



Y7 Independent Learning Task

Subject:	Mathematics			
ILT #5	Patterns & Angles			
Week set:				
Duration:	Approximately 1 hour			
Hand in:				
Instructions:	Find patterns and angles in the world around you. Choose at least 3 different real-life examples, investigate them and create a project that explains what the pattern or shape is, what angles are involved, any mathematical rules or relationships, and why the pattern or shape is useful or interesting. Include diagrams, photographs or drawings and use correct mathematical vocabulary.			
Skills:	This task develops students' ability to: • Observe and identify geometry in real-life contexts. • Recognise, identify and measure different types of angles. • Identify patterns, shapes, symmetry and mathematical relationships. • Explain geometric ideas using correct mathematical vocabulary. • Apply classroom mathematics to unfamiliar and everyday situations. • Communicate findings using diagrams, photographs, drawings and written explanations. • Develop curiosity, creativity, investigation and independent learning skills.			
Marking schema:		Developing	Proficient	Advanced
	Assessment Area	Emerging	Secure	Excelling
	M athematical Understanding	Identifies some relevant shapes, patterns or angles, but explanations may be incomplete or contain inaccuracies.	Accurately identifies and explains the key shapes, patterns, angle facts and mathematical relationships in the chosen examples.	Shows detailed and accurate geometric understanding, making clear connections between patterns, angles, symmetry, shapes and mathematical rules.
	A pplication of Mathematics	Uses some real-life examples, but measurements or links to the mathematics may be limited.	Applies geometry successfully to at least 3 real-life examples, identifying and measuring angles and explaining the mathematics involved.	Applies geometry confidently to carefully chosen examples, using accurate measurements and insightful explanations of how and why the mathematics is used.
	T hinking & Communication	Presents some findings using words or visuals, but explanations	Communicates findings clearly using correct mathematical	Communicates ideas exceptionally clearly and creatively, using precise vocabulary and well-

		may be brief or difficult to follow.	vocabulary alongside useful diagrams, photographs or drawings.	chosen visuals to make complex geometric ideas easy to understand.
	H abits of Independent Learning	Completes the main investigation with some support and limited checking or refinement.	Works independently, follows the mission checklist, investigates suitable examples and checks measurements and explanations for accuracy.	Shows strong independence and curiosity by selecting interesting examples, investigating them carefully, checking accuracy and refining the final project.
	S tretch & Challenge	Meets the core expectations of the task.	Completes one or more Level Up Challenges, such as exploring symmetry or finding a wider range of angle types.	Goes well beyond the core task, for example by creating and explaining an original repeating pattern or researching how geometry is used by mathematicians, designers or architects.
Additional guidance or help:	Checklist: find at least 3 real-life examples of patterns and angles; identify and measure the angles involved; explain the pattern or rule using mathematics; include diagrams, photos or drawings; explain why the pattern is useful or interesting; and use correct mathematical vocabulary. Ideas to explore: tiles and mosaics; architecture and buildings; bridges and structures; nature (flowers, leaves, shells and snowflakes); art and designs; road signs and logos; sports equipment; and everyday objects. Level Up: find as many different types of angles as you can; explain how symmetry is used in your examples; create your own repeating pattern and explain the mathematics behind it; or research how mathematicians and architects use geometry to design safe and beautiful buildings.			