

Possible misconceptions and errors

Possible solutions

Phase	LESSON TASK QUESTION 1																																															
	1. Your first responsibility at Custom T-Shirts is to make a table and a graph that show how much a customer will be charged for various numbers of shirts. Include the cost of up to 100 shirts.																																															
	Possible Solutions	Possible Questions	Misconceptions/Errors	Questions to Address Misconceptions/Errors																																												
E X P L O R E	Look for indicators of students' understanding: <ul style="list-style-type: none"> <li>of the base fee being a one-time charge.</li> <li>of the price per shirt.</li> <li>of a systematic organized way of recording and graphing information.</li> </ul>	Ask questions such as: <ul style="list-style-type: none"> <li>How did you find the different prices?</li> <li>I see that you go from 1 to 5 to 15 then 50 shirts. Why did you choose these numbers? If you were asked to make an organized table, how could you do that? Why do you think you might be asked make your table that way?</li> <li>What patterns do you see in the table?</li> <li>How much would zero shirts cost? Why? Where do (would) you see this in your table?</li> <li>If you wanted to find the cost of buying more than 100 shirts, what would you do?</li> <li>How would you find the cost of buying 1000 shirts?</li> <li>Explain in your own words what _____ (another student) said.*</li> </ul>	<ul style="list-style-type: none"> <li>Failing to recognize the 15 as a constant that must be added into the price of the shirts (i.e., they just multiply \$8 times the # of shirts).</li> <li>Confusing the constant fee (15) and the price per shirt (8) in their calculations.</li> <li>Thinking that the relationship is proportional, i.e., doubling the cost of one shirt to figure out the cost of two shirts</li> <li>Including every number of shirts from 1 to 100.</li> </ul>	<ul style="list-style-type: none"> <li>If Custom T-Shirts sets up your design but didn't print any shirts, how much would it cost you? If they printed 1 shirt, how much would it cost you? Why do you think this?</li> <li>How much would you have to pay for 5 shirts? What does it mean to multiply 5 by 15?</li> <li>Explain how you figured out the cost for one shirt. What was the \$15 for? What was the \$8 for? For a second shirt will you have to pay both of these again [listen to their explanation – they may misunderstand the context].</li> <li>Your table will provide a lot of detail, but is there a way to give the customer an approximate cost without listing every possible number of shirts?</li> </ul>																																												
	Making a table: <table border="1"> <thead> <tr> <th>No. of Shirts</th> <th>Price \$</th> <th>No. of Shirts</th> <th>Price \$</th> </tr> </thead> <tbody> <tr><td>0</td><td>15</td><td>1</td><td>23</td></tr> <tr><td>10</td><td>95</td><td>5</td><td>55</td></tr> <tr><td>20</td><td>175</td><td>15</td><td>135</td></tr> <tr><td>30</td><td>255</td><td>50</td><td>415</td></tr> <tr><td>40</td><td>335</td><td>30</td><td>255</td></tr> <tr><td>50</td><td>415</td><td>75</td><td>615</td></tr> <tr><td>60</td><td>495</td><td>100</td><td>815</td></tr> <tr><td>70</td><td>575</td><td></td><td></td></tr> <tr><td>80</td><td>655</td><td></td><td></td></tr> <tr><td>90</td><td>735</td><td></td><td></td></tr> <tr><td>100</td><td>815</td><td></td><td></td></tr> </tbody> </table>				No. of Shirts	Price \$	No. of Shirts	Price \$	0	15	1	23	10	95	5	55	20	175	15	135	30	255	50	415	40	335	30	255	50	415	75	615	60	495	100	815	70	575			80	655			90	735		
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