6-7A A Function of Time

A Preview of Lesson 6-7

On a cold morning, you may “see” your breath as the water vapor condenses when you exhale. But otherwise, you probably don’t think much about breathing. Breathing is something we do naturally, without even thinking about it. In this lab, you will learn how breathing is a function of time.

TRY THIS

partner.

does the breathing, and the other is the timer. When the timer
the first student begins to count the number of times he or she
After one minute, the timer says “Stop,” and the first student
number of breaths.

more times and record each result.

can of the six results. This is the average number of breaths

able and use this average to complete it.

<table>
<thead>
<tr>
<th>Minutes</th>
<th>Minutes x Average Breaths per Minute</th>
<th>Total Breaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2 x 2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 x 2</td>
<td></td>
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<tr>
<td>4</td>
<td>4 x 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5 x 2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6 x 2</td>
<td></td>
</tr>
</tbody>
</table>

the minutes are called input values, and the total breaths are called
The middle column contains the function rule. When you input a
function rule, you get an output value. On what does the total
breaths depend? In this case, the total number of breaths depends on
number of minutes. So, the number of breaths is a function of time.

ON YOUR OWN

the ordered pairs (minutes, breaths) on a coordinate plane. See students’ work.

any patterns in the graph. The points should be in a line.

you use the graph to estimate the number of breaths you take in
or? Extend the line.

e the number of minutes. Write an expression for the total number
of breaths you take in m minutes. See margin.

this lab using number of heartbeats per minute. See students’ work.

Additional Answer

4. Sample answer: If you take 20
breaths in one minute, the
expression is 20m.