For these questions, use the simulation "Probabilistic analysis of a mass-spring system" (Classical Oscillator) in the QuVis HTML5 collection.

1) Have a play with the simulation for a few minutes, getting to understand the controls and displays. Note down three things about the controls and displayed quantities that you have found out.

2) Qualitatively, how does the motion of the block relate to the number of snapshots in the different bins?

3) a) Using a bin width of $0.5m$ and an example from your data, explain how you convert the number of snapshots in a given $0.5m$ interval to find the probability density in that interval. Show your calculation.

b) Verify the result of your calculation using the simulation.

4) What is the difference between a probability and a probability density? Explain using an example from your data.

5) Which of the Challenges did you find most difficult and why? Explain how you solved this challenge. If none of the Challenges were difficult, choose the one you found most interesting and explain how you solved it.