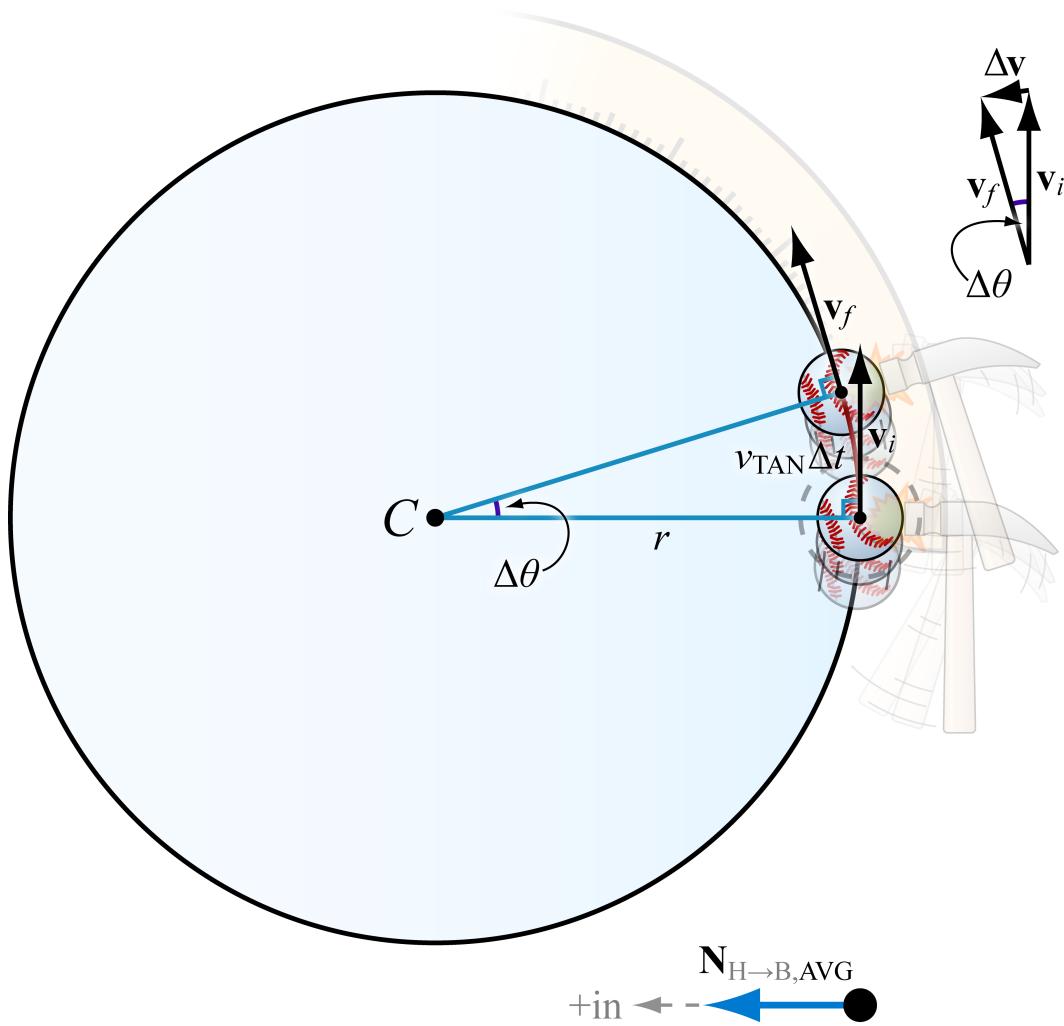


# Uniform circular motion



## Kinematics

$r$	radius
$c = 2\pi r$	circumference
$T$	period (lap time)
$f = \frac{1}{T}$	frequency $[f] = \frac{1}{s} = \text{Hz}$

$\omega = 2\pi f$	angular frequency
$v_{\text{TAN}} = \frac{c}{T} = \frac{2\pi r}{T}$	tangential speed

$$a_{\text{IN}} = \frac{v_{\text{TAN}}^2}{r}$$

inward (centripetal) acceleration

## Dynamics

$$a_{\text{IN}} = \frac{\Sigma F_{\text{IN}}}{m_l}$$

net of inward (centripetal) force components