21. What do you think happens to the speed of a ball when it rolls downhill?

22. Someone said that the ball was accelerating.

    Use this space at the right to sketch what their streamer graph might look like if they were correct.

23. Write down what you have learned in this activity.

Lesson 2: Rolling Downhill

Name: _____

What happens to the speed of a ball when it rolls downhill?

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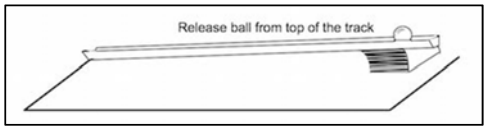
Rolling a ball downhill

1. Predict what happens to the speed of a ball when it rolls down a sloping track.



2. Write your prediction in the space below.

3. Share your prediction with the rest of the class.
4. Your teacher will choose a person to be the Launcher.

   Watch carefully to see what happens when the Launcher releases the ball from the top of the track.
5. Is this what you expected to happen?

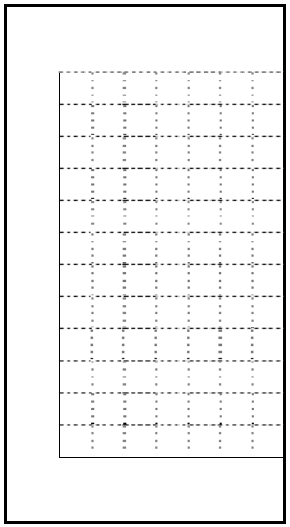
   Discuss it with the rest of the class.

Setting up your own track

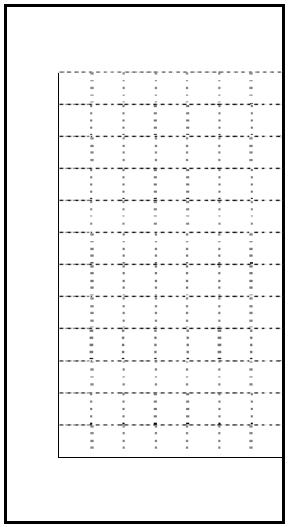
6. Your group will need a piece of track, a thin book, a Green streamer, a marble or ball, and 10 small blocks.
7. Use very thin pieces of Blu Tack® to attach the track to the book at one end.

   Look at the track carefully to check that it is straight. You may need to place a block under the track somewhere to stop it from 'sagging' in the middle.
8. Attach a small piece of Blu Tack to the bottom of the track to stop the ball rolling off.
9. Ask your teacher to check your track.
10. Predict what the streamer graph will look like when the ball is released from the top of the track.

    Draw your prediction in the space on the next page



Prediction for Green Graph



Actual Green Graph

11. Choose someone in your group to be the Launcher.
12. The rest of the people in your group are the Markers.

    The Markers line up beside the track with one small block each. Everyone should know their place in the line.
13. The Launcher releases the ball from the top of the track.

    The Launcher must listen carefully to the ticks of the metronome and say 'Ready! Set! Go!' in time to the ticks.
14. The Markers put down their blocks when it is their turn — they must put them down on the table next to where the ball is when the metronome ticks. Repeat until everyone is happy with the way the blocks are being placed.
15. Carefully place the Green paper streamer on the table next to the track and mark the positions of the blocks.
16. Number the strips in order before cutting the streamer.
17. Make a streamer graph using butcher's paper and glue-sticks to glue the Green streamers onto the paper.
18. Add a title and label the axes on your Green streamer graph.
19. Draw your Actual Green Graph in the space above.
20. Put your Green streamer graph on the board ready for a class discussion.