## Finding Speed

Objective: To learn
how to calculate speed.

# $\square$ Distance: the length of a path between two points. 

 -Time: an interval separating regularly occurring events.$\square$ Speed: the distance an object travels in a certain period of time without regard to direction.
$\square$ Calculating Speed: speed (S) equals distance (D) divided by time (T). $\quad \mathrm{S}=\mathrm{D} / \mathrm{T}$
$\square$ Build a ramp with one book and a ruler.

- Place the meter stick so that the 0 cm mark is parallel to the end of the ramp ruler.
- Release the marble from the 15 cm mark of your ramp.
- Start the stopwatch when the marble reaches the table.

5) Stop the stopwatch when the marble reaches the 75 cm mark on the meter stick.
6) Record the time in table one.
7) Repeat using 2, 3, and 4 book high ramps.
8) Calculate the speed of the marble for each ramp height.

## Data Table

| \# of books <br> (ramp height) | distance | time (sec) | speed |
| :---: | :---: | ---: | ---: |
| 1 | 75 cm | s | $\mathrm{~cm} / \mathrm{s}$ |
| 2 | 75 cm | s | $\mathrm{~cm} / \mathrm{s}$ |
| 3 | 75 cm | s | $\mathrm{~cm} / \mathrm{s}$ |
| 4 | 75 cm | s | $\mathrm{~cm} / \mathrm{s}$ |

- To calculate speed, a student must measure the an object in motion moves and the it takes for the object to travel that
distance.
- How does the speed of the marble change as the height of the ramp increases?
- Do you think the average speed would be the same if the distance measurement was only 25 cm instead of 75 cm ? Why or why not? (Disregard friction in your answer)

