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| **Scientific Inquiry** You show that you can plan and carry out an experiment by:* Stating the problem as a question that can be tested with an experiment.
* Stating a reasonable hypothesis and a reason for making it.
* Planning how to control variables (those things that you have to keep the same or measure in the experiment)
* Writing the method (steps to follow) in such a way that anyone could do the experiment.
* Choosing the correct materials to use.
* Deciding if your method has given good results or if you need to do the experiment again or change the method and then do it again.

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| **Level of****Achievement** | Descriptor |
| 1-2 | * You have not done any of the things listed below.
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| 3-4 | With guidance you:* **State the problem**, but not in question form.
* Write a **simple hypothesis**. No reasoning with it.
* **Identify some** of the variables (those things that you have to keep the same or measure in the experiment).
* **Plan** a test, but it may not be set up in order to test fairly.
* Do not **evaluate** your procedure.
 |
| 5-6 | With guidance you:* **State the problem** **as a question**, but it may not be testable.
* Write a **hypothesis with a reason** for making it.
* **Identify** the main **variables** (those things that you have to keep the same or measure in the experiment).
* **Plan** **a fair test** with a good method and the right materials.
* **Attempt** to **evaluate** your procedure.
 |
| 7-8 | With guidance you:* **Identify** a problem you wish to investigate and **state it as a question** that can be **tested**.
* Write a **good hypothesis** and **give scientific reasons** for making it.
* **Identify and plan** to control **several variables** (those things that you have to keep the same or measure in the experiment). **Independent / Dependent** variables are labelled.
* **Plan a fair test** with a clear method and the right materials.

**Evaluate your procedure by:*** Deciding if the results of an experiment are **reasonable** (do they make sense?) and can **explain** any results or measurements that do not seem to fit with the others.
* **Suggesting** ways to **improve** the procedures.
* **Suggesting** **other experiments** which would allow you to learn more about the experiment you just finished.
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| **Data Processing** * You can organize qualitative data (descriptions in words, such as “the solution turns blue”) in many ways
* You can organize quantitative data (numbers, such as “the temperature was 27ºC”) in many ways.
* You can make tables, graphs, diagrams, keys, etc….
* You can turn a table into a graph and a graph into a table.
* You can read tables, graphs, diagrams, keys, etc…, and use them to make conclusions.

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| **Level of****Achievement** | Descriptor |
| 1-2 | * You have not done any of the things listed below.
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| 3-4 | With guidance:* You can **organize** and present data in **simple tables and graphs**.
* You attempt to change data but are not successful or make no attempt.
* You can **make an obvious conclusion**.
 |
| 5-6 | With guidance:* You can **organize** and present data in a correctly constructed table, graph, diagram, key, etc….
* You can **change data correctly** as needed.(calculating averages, turning tables into graphs, building keys, etc…)
* You can **make conclusions supported by the data**.
* You make some **attempt to explain** your conclusion using science facts and ideas.
 |
| 7-8 | With guidance:* You can **organize** and present your **data** **logically and clearly** in a correctly constructed table, graph, diagram, key, etc….
* You can **change data in** **many ways** (calculating averages, turning tables into graphs, building keys, using equations, etc…).
* You can **explain patterns, trends, or relationships** in your data.
* You can **interpret** your data **to make clear conclusions** and **explain** it using **science facts and ideas**.
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