Developing/Secure Pathway

End of Topic Assessment

Space

Analysis and Targets

<table>
<thead>
<tr>
<th>No.</th>
<th>Score</th>
<th>Below/On/Above</th>
<th>Target for next Assessment. How will you achieve it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>____/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>____/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>____/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>____/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>____/6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>____/4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now complete the “Next Step” sheet you’ve been given and when finished attach it to the back of the paper.
Q1. (a) Sita made a model of three parts of the solar system, the Sun, Earth and Moon. She used a marble, a torch and a tennis ball.

Draw a line from each part of the solar system to the object she used.

Draw only three lines.

<table>
<thead>
<tr>
<th>part of the solar system</th>
<th>object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>marble</td>
</tr>
<tr>
<td>Earth</td>
<td>torch</td>
</tr>
<tr>
<td>Moon</td>
<td>tennis ball</td>
</tr>
</tbody>
</table>

(b) The table below shows the order of some of the planets in our solar system.

Complete the table to show the positions of the Earth, Neptune and the Sun.

<table>
<thead>
<tr>
<th>Mercury</th>
<th>Venus</th>
<th>Mars</th>
<th>Jupiter</th>
<th>Saturn</th>
<th>Uranus</th>
</tr>
</thead>
</table>

2 marks
(c) The diagram shows a satellite in orbit around the Earth.

(i) Give one use of a satellite.

........................................................................................................................................
........................................................................................................................................

(ii) Which force keeps the satellite in orbit around the Earth?
Tick the correct box.

gravity [ ] friction [ ]

air resistance [ ] magnetism [ ]

2 marks
maximum 6 marks
Q2. Lisa drew a picture of herself standing at four different positions on the Earth, not to scale.

(a) (i) Draw an arrow at each of the four positions to show the direction of the force of gravity on Lisa. 1 mark

(ii) The drawing at position A shows Lisa holding a ball on a string. Draw the ball and string in positions B, C and D. 1 mark
The drawing below shows:

- that the Earth goes round the Sun;
- that the Earth rotates on its axis.

Choose from the list below to answer parts (i) and (ii).

60 seconds  60 minutes  24 hours  7 days  28 days  365 days

(i) How long does it take for the Earth to go round the Sun once?

..............................................................................................................

1 mark

(ii) How long does it take for the Earth to rotate on its axis once?

..............................................................................................................

1 mark

Maximum 4 marks
Q3. David lives in Britain. He sees that the Sun seems to move across the sky.

(a) Where does the Sun rise in the morning? Tick the correct box.

in the north □       in the south □
in the west □        in the east □

(b) (i) At what time of day is the Sun highest in the sky?

........................................................................................................................................... 2 mark

(ii) In which direction will David see the Sun when it is highest in the sky? Tick the correct box.

towards the north □  towards the south □
towards the west □    towards the east □

1 mark

(c) Where does the Sun set in the evening? Tick the correct box.

in the north □       in the south □
in the west □        in the east □

1 mark

(d) Explain why the Sun seems to move across the sky.

........................................................................................................................................... 1 mark

(e) Light from the Sun takes about 8 minutes to get to the Earth. How long does light from other stars take to get to the Earth? Tick the correct box.

more than 8 minutes □
8 minutes □
less than 8 minutes □
zero minutes □

1 mark
Maximum 6 marks
The table below gives information about the planets of the Solar System. They are listed in alphabetical order.

<table>
<thead>
<tr>
<th>planet</th>
<th>average distance from the Sun in million km</th>
<th>diameter in km</th>
<th>time for one orbit round the Sun</th>
<th>time for one rotation on its axis in hours</th>
<th>temperature on surface of planet in °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth</td>
<td>150</td>
<td>13 000</td>
<td>365 days</td>
<td>24</td>
<td>+22</td>
</tr>
<tr>
<td>Jupiter</td>
<td>780</td>
<td>140 000</td>
<td>12 years</td>
<td>9.8</td>
<td>−150</td>
</tr>
<tr>
<td>Mars</td>
<td>230</td>
<td>6800</td>
<td>687 days</td>
<td>25</td>
<td>−23</td>
</tr>
<tr>
<td>Mercury</td>
<td>58</td>
<td>4900</td>
<td>88 days</td>
<td>1400</td>
<td>+350</td>
</tr>
<tr>
<td>Neptune</td>
<td>4500</td>
<td>51 000</td>
<td>165 years</td>
<td>16</td>
<td>−220</td>
</tr>
<tr>
<td>Pluto</td>
<td>5900</td>
<td>2300</td>
<td>248 years</td>
<td>150</td>
<td>−220</td>
</tr>
<tr>
<td>Saturn</td>
<td>1400</td>
<td>120 000</td>
<td>29 years</td>
<td>10.2</td>
<td>−180</td>
</tr>
<tr>
<td>Uranus</td>
<td>2900</td>
<td>51 000</td>
<td>84 years</td>
<td>17</td>
<td>−210</td>
</tr>
<tr>
<td>Venus</td>
<td>110</td>
<td>12 000</td>
<td>225 days</td>
<td>5800</td>
<td>+480</td>
</tr>
</tbody>
</table>

(Data obtained from *The Guinness Book of Astronomy*, Patrick Moore; published by Guinness 1992)

(a) Explain why Neptune and Pluto are the coldest planets.

(b) Explain why there could be no liquid water on the surface of:
   (i) Mars
   (ii) Venus

(c) On which planet would the time between sunrise and sunset be shortest?

(d) Which planet has the shortest year?

(e) Give the name of the force which keeps the planets in their orbits.
On 11th August 1999 there will be an eclipse. The shadow of the Moon will pass over part of the Earth.

(a) The diagram below shows the Moon, the Moon’s shadow and the Earth.

![Diagram](image)

On the diagram, draw an arrow pointing towards where the Sun must be.  

(b) At about midday the Moon’s shadow will pass over Cornwall in England. Where, in the sky, is the Sun at midday?

Tick the correct box.

- towards the North
- towards the West
- towards the East
- towards the South
Limehurst Science Department

(c) The map shows the shape of the Moon’s shadow and the path it will take across Cornwall.

The Moon’s shadow will take about 2 minutes to move across a house in Falmouth. It will take less than 2 minutes to move across a house in Padstow.

Explain why it will take less time for the Moon’s shadow to move across a house in Padstow than to move across one in Falmouth.

......................................................................................................................
......................................................................................................................
......................................................................................................................

1 mark

(d) Why does the Moon’s shadow move over the surface of the Earth?

......................................................................................................................
......................................................................................................................

1 mark

Maximum 4 marks
Each of the observations shown below has one explanation.

Draw a line from each observation to the correct explanation.

<table>
<thead>
<tr>
<th>observation</th>
<th>explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A ship going out to sea goes out of sight</td>
<td>The Earth spins on its axis.</td>
</tr>
<tr>
<td>We have day and night.</td>
<td>The Earth is a sphere.</td>
</tr>
<tr>
<td>We have summer and winter.</td>
<td>The Earth orbits the Sun and the Earth's axis is tilted.</td>
</tr>
<tr>
<td>One year on Earth is 365 days.</td>
<td>Gravity attracts objects towards the Earth.</td>
</tr>
<tr>
<td></td>
<td>The Earth orbits the Sun.</td>
</tr>
</tbody>
</table>