Author: Tharaniya Rasakulasingham

This step-by-step solution guide has been created by **Tharaniya Rasakulasingham** for educational purposes. While we have made every effort to ensure the accuracy of the information presented, it is possible that there may be errors or omissions. We encourage users to critically evaluate and verify the content. BF Maths and the author cannot be held responsible for any errors or inaccuracies in this guide.

If you find any mistakes or have any suggestions for improvements, please contact us at bfmathshello@gmail.com. Your feedback is invaluable in helping us maintain the quality and accuracy of our resources. Please specify *which exercise* and *which question* in the email.

Thank you for using BF Maths for your maths revision!

8.2 - Modelling assumptions

1) a) Assumes that each child's weight act at a single point, which may not be true depending on the manner in which the children are sitting on the see-saw eg: the children may not stay stationary

b) Ignores the width of the see-saw and assumes that the weight acts at the midpoint of the rod.

c) This presumes the support is dimensionless and fixed, and ignores any frictional effects on the rod.

d) Ignore the frictional effects on the children due to air resistance

2) a) Ignore the friction between the racetrack and the car.

b) The assumption is not valid; the racetrack will exert frictional forces on the car

3) The bungee cord will stretch under the weight of the jumper.

4) Model the car and trailer as particles connected by a light rod. Ignore the effect of air resistance

5) a) Model the stone as a particle, ignore the effects of air resistance.

b) i) The motion will be identical
ii) The feather will take longer to fall

c) Include air resistance in the model, for example.

BE MATHS