NCERT – GRADE 7 CHEAT SHEET

MEASUREMENT OF TIME AND MOTION

Observe... Measure... Learn!

Pumpa

Based on NCERT (Curiosity) – Textbook of Science for Grade 7 | Chapter 8 | Reprint 2026-27 | Pages 105–120

1. Measuring Time

- Time can be measured by observing natural repeating events.
- Examples: Sunrise and sunset, Moon phases, seasons.
- We also use calendars to keep track of days, months and years.



Sunrise & Sunset



Moon Phases



Calendar

2. Early Timekeeping Devices

Sundial



Uses the Sun's shadow.

Water Clock



Measures time by water flow.

Hourglass



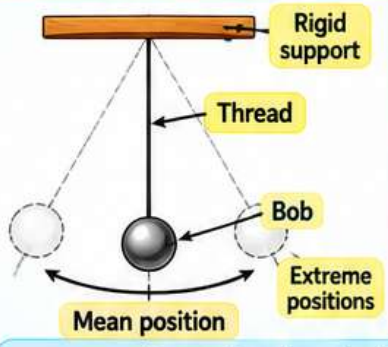
Measures time with sand.

Candle Clock



Time by burning rate.

3. Simple Pendulum



- A pendulum moves back and forth in an oscillatory motion.
- One complete oscillation is one back and forth motion.
- Time period is the time taken for one oscillation.

For a given length, the time period is constant and depends on length, not mass.

4. Units and Measuring Time

- SI unit: second (s).
- Common units: minute (min), hour (h).
- 1 min = 60 s
  1 h = 60 min



Clock



Stopwatch

5. Speed

- Speed = Distance ÷ Time
- SI unit: m/s
- Also used: km/h.

Example:

A car covers 100 m in 20 s.

Speed = 100 ÷ 20 = 5 m/s



Speedometer (measures speed)



Odometer (measures distance)

6. Types of Motion

Uniform Motion

Equal distances in equal time.



Distance–Time Graph



Non-uniform Motion

Unequal distances in equal time.



Distance–Time Graph



Quick Facts

- Time is measured in seconds.
- A pendulum keeps time.
- Speed tells us how fast something moves.

Common Mistakes

- ✗ Using wrong formula for speed.
- ✗ Confusing distance with displacement.
- ✗ Mixing up units (m/s and km/h).

Key Takeaway

Time helps us measure. Speed helps us understand motion!

Pumpa | *Measure Time. Understand Motion!*