clips attracted = 8</i>
<i>number of coils = 40</i>	<i>paper clips attracted = 18</i>	<i>number of coils = 60</i>	<i>paper clips attracted = 31</i>
<i>number of coils = 80</i>	<i>paper clips attracted = 46</i>	<i>number of coils = 100</i>	<i>paper clips attracted = 55</i>

1. On the space below, draw a data table to organize the given data.

2. Draw a line graph to show the relationship between the number of coils in an electromagnet and the number of paper clips it attracted.



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3. Write a conclusion based on the given data.

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### III. Interpreting Data and Results

The data below shows the growth of four plants in a three-week period. All four plants are of the same kind and height at the start of the experiment. However, each plant receives a certain amount of light per day.

Plant	Amount of Light per Day	Height in centimeters		
		Week 1	Week 2	Week 3
A	0 hours	0	0	0
B	4 hours	1	3	6
C	8 hours	1.5	4	8
D	16 hours	1	2	3

1. Draw a graph to easily interpret this result.

2. In this plant growth experiment, what variable is tested?

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3. Write **two (2)** conclusions that you can draw regarding the amount of light a plant was exposed to and how tall the plant grew.

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4. Use the graph to predict what will happen to another plant (Plant E) if it will be exposed to light for 24 hours.

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5. What variables would need to be controlled to make this test as fair as possible?

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## I. Modified True or False

Decide whether the given statement is true or false. If false, provide an explanation on why the statement is incorrect.

1. A laboratory report is a written report that explains everything that happened in a scientific investigation.

True

2. A laboratory report is usually made with an objective to communicate the findings of an experiment.

True

3. In writing a laboratory report, one usually starts with the evaluation of the investigation.

In writing a laboratory report, one usually starts with the processing of data.

4. Processing data means giving meaning to the data collected.

Data analysis means giving meaning to the data collected.

5. Doing several trials of the experiment provide a range of data that can be used to calculate the average.

True

6. To compute for the average of the data given in 3 trials, add all the numbers in each trial then multiply it by 3.

To compute for the average of the data given in 3 trials, add all the numbers in each trial then divide it by 3.

7. Graphs provide better visualization of data which makes the data analysis easier.

True

8. In data analysis, it is necessary to look for patterns or trends to make sense of what the data could probably mean.

True

9. Direct proportional relationship is evident in data wherein dependent variable decreases when the independent variable increases.

Inversely proportional relationship is evident in data wherein dependent variable decreases when the independent variable increases.

10. In drawing conclusion, one must base it on personal opinion and not on data obtained.

In drawing conclusion, one must base it on data obtained and not on personal opinion.

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## II. Processing Data

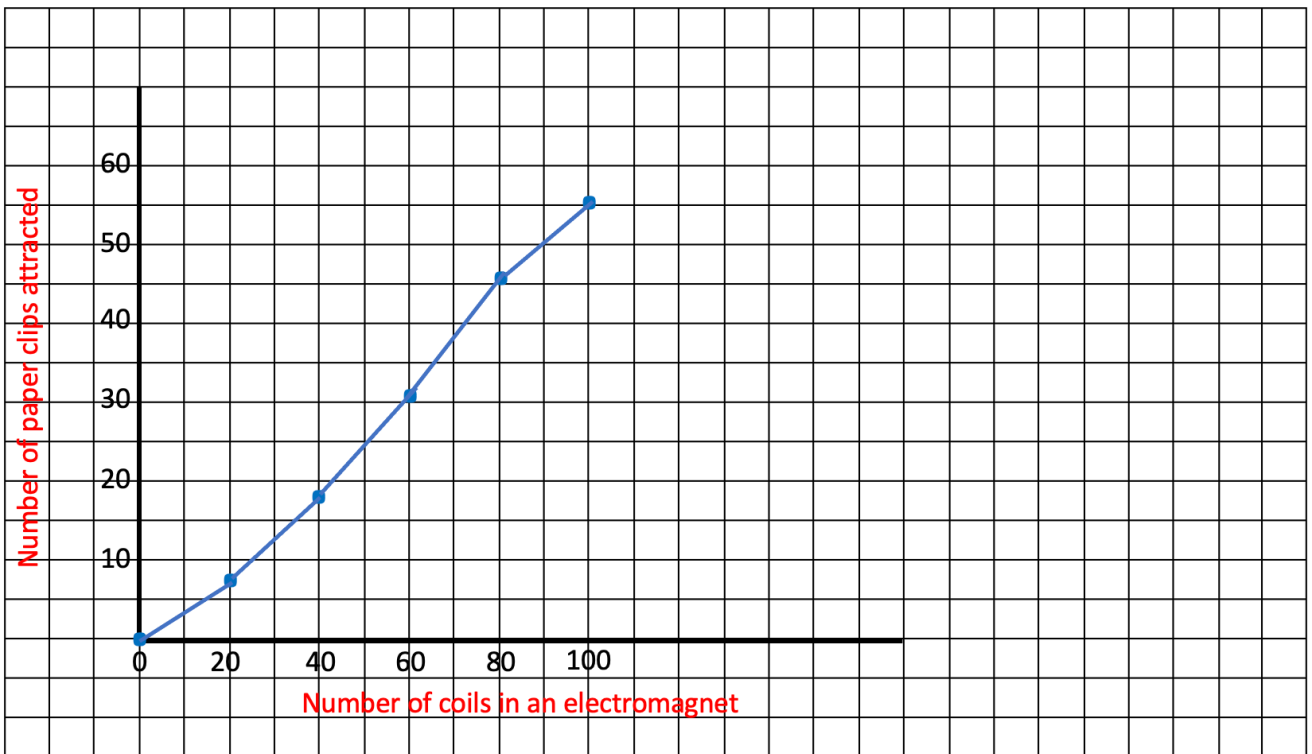
The data below was recorded as part of lab investigating how the number of coils in an electromagnet affect the number of paper clips attracted to it.

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1. On the space below, draw a data table to organize the given data.

Number of Coils in an Electromagnet	Paper Clips Attracted
0	0
20	8
40	18
60	31
80	46
100	55

2. Draw a line graph to show the relationship between the number of coils in an electromagnet and the number of paper clips it attracted.



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3. Write a conclusion based on the given data.

The more coils wrapped around the electromagnet, the stronger it becomes and attracts more paper clips.

### III. Interpreting Data and Results

The data below shows the growth of four plants in a three-week period. All four plants are of the same kind and height at the start of the experiment. However, each plant receives a certain amount of light per day.

Plant	Amount of Light per Day	Height in centimeters		
		Week 1	Week 2	Week 3
A	0 hours	0	0	0
B	4 hours	1	3	6
C	8 hours	1.5	4	8
D	16 hours	1	2	3

1. Draw a graph to easily interpret this result.



2. In this plant growth experiment, what variable is tested?

The amount of light exposure given to each plant.

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3. Write **two (2)** conclusions that you can draw regarding the amount of light a plant was exposed to and how tall the plant grew.

If no light is given to plant, it will not grow.

If too much light is given to plant, it will grow but grow slowly compared to those plants given not too low or too high light exposure.

4. Use the graph to predict what will happen to another plant (Plant E) if it will be exposed to light for 24 hours.

The plant will probably grow a little on Week 1 but will wilt on Week 2 and 3 due to too much light exposure.

5. What variables would need to be controlled to make this test as fair as possible?

Kind of plant used in the experiment, amount of water given to each plant, type of soil, location where the experiment is conducted, type or source of light