**Speed Versus Time Graphs**

The data in the table below describes the speed of a truck as it accelerates down the highway. Draw a line graph of this data using the grid on the right

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|  |  |  | **Speed (km/hr)** | 160 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Time (min)** | **Speed (km/hr)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 140 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 12 |  | 120 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 36 |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 60 |  | 80 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | 72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 84 |  | 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | 96 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 108 |  | 40 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 120 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 132 |  | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | 144 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | | 2 | | 4 | | 6 | | 8 | | 10 | | 12 | |
|  |  | **Time (s)** | | | | | | | | | | | | |

1. What is the shape of the graph? Why does it have this shape?

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2. What is happening to the trucks speed?

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3. In a speed versus time graph, what does an angled down line show?

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4. In a speed versus time graph, what does a horizontal line show?

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5. Do you think the data is correct for a truck accelerating from rest? Explain

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**Speed Versus Time Graphs**

The coyote is chasing its meal (the Road Runner). Unfortunately, the Coyote has difficulty adjusting to the Road Runner’s speed but we have a good idea of what it is as shown in the table below.

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| **Time (s)** | **Speed (m/s)** |  | **Speed (m/s)** |  |
| 0 | 0 |  |
| 1 | 4 |  |
| 2 | 4 |  |
| 3 | 6 |  |  |
| 4 | 6 |  |
| 5 | 11 |  |
| 6 | 11 |  |
| 7 | 0 |  |
| 8 | 0 |  |
| 9 | 3 |  |
| 10 | 3 |  |
| 11 | 0 |  |
|  |  |  |
|  |  |  |  | **Time (s)** |

**Tasks**

1. Plot a graph of these results. Use a ruler pencil. Join the points so that you end up with a graph similar to the one above.

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2. How long was the Coyote travelling at 4m/s

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3. For how long was the Coyote resting? When did this occur?

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4. What was the maximum speed achieved by the Coyote?

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5. When did the Coyote accelerate? When did he decelerate?

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6. What was coyote’s maximum acceleration?

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7. What distance did the Coyote travel?

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