CURRICULUM ALIGNMENT · INDIA CBSE MATHEMATICS, CLASS IX

Are Electric Cars Really Cleaner?

Grade 9 · Two 60-minute lessons · SDG 13 Climate Action · SDG 11 Sustainable Cities and Communities

Are electric cars always better for the environment than gasoline cars? In this lesson, students use real-world data and mathematical models to investigate the question, and discover that the answer depends on more than they might expect. Along the way, they work with speed–time graphs, linear equations and inequalities, and use their results to discuss how mathematics can support better decisions for people and the planet.

Curriculum level: Class IX, CBSE curriculum for the 2026–27 session (new NCERT textbook).

Class IX syllabus content

Reference	Curriculum content	How the lesson addresses it	Where	Type
Unit II Algebra **Introduction to Polynomials**	*"Modelling linear growth and linear decay"*; *"Linear relationships"*; *"Slope and y-intercept of a line y = ax + b"*	Students model a real situation as linear growth and interpret the slope and the y-intercept in context.	GA, I, A, Test	Core
Unit II Algebra **Linear Equations in Two Variables**	*"Introduction to linear equations in two variables through practical examples"*; *"Pair of linear equations in two variables"*; algebraic methods of solving a pair of linear equations	Students write a pair of linear equations for a real situation and solve them to decide when one option becomes better than the other.	GA, I, A	Core
Unit V Mensuration **Area and Perimeter**	Areas of rectangles, parallelograms and triangles	Students find the distance travelled from speed–time graphs by splitting the area under the graph into simple shapes.	GA, HW, B, I, A	Applied
Beyond Class IX	Linear inequalities	The Advanced group uses linear inequalities to find limits in a real context.	A	Extension

Curricular goals and competencies

Reference	Curriculum content	How the lesson addresses it	Where	Type
CG-3 / C-3.2	*"Models and solves contextualised problems using equations"* (for example, simultaneous linear equations in two variables)	Students model a real situation with equations and draw conclusions from their solutions.	GA, I, A, Test	Core
CG-8 / C-8.1	*"Models daily-life phenomena and uses representations, such as graphs, tables, and equations to draw conclusions."*	Students use graphs, tables and equations to compare options in different real-world scenarios.	GA, HW, B, I, A, WCD	Core

Reference	Curriculum content	How the lesson addresses it	Where	Type
CG-9 / C-9.1	*"Decomposes a problem into sub-problems."*	Students break complex problems into simpler steps, e.g. splitting an area into shapes or a total into its components.	GA, B, I, A	Applied

Core The lesson directly develops or assesses this content. Applied Students use this content in a new, real-world context.
Extension Content beyond the grade level, reached mainly in the Advanced group.

GA Guided Activity (teacher-led) · **B / I / A** Differentiated group activity: Base, Intermediate, Advanced · **HW** Homework · **WCD** Whole-Class Discussion · **Test** Pre-/Post-test

Wider connections

Competency-based learning

The lesson focuses on applying, analysing and evaluating mathematics in a real context, in line with the competency focus of the CBSE curriculum.

Cross-curricular links

Science (motion and speed–time graphs; sources of energy) and Social Science (resources and sustainable development).

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Source: CBSE, Curriculum for Secondary Classes 2026–27, Mathematics Class IX. Content is quoted in part from the syllabus key concepts and competencies.

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