By the end of the lesson, students will be able to:

1. Define kinetic energy as energy due to movement.
2. Explain how kinetic energy is affected by mass and speed.
3. Apply knowledge of kinetic energy to understand car accidents.

**Lesson Structure**

**1. Engagement (10 min) – Hook & Prior Knowledge Activation**

* **Video:** Show a short, engaging video about car accidents and crash testing (e.g., slow-motion crash test footage).
* **Think-Pair-Share:** Ask students:
  + What did you notice in the video?
  + What happens when a small vs. large car crashes?
  + How does speed affect the damage?
* **Discussion:** Guide students to recognise that movement (speed) and size (mass) affect the impact.

**2. Explanation (10 min) – Kinetic Energy Concept**

* Use visuals and simple language to define kinetic energy:
  + "Kinetic energy is the energy of moving things."
  + "Faster things have more kinetic energy."
  + "Heavier things have more kinetic energy."
* Show an animated example (e.g., a moving car vs. a parked car).
* Use gestures and real-life comparisons (e.g., a slow vs. fast bicycle).

**3. Exploration (15 min) – Hands-on Activity: Modelling Kinetic Energy**

* **Materials:** Toy cars of different sizes, ramp, measuring tape.
* **Procedure:**
  1. Roll a small and large toy car down the ramp.
  2. Compare the distances they travel after rolling (representing energy).
  3. Repeat with different ramp heights (changing speed).
* **Discussion:**
  1. Which car went further? Why?
  2. How did changing the height (speed) affect the distance?
  3. Connect to kinetic energy concepts.

**4. Application (10 min) – Car Accident Case Study**

* Show two short videos of car crashes:
  1. A slow-speed crash
  2. A high-speed crash
* Students **fill in a table** comparing speed, mass, and damage.
* **Guided discussion:** How does kinetic energy explain the damage seen?

**5. Reflection & Exit Ticket (5 min)**

* **Sentence Stems (Scaffolded Writing Task):**
  + Kinetic energy is…
  + If a car is faster, it has…
  + If a car is heavier, it has…
* **Verbal Sharing:** Ask a few students to share their answers.

**EAL/D Support Strategies**

✔ **Visuals & Gestures** – Use diagrams, animations, and real-life objects.  
✔ **Simple Language** – Use clear, concise explanations and avoid jargon.  
✔ **Scaffolding** – Provide sentence stems and word banks (e.g., “speed,” “mass,” “energy”).  
✔ **Pair Work** – Allow peer discussions before whole-class sharing.  
✔ **Multimodal Learning** – Combine videos, hands-on activities, and written tasks.

**Assessment & Evaluation**

✅ **Observation:** Are students able to explain how mass and speed affect kinetic energy?  
✅ **Exit Tickets:** Can students complete the sentence stems correctly?  
✅ **Discussion Responses:** Do students connect kinetic energy to real-world scenarios?