Differentiation strategies – Secondary Mathematics example

Lesson component	Description
Differentiation element(s)	**Process**
Stage/Year	Stage 4
Subject	Mathematics
Outcomes	**A student:** • recognises and explains mathematical relationships using reasoning MA4-2WM • classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles MA4-17MG.
Content statement	Investigate the properties of special quadrilaterals (parallelograms, rectangles, rhombuses, squares, trapeziums and kites), including whether: • the opposite sides are parallel • the opposite sides are equal • the adjacent sides are perpendicular • the opposite angles are equal • the diagonals are equal • the diagonals bisect each other • the diagonals bisect each other at right angles • the diagonals bisect the angles of the quadrilateral.
Purpose of lesson	Students will learn that quadrilaterals have particular properties. They will classify and use the properties to explore mathematical relationships.
Strategy(ies)	**Core strategies** Students will: • complete an “Always, Sometimes, Never” activity, presenting a number of statements (e.g. a rectangle is a square). They must decide if the statements are always, sometimes or never true. • test their own hypothesis using concrete materials. • record their reasoning using a maths journal. Students will often have different answers within their group and must convince each other of the accuracy of their response. **Differentiation strategies** Students will: • work in groups focusing on one quadrilateral using concrete materials to test their mathematical reasoning. • provide reasons for their answers using examples and counter-examples.

Lesson component	Description
	• use strategies to decide the truth or falsehood of statements: o provide one example where the statement being incorrect is enough to show that it cannot be “always” true o provide one example where the statement being correct is enough to show that it cannot be “never” true o provide one example where the statement being true and another where the statement being false is enough to show that it must be “sometimes” true.
Resources	A good example of the use of the activity: https://mathmindsblog.wordpress.com/2014/01/25/always-sometimes-never-quadrilaterals/