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1.1–1.2 Science and technology

1 What is science? ____________________________________________________________________

__________________________________________________________________________________

__________________________________________________________________________________

[2]

2 The two areas into which the many branches of science are grouped are natural sciences and __________________ sciences.

[1]

3 Choose which area of study matches each branch of science. Put A, B, C, D, E, F, G, H, I or J in the boxes provided in the right-hand column.

<table>
<thead>
<tr>
<th>BRANCH OF SCIENCE</th>
<th>AREA BEING STUDIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Meteorology</td>
<td>Healing</td>
</tr>
<tr>
<td>B Chemistry</td>
<td>Animals</td>
</tr>
<tr>
<td>C Geology</td>
<td>Living things</td>
</tr>
<tr>
<td>D Medicine</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>E Zoology</td>
<td>Objects beyond earth</td>
</tr>
<tr>
<td>F Physics</td>
<td>Behaviour of matter</td>
</tr>
<tr>
<td>G Biology</td>
<td>Number, quantity and shape and space</td>
</tr>
<tr>
<td>H Botany</td>
<td>Behaviour of the composition of matter</td>
</tr>
<tr>
<td>I Mathematics</td>
<td>Structures of the earth</td>
</tr>
<tr>
<td>J Astronomy</td>
<td>Plants</td>
</tr>
</tbody>
</table>

[5]

4 What is technology? ____________________________________________________________________

__________________________________________________________________________________

__________________________________________________________________________________

[2]
5 Complete the table below by identifying SIX inventions. Describe some of the advantages and disadvantages of each one.

<table>
<thead>
<tr>
<th>INVENTION</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6 Imagine you are being funded to invent something that will be useful in hospitals. Give its

a) i) name ____________________________

ii) use __________________________________

iii) advantages __________________________________

iv) disadvantages __________________________________

b) Provide a diagram or illustration of your invention.
Choose TWO scientists you know about and state what made each of them famous.

[4]

Give the meaning of these key terms.

a) Observation

b) Experiment

c) Application

[3]

1.3 Scientific skills and methods

Why is it necessary for scientists to be organized?

[2]

Indicate whether each of the following is TRUE or FALSE.

a) The main products of science are lab skills and data.

b) Scientists always try to search for answers to their own questions.

c) Science is a process of inquiry.

d) Scepticism is very important to science.

e) One who is curious may never be a good scientist.

f) A good scientist is orderly in work and disciplined in thought.

g) Modern science emerged about 1950.

h) At present psychology is seen only as a social science.

i) Science is a system of beliefs.

j) In time, science will solve all the problems of society.

[10]
Use the clues to complete this crossword puzzle on science skills.

Across
2. State expected outcomes based on experience
8. Use instruments to acquire information
9. Control different factors that might affect test results
10. Group objects according to certain characteristics
11. Carry out a set of activities in an attempt to achieve a goal
12. Translate information into tables, diagrams, words for it to be easily understood

Down
1. Collect information via the senses
2. Formulate an orderly set of events which may lead to achieving a goal
3. Deduce or conclude
4. Explain or ________ numerical information
5. Make statements in such a way that they can be verified
6. Gather all ideas on paper
7. Gather numerical information or collect ________

[13]
1.4 Writing an experiment report

1 Why is it necessary for scientists to write a detailed report of their experiments?

2 The following are parts from various lab reports. Identify under which section of the report each should be written.

<table>
<thead>
<tr>
<th>PART OF LAB REPORT</th>
<th>SECTION OF LAB REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) The flame was green because a reaction had occurred.</td>
<td></td>
</tr>
<tr>
<td>b) All the rods were of the same thickness.</td>
<td></td>
</tr>
<tr>
<td>c) The solution was heated over a Bunsen flame.</td>
<td></td>
</tr>
<tr>
<td>d) It was found that none of the metals could rust.</td>
<td></td>
</tr>
<tr>
<td>e) To examine the activity of cells under a microscope.</td>
<td></td>
</tr>
<tr>
<td>f) Acid and alkali reactions.</td>
<td></td>
</tr>
</tbody>
</table>

1.5–1.6 Making and labelling scientific drawings

1 Examine the diagram of the eye below. List FOUR things which are incorrect about it for a scientific diagram.

a) ______________________

b) ______________________

c) ______________________

d) ______________________
2 Explain the meaning of the following terms.
   a) Annotated ________________________________
      ________________________________
      ________________________________
   b) Magnification ________________________________
      ________________________________
      ________________________________
   c) Specimen ________________________________
      ________________________________
      ________________________________

3.7 Scientific apparatus

1 Draw the apparatus named in each box below.

<table>
<thead>
<tr>
<th>Conical flask</th>
<th>Test tube</th>
<th>Beaker</th>
</tr>
</thead>
</table>

[3]