# Dynamically Changing Volumes

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# Changing Volumes

- What do we preserve during simulation?
  - Concentration
  - Substance
- What is constant if boundaryCondition = “true”?
  - Concentration
  - Substance

# Changing Volumes (continued)

- Concentration derivative

$$
\begin{aligned}
d[A]/dt &= d(A/V)/dt \\
&= 1/V\ dA/dt - A/V^2 dV/dt \\
&= 1/V\ (dA/dt - [A]dV/dt)
\end{aligned}
$$

Determined by yield, stoichiometry, and kinetic laws

Not known for assignments