

Lecture 5

Newton's third law ILD

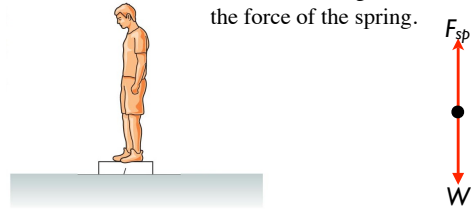
Please take one blue and one white sheet

1

Apparent weight

Consider a man standing on a spring scale

The only forces acting on the man are the weight force and the force of the spring.



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Now imagine he weighs himself in a lift which is accelerating upwards.

Since he is accelerating, there must be a net force

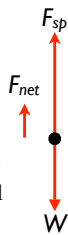
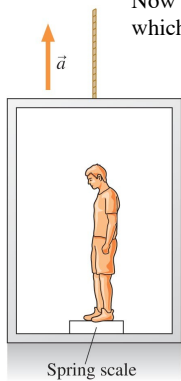
$$F_{\text{net}} = F_{\text{sp}} - W = ma_y$$

or

$$F_{\text{sp}} = W + ma_y$$

i.e. the scale reads heavier.

Apparent weight is given by the magnitude of the normal force.



3

3

NEXT LECTURE

Circular motion

Read: KJF §6.1, 6.2

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