[](http://www.google.com.au/imgres?um=1&sa=N&biw=1188&bih=585&hl=en&tbm=isch&tbnid=L6XcPvRFk7mVZM:&imgrefurl=http://www.inquiryinaction.org/classroomactivities/activity.php?id=39&docid=CC3703jdBVuPeM&imgurl=http://www.inquiryinaction.org/img/content/chapter7/7.3/making_density_tower.jpg&w=282&h=200&ei=P9nnUdyAA4fLkgWV24CwDA&zoom=1&ved=1t:3588,r:46,s:0,i:225&iact=rc&page=3&tbnh=160&tbnw=225&start=35&ndsp=17&tx=69.7391357421875&ty=69.65219116210937)**Year 8 Chemistry Investigation**

*Can you increase or decrease the density of water?*

Your group will first need to work out a method of measuring the density of pure water.

Chapter 6.3 in your text can help you do this.

You will need to use the formula : Density =

Then you will choose methods of altering the density to test eg adding salt or sugar.

You results section will contain your raw results along with the density worked out using the above equation.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| *These should form subheadings in your work* | **Details** | **Available**  **mark** | **Your**  **mark** |
| **Title** | Descriptive NOT Physics Investigation | 1 |  |
| **Aim** | Why are you doing this experiment? What do you want to find out? | 1 |  |
| **Hypothesis** | Correctly worded  Includes dependent and independent variables | 2 |  |
| **Independent Variable** | The variable I change (I for independent). When you change the independent variable the variable you are measuring (the dependent variable) will probably change too. | 1 |  |
| **Dependent Variable** | The variable you are measuring. Any change in this variable depends on what you do to the independent variable. | 1 |  |
| **Controlled Variables** | All the things you keep the same to make it a fair test. You should usually list at least three. | 2 |  |
| **Materials** | Complete  Listed  Detail eg 25g of salt or 3 x 250ml beakers | 2 |  |
| **Method** | * Step by step with numbers * Written in past tense * Complete * Labelled Diagrams * Explain how reliable results are achieved - trials/replicates, how variables are controlled | 1  1  1  2  3 |  |
| **Results** | Table - neat & clear with units | 3 |  |
| **Calculations** | Showing all working out | 3 |  |
| **Graph** | Includes Title, labels on each axis, correct units, regular spaced, legend for each line graph. Use a ruler, do it in pencil and make it neat | 5 |  |
| **Discussion** | * Errors * Effects of errors on results * Solutions | 1  1  1 |  |
| **Conclusion** | * What did the results show ? * Use figures from your results * Does this support your hypothesis? * Scientific reasons – YOU NEED TO DO SOME RESEARCH FOR THIS PART | 1  1  1  3 |  |
| Presentation  (not a subheading) | * Neat * Subheadings used * In order | 2 |  |
| **Total mark** | | **40** |  |

**TITLE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (1 mark)

AIM: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (1 mark)

1. Write a hypothesis (2 marks)

2. What is the independent variable? (factor you changed) (1 mark)

3. What is the dependent variable? (factor you measure) (1 mark)

3. List 3 controlled variables? (factors you keep the same) (2 marks)

Materials: List the Materials apparatus/equipment you will use? (2 marks)

Method : Write, in point form, what you plan to do in your experiment. (3 marks)

(step by step with numbers, write in past tense, is complete)

Labelled Diagrams of your equipment/experiment (2 marks)

How will your group make sure reliable results are obtained? (2 marks)

RESULTS: TABLE (3 marks)

RESULTS: Calculations (3 marks)

**GRAPH ----** Draw the graph. (5 marks)

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(Title, Label Axis, Measurements, Regular Scale, Neat, Accurate, Use Pencil & ruler

legend for each line graph)

What trend can you see?DISCUSSION . How could the fairness /accuracy of the experiment be improved? (3 marks)

Errors

Effect of Errors on your results

Solutions -Ways to improve experiment

#### CONCLUSION

What did the results show? (2mark)

(Use figures from your results)

Does this support your hypothesis? (1mark)

RESEARCH scientific reasons: Why are the densities different? (3 marks)