7. We will make a streamer graph for this motion.

How does your *streamer graph* show what is happening to the speed of the ball?

8. Estimate the height from which you would need to drop the ball for it to take 2 seconds to hit the ground.

Write your estimate ____ cm

Explain how you worked this out.

9. Write down what you have learned about using graphs to understand and make predictions about the motion of a falling ball by doing this activity.

Lesson 3: Falling Balls

Name: _____

From how high do you need to drop a ball for it to take 1 second to hit the ground?

Mathematics by Inquiry is an initiative of, and funded by, the Australian Government Department of Education and Training

Australian Academy of Science

aamt

Falling Balls

1. From what height should the ball be dropped to take 0.5 seconds to fall to the ground?

   Write your estimate _____ cm

   Actual height to fall for 0.5 seconds _____ cm

2. From what height should the ball be dropped to take 0.25 seconds to fall to the ground?

   Write your estimate _____ cm

   Actual height to fall for 0.25 seconds _____ cm

3. From what height should the ball be dropped to take 1 second to fall to the ground?

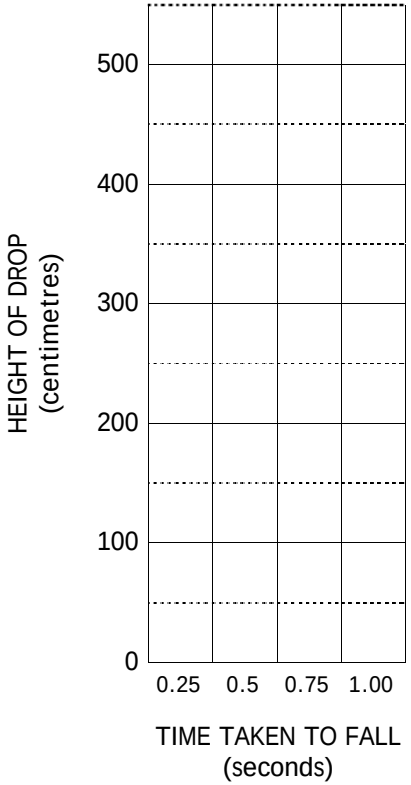
   Write your estimate _____ cm

   Actual height to fall for 1 second _____ cm

4. Use this table to record the heights from which you dropped the ball for it to take the times shown to fall to the ground.

Time to fall (seconds)	Height of drop (centimetres)
0.5	
0.25	
1.00	
(0.75)	

5. Draw a graph in the space below to show the drop height for each of the times.



6. Write down what you think is happening to the speed of the ball as it falls: