**An Inquiry into Measurement using F*ormal Units of Measurement***



**To find the Area of a triangle multiply the base by the height and then divide by two.**

**To find the Area of a rectangle multiply the width by the length.**

**To find the Perimeter of an object measure each side and add all the lengths**.

**An Inquiry into Measurement using *Formal Units of Measurement***

 **Learning Intention:** To accurately measure the length, capacity, perimeter, mass and area with formal units of measurement.

**Scenario:** 3F is to be given a new classroom. The new classroom is 1/3 bigger in area than the current classroom.

The classroom has the following requirements.

* Desks for 30 students
* Two Standing desks
* Teacher desk
* Reading corner
* Computer hub with six computers
* Whiteboard
* Large pin board
* Recycle bin
* Garbage bin
* Supply cupboard.

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 **Mathematics underpinning the inquiry:**

You will need to:

**CURRENT CLASSROOM**- calculate (workout) the **perimeter and area** of the current classroom.

**STUDENT DESKS**- need to accurately measure the **length and width** of the current desks and work out how many you will need for 30 students

**TEACHER DESK -** - calculate the required **area** for the reading corner and the teacher’s desk. What would the dimensions of the **perimeter** be?

**READING CORNER** – Calculate how much area you could have for a reading corner. What will it have in it and how will it be set up?

**COMPUTER HUB** - calculate the **height and length** of the pin board and whiteboard, and where they will be placed.

**WHITEBOARD –** calculate the height and width of the new whiteboard.

**LARGE PINBOARD-** calculate the height and width of the new pin board.

**RECYCLE BIN-** calculate the capacity of the current recycle bin. How many litres is allocated per student at present. How much bigger should the new recycle bin be? What will the new capacity be?

**CLASS BIN -** calculate what **capacity** the new classroom bin should be. First, work out how much rubbish 24 students makes in one day. If there are thirty students in the new classroom how much capacity should the new bin be?

**SUPPLY CUPBOARD**- calculate the dimensions of the current **height, width and depth** of the current classroom cupboard. The new classroom’s cupboard will be the same size as the current one. What will be its dimensions and how much **area** will it take up?

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 Make a detailed drawing showing all measurements **and a table showing the measurements of each of the requirements above.**

**CHECKLIST:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Current Classroom** | **Measurements** | **New Classroom** | **Measurements** |
| **Classroom** | **Perimeter** |  | **Perimeter** |  |
|  | **Area** |  | **Area** |  |
| **Student desks** | **Length** |  |  |  |
|  | **Width** |  |  |  |
|  | **Area**  |  | **Area**  |  |
| **2 standing desks** | **Area H** **W** |  | **Area** |  |
| **Teacher desk** | **Area H** **W** |  | **Area** |  |
| **Reading Corner** | **Area H** **W** |  | **Area** |  |
| **Computer hub** | **Area H** **W** |  | **Area** |  |
| **Whiteboard** | **Height** |  | **Height** |  |
|  | **Width**  |  | **Width** |  |

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| --- | --- | --- | --- | --- |
| **Item** | **Current Classroom** | **Measurements** | **New Classroom** | **Measurements** |
| **Pin board** | **Height** |  | **Height** |  |
|  | **Width**  |  | **Width** |  |
| **Recycle bin** | **Height** |  | **Height** |  |
|  | **Width** |  | **Width** |  |
|  | **Depth** |  | **Depth** |  |
|  | **Capacity** |  | **Capacity** |  |
| **Garbage bin** | **Capacity** |  | **Capacity** |  |
| **Supply cupboard** | **Height** |  | **Height** |  |

**An Inquiry into Measurement using *Formal Units of Measurement***

**Draw your new classroom here! Make sure you put everything in its place. Use a ruler and include the measurements for each item. NEW CLASSROOM**

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**Reflection:**

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| --- | --- |
| **Place a star on the scale for how you rate yourself in each of these skill areas:** |  |
| **Research Skills**I used a range of methods to collect information, data and observations. |    |
| **Thinking Skills**I problem solved by brainstorming, comparing or selecting options and testing ideas. |    |
| **Social Skills**I effectively participated in group tasks and reflected on the effectiveness of the team.I tried to resolve conflict if it occurred. |   |
| **Communication Skills**I listened to and contributed to group discussions, shared information and negotiated or compromised. |   |
| **Self-management Skills**I used personal strengths to achieve my aim and stayed focused on the set task |    |
| **Mathematical Understandings**I have increased my knowledge about using formal units of measurement, such as cm, m, kg etc.I have improved my accuracy using measurement tools, such as rulers, metre rules, measuring jugs, scales etc.I have improved my knowledge about Measurement. |     |