|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ∆ Heat  (paper LAB DATA)  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Draw two molecules into Box A and two molecules into Box B.
2. Cut four strips of colored paper, as skinny as possible.
3. For the strips of paper in the HOT BOX the molecules are hotter, so you will need to *double the length* of each strip of paper. Make them twice as long.
 |  |  |  |
|  | Cold Box. In here there are two gas molecules at 200 kelvins. They bounce off the walls \_\_\_\_\_\_\_ times. |  | Hot Box. In here there are two gas molecules at 400 kelvins. They bounce off the walls \_\_\_\_\_\_\_ times. |

 |
| Option One | 1. Make a little table:
 | 1. Make a graph for your table (label your axes)
 | 1. When the gas collides with the wall of the box it causes pressure. Based on the number of hits, pressure seems to be (directly / inversely) related to temperature of gas molecules.
2. What do you predict would happen to the number of hits if you had two boxes with the same temperature but one box was ½ the size of the other box? Circle choice:
	1. the smaller box would have twice as many wall hits
	2. each box would still have the same number of hits
	3. the smaller box would have half as many wall hits
	4. other…
 |
| Temperature [kelvins] | # of wall hits |
|  |  |
| 1. Complete the sentence. “When the temperature in kelvins is doubled, the pressure on the walls goes up by …”
 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ∆ Volume  (paper LAB DATA)  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. Draw two molecules into Box A and two molecules into Box B.
2. Cut four strips of colored paper, as skinny as possible.
3. Fold the paper as before to show the path of the molecules as they bounce off of the walls.
 |  |  |  |  |
|  |
|  | Larger Box. In here there are two gas molecules at 200 kelvins. They bounce off the walls \_\_\_\_\_\_\_ times. |  | Smaller Box. In here there are two gas molecules at 200 kelvins. They bounce off the walls \_\_\_\_\_\_\_ times. |

 |
| Option Two | 1. Use a ruler to calculate the area of each box in cm2
* The area of the large box is \_\_\_\_\_\_\_\_\_
* The area of the small box is \_\_\_\_\_\_\_\_\_
 | 1. Make a little table:
 |  | 1. Make a graph for your table (label your axes)
 |
| Area of the box [cm2] | # of molecule – wall hits |
|  |  |
| 1. Complete the sentence. “When the size of the container increases, the pressure on the walls…”
 |