Unit 4: Geometry

Time Out is related to *Unit 4: Geometry*.

Time Outs strengthen numeracy and reasoning skills by using math strategically.

Use strategic thinking to play the game and answer the questions that follow. You will be assessed according to the rubric provided.

Category	Strategy and Procedures	Mathematical Reasoning
	The student...	*The student...*
4	• uses efficient and effective strategies to solve the problem(s) and complete questions	• presents complex and refined mathematical reasoning
3	• uses effective strategies to solve the problem(s) and complete questions	• presents effective mathematical reasoning
2	• uses effective strategies inconsistently to solve the problem(s) and complete questions	• presents some evidence of mathematical reasoning
1	• does not use effective strategies to solve the problem(s) and complete questions	• presents superficial or confusing evidence of mathematical reasoning

This assessment is worth 8 marks. Take your time.

Tile sliding puzzles can be fun, but also frustrating. In a tile sliding puzzle, there is a grid filled with tiles and a single empty space. The goal is to move the tiles around until they form a picture or until they are in the correct order.

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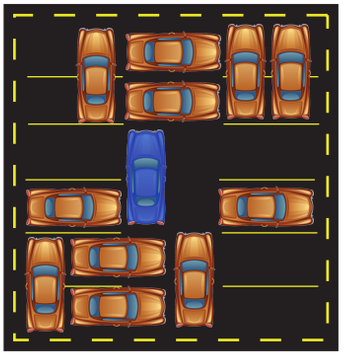
A related type of puzzle is a parking puzzle. In this puzzle, many vehicles are parked haphazardly in a parking lot. The goal is to move the vehicles back and forth to try and free a specific vehicle.

Enter either "slider puzzle" or "parking puzzle" into a search engine. Find an appropriate puzzle and play a few rounds. Pay attention to the strategy you use to solve the puzzle.



1. For one type of puzzle, describe what makes a puzzle easy or difficult.

2. Puzzles like these can be designed by "working backwards". If you begin with a solved puzzle, and move tiles or cars until they are scrambled, you will have a puzzle that is guaranteed to have a solution.

   a. Using this strategy, sketch a tile puzzle or a parking puzzle that you know will have a solution.

   b. Explain how hard you expect your puzzle to be.

3. Describe a strategy that you used to solve one puzzle type.

4. When solving either type of puzzle, thinking ahead is important. Give an example of how thinking ahead helped you solve a puzzle.

You have completed *Unit 4: Time Out*. Please proceed to the *Unit 4: Final Review Assignment* on the next page of this *Workbook*.