The Spreadsheet

The spreadsheet consists of:

- **Cells** (the intersection of a row and column)
- **Addresses** (column letter and row number, e.g., A1, C12)

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Basic Considerations

- A typical computer spreadsheet has 256 rows identified as A through IV and 65536 rows. This gives a total of 16,777,216 cells.
- A cell contains data. Data can be:
  - constants (numbers)
  - labels (such as column headings)
  - formulas (for calculations)

The Spreadsheet

Spreadsheets can contain:

- **Values** such as numbers and dates
- **Labels** that explain what a value means, such as column and report headings

The Spreadsheet

Formulas allow you to create instructions using mathematical expressions and commands:

- (+) (plus)
- (-) (minus)
- (*) (multiplication)
- (/) (division)
- Sum
- Average
6.5 The Spreadsheet

Automation recalculation
- Any time a change is entered into the spreadsheet, all data related to the change automatically updates.

6.6 Spreadsheet Features

- Functions (e.g., SUM, AVG, SQRT) are used to automate complex calculations
- Macros let you store keystrokes and commands so they can be played back automatically
- Templates offer ready-to-use worksheets with labels and formulas already entered

6.7 Spreadsheet Features

Linking spreadsheets together
When values change in one spreadsheet, all linked spreadsheets update automatically
Spreadsheet Features

Database capabilities
- Search for information
- Sort the data by a specific criteria
- Merge the data with a word processor
- Generate reports

“What If?”

- Spreadsheets allow you to change numbers and instantly see the effects of those changes.
  - “What if I enter this value?”
- Equation solvers
  - Some spreadsheets generate data needed to fit a given equation and target value.

Filling

Cell references can be Absolute
  $=S6*C6+C6$
Charts allow you to turn numbers into visual data:
- Pie charts (show relative proportions to the whole)
- Line charts (show trends or relationships over time)

Bar charts (use if data falls into a few categories)

Scatter charts (use to discover, rather than to display, a relationship between two variables)

The spreadsheet can be used effectively where ever numerical information has to be manipulated. Its use is not confined to mathematics. It could be used for working with populations in Social Science, for determining budgets in Design and Technology, for analysing data gathered in a science experiment, and so on.
Class projects

Atmospheric CO\textsuperscript{2} and Global

<table>
<thead>
<tr>
<th>Thousands of Years Ago</th>
<th>Carbon Dioxide</th>
<th>Change in Global Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2.7</td>
<td>0.6</td>
</tr>
<tr>
<td>110</td>
<td>2.5</td>
<td>-0.9</td>
</tr>
<tr>
<td>120</td>
<td>2.9</td>
<td>-1.3</td>
</tr>
<tr>
<td>130</td>
<td>2.4</td>
<td>-1.9</td>
</tr>
<tr>
<td>140</td>
<td>2.1</td>
<td>-1.5</td>
</tr>
<tr>
<td>150</td>
<td>2.4</td>
<td>-1.5</td>
</tr>
<tr>
<td>160</td>
<td>2.0</td>
<td>-1.3</td>
</tr>
<tr>
<td>170</td>
<td>2.3</td>
<td>-1.1</td>
</tr>
<tr>
<td>180</td>
<td>2.6</td>
<td>-0.9</td>
</tr>
<tr>
<td>190</td>
<td>2.5</td>
<td>-0.9</td>
</tr>
<tr>
<td>200</td>
<td>2.4</td>
<td>-0.9</td>
</tr>
<tr>
<td>210</td>
<td>2.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>220</td>
<td>2.3</td>
<td>-0.6</td>
</tr>
<tr>
<td>230</td>
<td>2.2</td>
<td>-0.4</td>
</tr>
</tbody>
</table>

Figure 1: Data chart showing carbon dioxide concentration and global temperature changes.