

<b>Student Task</b>	Fill in a frequency chart showing the results of a duckling survey taken by a nature club. Calculate two measures of center and then determine how to change the number of ducklings surveyed but not change the mean number of ducklings in the sample.
<b>Core Idea 5 Statistics</b>	<b>Students deepen their understanding of statistical methods used to display, analyze, compare and interpret different data sets</b> <ul style="list-style-type: none"><li>• Make predictions and justify conclusions that are based on data</li><li>• Construct a frequency distribution for a given set of data</li><li>• Analyze data, including finding measure of center and spread, presented in a frequency distribution</li><li>• Organize and consolidate mathematical thinking through communication</li></ul>

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## Ducklings

This problem gives you the chance to:

- fill in a frequency chart
  - work with median and mean
- 



The local nature club is carrying out a survey of the number of ducklings in each family of ducks in the lake.

Here are the results of their survey:

4, 7, 6, 5, 8, 7, 5, 4, 10, 4, 9, 6, 5, 4, 4, 5, 9, 8, 4

1. Write the results of the survey in the table. The first box has been completed for you.

Number of ducklings in a family	4	5	6	7	8	9	10
Number of families	6						

2. Find the median number of ducklings in a family. \_\_\_\_\_ ducklings  
Show your work.

3. Calculate the mean number of ducklings in a family. \_\_\_\_\_ ducklings  
Show your calculations.

4. Another family of ducks, that had been missed in the survey, is seen.  
When this family is put into the survey the mean number does not change.  
How many ducklings are there in this newly identified family? \_\_\_\_\_ ducklings  
Explain how you know this.

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Ducklings		Grade 7						Rubric																	
The core elements of performance required by this task are: <ul style="list-style-type: none"> <li>• fill in a frequency chart</li> <li>• work with median and mean</li> </ul> Based on these, credit for specific aspects of performance should be assigned as follows								points	section points																
1. Gives correct answer: <table border="1" data-bbox="248 510 1134 667" style="margin: 10px auto;"> <tr> <td>Number of ducklings in a family</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td>Number of families</td> <td>6</td> <td>4</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>1</td> </tr> </table>								Number of ducklings in a family	4	5	6	7	8	9	10	Number of families	6	4	2	2	2	2	1	1	1
Number of ducklings in a family	4	5	6	7	8	9	10																		
Number of families	6	4	2	2	2	2	1																		
2. Gives correct answer: <b>5</b>  Shows correct work such as: There are 19 families. The middle family (the 10 <sup>th</sup> one) has 5 ducklings.								1  1	2																
3. Gives correct answer: <b>6</b>  Shows correct work such as: <b>114</b> <b>÷ 19</b>								1  1 1	3																
4. Gives correct answer: <b>6</b>  Gives a correct explanation such as: For the mean to stay the same, the extra number has to equal the mean. or Shows a correct calculation								1  1	2																
<b>Total Points</b>									<b>8</b>																