











Topic three: Planning, designing and building a railway

Lessons linking the present and the future of the North West region

Key Learning Area	Title	Main focus question
 Science	Minimising environmental impact: Air quality in Sydney	How will Sydney Metro Northwest be good for the environmental air quality of Sydney?
 Geography		
 Science	Rail expansion and contraction	How do engineers allow for the expansion and contraction of railway tracks?
 Science	Calculating and graphing vehicle speeds	How fast is my train?
 Mathematics		
 English	Persuasive writing: Making a railway poster	What is a good railway poster message that will attract the attention of passers by?
 Geography	How to plan community development: Doing a population survey	What is the average age and population structure of The Hills Shire community?
 Geography	How to plan community development: Meeting the needs of a growing population	How is the community changing? How might Sydney Metro Northwest help solve the needs of a growing population?
 Mathematics	Calculating the volume of the tunnels	How much rock material has to be excavated to build the rail tunnels?
 Geography	Landscapes, rocks and tunnels: Practical considerations in transport geography	What landscapes and rock types does the railway cross, both underground and over ground?

	Key syllabus reference or outcome	Most appropriate level	Suggested number of lessons	Page
	Science 7-10: SC4-10PW (PW4 b)	Stage 4	2-3	154
	Geography K-10: (GE4-1); (GE4-2); (GE4-3); (GE4-7); (GE5-2); (GE5-3); (GE5-7)	Stage 4-5		
	Science 7-10: SC4-16CW (CW1 b,c)	Stage 4	1-2	160
	Science 7-10: SC4-7WS (WS7.1 a,b) Mathematics K-10: MA4-19SP	Stage 4	1-2	164
	English K-10: EN4-2A	Stage 4	1-2	168
	Geography K-10: (GE5-1); (GE5-7)	Stage 5	2-3	174
	Geography K-10: (GE5-2); (GE5-3); (GE5-7); (GE5-8)	Stage 5	3-5	180
	Mathematics K-10: MA5.2-2WM	Stage 5	1-2	194
	Geography K-10: (GE5-2); (GE5-7); (GE5-8)	Stage 5	1-3	198