

WJEC England Physics A Level

SP C1 03 : Dynamics

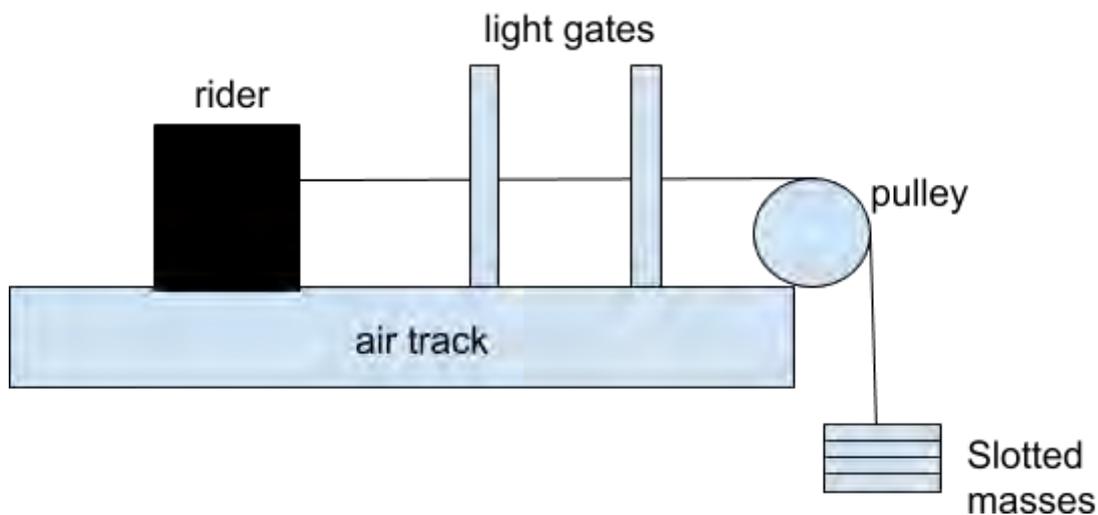
Practical notes



1. Investigation of Newton's Second Law

Equipment:

- Light gates
- Linear air track and rider
- Slotted masses



Experimental Method:

1. Set the light gates to measure acceleration.
2. Attach the thread to the rider and pass over the pulley.
3. Attach 5 slotted masses to the string and allow them to fall, pulling the rider through the light gates.
4. Record the force (mg , where m is the mass of the slotted masses combined) and the acceleration, recorded by the light gates.
5. Remove 1 mass and place it on the rider.
6. Repeat.
7. Repeat until all masses have transferred to the rider.
8. Plot a graph of acceleration against force.
 - a. This should form a straight line through the origin, showing a directly proportional relationship.
 - b. This shows that $F = ka$ (where the constant $k = m$).

Safety:

- Falling masses may cause injury. Wear appropriate footwear and take care not to stand under any suspended masses.
- Ensure that the masses added to the rider are secured so that they don't fly off during acceleration

