Name: _____

Year 7 - Individual Investigation

What are we eating? - compare the oil content of two different foods.

Food companies often purposefully advertise their product as healthy alternatives to shoppers in order to increase their sales, but are often high in oil. Aside from the oil content in various chip brands, what other foods could you investigate to reveal and compare the true contents of common foods? Examples

- 'Vegie-chips' – are they healthier alternative to normal chips?
- Popcorn – is popcorn a healthier alternative to normal chips? Are some popcorn brands healthier than others?
- Muffins – Do muffins have less oil than chips? Are banana muffins healthier than a chocolate muffin?
- Hot chips – is there more oil in hot chips from the tuck-shop compared with normal chips?

Title: _____

Hints	Features of this part of experiment report
Title	• Concisely outlines the problem being tested in the form "The Effect of (Independent Variable) on the (Dependent Variable)"

Aim:

Hints	Features of this part of experiment report
Scientific aim	• Scientific statement linking independent and dependent variables. • Usually begins with To determine, To investigate, To find out… etc

Variables:

Hints	Features of this part of experiment report
Variables	• To test this idea hypothesis one factor needs to be changed, this is called the independent variable. There is only one independent variable • The effect that is measured, when the independent variable is changed, is called the dependent variable. There is only one dependent variable • Controlled variables are the variables that need to be kept the same in every trial so that it is a fair test (Otherwise results cannot be compared). There are many controlled variables.

Dependent variable _____

Independent variable _____

Controlled variables (state 5 controlled variables)

Variable_____, instrument used to measure it_____, units _____.

Variable_____, instrument used to measure it_____, units _____.

Variable_____, instrument used to measure it_____, units _____.

Variable_____, instrument used to measure it_____, units _____.

Name: _____

Hypothesis:

Hints	Features of this part of experiment report
Hypothesis	• Educated guess about a possible outcome of the experiment • Usually written as "**If** ……(how the independent variable will change), **then** ……(effect on dependent variable). • Not a question. It must be a statement. • Avoid "I think. . ." , "We/I will …"

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Materials:

Hints	Features of this part of experiment report
Materials	• Should include all equipment used • Sizes and quantities of each piece of equipment used should be included • Include enough for all trials

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- _____
- _____
- _____
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- _____
- _____
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Name: _____

Method:

Hints	Features of this part of experiment report
Method	This is a detailed description of the scientific **procedure** that will be used to investigate the problem. Some things to remember to include in the method: 1. Identify the steps required to perform the investigation, write them in logical sequence and number each step. 2. Use "repeat" steps 3. If appropriate include safety instructions 4. No reference to person 5. Include specific names of equipment used and quantities measured 6. Outline what results will be measured and how (what with equipment) 7. Identify how the results will be presented 8. State the range for the independent variable (5 variations) and state the number of trials that will be conducted at each.

1. _____

Name: _____

Risk assessment:

Hints	Features of this part of experiment report
Risk Assessment	• Identify a risk involved in carrying out the experiment and safety precautions (including safety equipment) that can be taken to reduce the risk to yourself and other people. Specify hazard management procedure. See table below.

Safety Risk Specific potential risk and/or dangerous equipment	Precaution This is what can be done beforehand to reduce the risk of an accident happening	Hazard Management This is what can be done if an accident happens while the investigation is being carried out

Name: _____

Results:

Hints	Features of this part of experiment report
Scientific table of Results	• Suitable, concise title, e.g. Table 1: ……. • May be hand drawn in pencil with a **ruler** (if done by hand) • Fully enclosed (all data and headings), rows and columns • Appropriate headings with units if available • No units written inside the table (only in headings)

Name: _____

Space for table or graph

Name: _____

Discussion:

Hints	Features of this part of experiment report
Scientific Discussion	Explains (links cause and effect) the results of the experiment by commenting on the following: • What do the **results** show? • **Explain** (link cause and effect) trends or patterns in the data was collected. • **Use specific data** from the results to explain the trends (or lack of trends). This includes any unusual or unexpected findings. • Outline one possible future improvement to **the procedure** of the experimental design.

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Name: _____

Conclusions:

Hints	Features of this part of experiment report
Conclusion	• Total length of the conclusion should be no more than 6 sentences. • Briefly, restate the hypothesis • Identify the main findings (i.e. trends observed in the data) • Note improvements to the procedure and any further studies that can add value to the question studied in this investigation.

Name: _____