

Matter and the Particle Model (Grade 5)

Central concept: **Particle Model of Matter**

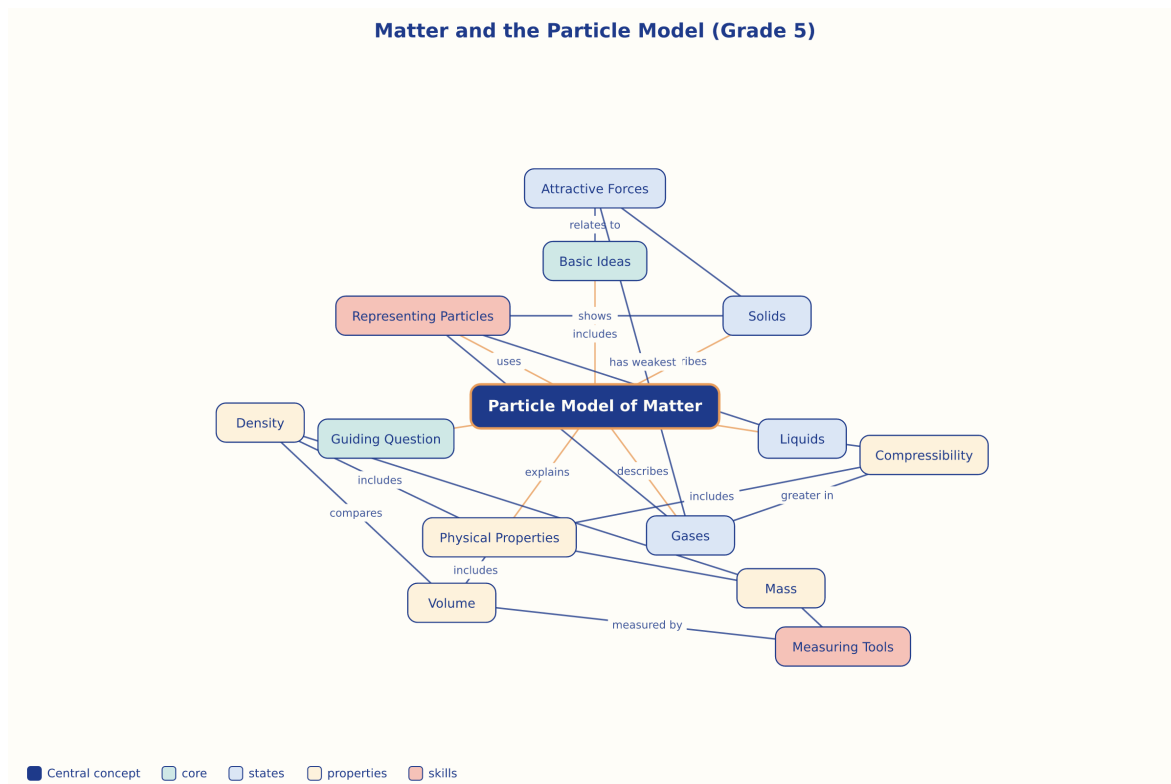
Connections

- Particle Model of Matter (includes) -> Basic Ideas
- Particle Model of Matter (describes) -> Solids
- Particle Model of Matter (describes) -> Liquids
- Particle Model of Matter (describes) -> Gases
- Particle Model of Matter (explains) -> Physical Properties
- Particle Model of Matter (answers) -> Guiding Question
- Basic Ideas (relates to) -> Attractive Forces
- Solids (has strongest) -> Attractive Forces
- Gases (has weakest) -> Attractive Forces
- Physical Properties (includes) -> Mass
- Physical Properties (includes) -> Volume
- Physical Properties (includes) -> Density
- Physical Properties (includes) -> Compressibility
- Mass (measured by) -> Measuring Tools
- Volume (measured by) -> Measuring Tools
- Density (compares) -> Mass
- Density (compares) -> Volume
- Compressibility (greater in) -> Gases
- Compressibility (lesser in) -> Liquids
- Particle Model of Matter (uses) -> Representing Particles
- Representing Particles (shows) -> Solids
- Representing Particles (shows) -> Liquids
- Representing Particles (shows) -> Gases

Notes

- **Particle Model of Matter:** Explains the behaviour of particles that make up all matter. [Outcome](#), [Understanding](#), [PDF p.1](#)
- **Basic Ideas:** All matter is made of small particles that are always moving and have spaces between them. [Knowledge](#), [PDF p.1](#)
- **Solids:** Particles are close together and vibrate in place. [Knowledge](#), [Knowledge](#)
- **Liquids:** Particles have spaces between them and can slide past each other. [Knowledge](#), [Knowledge](#)
- **Gases:** Particles have large spaces and move constantly in all directions. [Knowledge](#), [Knowledge](#)
- **Attractive Forces:** Strongest in solids, weakest in gases; heating weakens them, cooling strengthens them. [Knowledge](#), [Skills](#), [PDF p.6](#)
- **Physical Properties:** Includes state, mass, volume, density, and compressibility. [Knowledge](#), [Understanding](#)
- **Mass:** Amount of matter in an object, measured in grams and kilograms. [Knowledge](#), [Skills](#)

- **Volume:** Amount of space matter takes up, measured in millilitres and litres. [Knowledge](#), [Skills](#)
- **Density:** Compares mass to volume; denser objects sink, less dense objects float. [Knowledge](#), [PDF p.6](#)
- **Compressibility:** Ability of liquids and gases to shrink in volume under pressure; gases compress more easily. [Knowledge](#), [PDF p.6](#)
- **Measuring Tools:** Balance scales and volume instruments used with SI units to measure mass and volume. [Skills](#)
- **Representing Particles:** Students draw and describe particle arrangements for solids, liquids, and gases. [Skills](#), [Skills](#), [Resource](#)
- **Guiding Question:** How can states of matter and other physical properties be explained by using the particle model of matter? [Guiding question](#)



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