

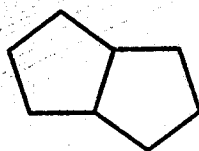
Toothpick Tables (pp. 1 of 2)

Use toothpicks to model a pentagon as the first figure in a sequence as shown below.



- (1) How many pentagons did you make? _____
- (2) How many toothpicks did it take to make this figure? _____

The second figure in the sequence is shown below.



- (3) How many pentagons are in this figure? _____
 - (4) How many toothpicks did it take to make this figure? _____
- (5) Use the space below to create a table to show the relationship between the number of pentagons and the number of toothpicks up to 5 pentagons.

- (6) Describe the pattern in the output column (the number of toothpicks used). What do you think this pattern means?
- (7) Use the pattern to predict the number of toothpicks used to create a figure with 8 pentagons. Show your process.

Toothpick Tables (pp. 2 of 2)

- (8) Suppose a sequence of figures like the ones used for the pentagons above was made using octagons. Use the space below to create a table to show the relationship between the number of octagons and the number of toothpicks (up to 5 octagons.)
- (9) How would the pattern in the table be different from the pattern in the pentagon table? Explain.
- (10) Use the pattern to predict the number of toothpicks used to create a figure with 10 octagons. Show your process.