

## Puzzling the Piping Plover

Below you'll find seven systems of equations to solve, as well as two other equations to evaluate for the letter "S" and the letter "O". The solutions to the variables you'll be solving for will also be the values of the letters that you'll need to replace in order to complete the sentences in the Piping Plover blurb. To decode the quote on the next page, do the process in reverse. Find the value of the variable you solved for in the grid on the next page, and put the letter you found it to be equal to on the blank above it.

$$D = 26B$$

$$M = N - 100$$

$$Y = 6W + 3$$

$$2B + D = 56$$

$$M + N = 3700$$

$$7W - Y = 1$$

$$E = G + 3060$$

$$T = 3R - 1.5$$

$$O = ((T - R)/12) + .6$$

$$2G - 290 = E$$

$$R + T = 25.5$$

$$I = H - 85$$

$$U = V - 11$$

$$S = D - 11B$$

$$I + H = 3921$$

$$6U + V = 60$$

The Piping Plover is a small sand-colored shorebird about the size of a sparrow. The adult will have yellow-orange legs and black bands across its forehead and around its neck. There are 2 subspecies. In 2003 their total population was estimated to be 4110, with 3550, or 52 % of the

**B**

**H**

**E**

**G**

**D**

total population on the U. S. Atlantic Coast.

They range from 6.15 to 7 inches in length, have a wingspan from 18 to 18.75 inches, and

**R**

**U**

**V**

**T**

weigh about 1.6 ounces. Most Plover nests will have 4 eggs in them, the female having laid

**O**

**W**

one egg every other day for a week. The eggs will have an incubation period of 27 days before

**Y**

they hatch, and when an egg does hatch it will take about 30 days before the chick can fly.

**S**

When approached, they'll more frequently run from you than fly.

The Piping Plover is an "endangered" species in the Great Lakes region, and "threatened" elsewhere. In the 1800s and early 1900s the feathers of the Piping Plover were used as decorations

**M**

**N**

for women's hats. The Migratory Bird Act of 1918 helped the population recover for awhile, but

**I**

the growth in popularity of the east coast to live and vacation stifled the resurgence. Since 1991 there has been a slight increase in their population.

## Puzzling the Piping Plover (Part 2)

<u>G</u>	<u>O</u>	<u>D</u>	<u>G</u>	<u>I</u>	<u>V</u>	<u>E</u>	<u>S</u>			
3350	1.6	52	3350	1918	18	6410	30			
<u>E</u>	<u>V</u>	<u>E</u>	<u>R</u>	<u>V</u>	<u>B</u>	<u>I</u>	<u>R</u>	<u>D</u>		
6410	18	6410	6.75	27	2	1918	6.75	52		
<u>H</u>	<u>I</u>	<u>S</u>	<u>W</u>	<u>O</u>	<u>R</u>	<u>M</u>	<u>B</u>	<u>U</u>	<u>T</u>	
2003	1918	30	4	1.6	6.75	1800	2	7	18.75	
<u>H</u>	<u>E</u>	<u>D</u>	<u>O</u>	<u>E</u>	<u>S</u>	<u>N</u>	<u>O</u>	<u>T</u>		
2003	6410	52	1.6	6410	30	1900	1.6	18.75		
<u>T</u>	<u>H</u>	<u>R</u>	<u>O</u>	<u>W</u>	<u>I</u>	<u>T</u>	<u>I</u>	<u>N</u>	<u>T</u>	<u>O</u>
18.75	2003	6.75	1.6	4	1918	18.75	1918	1900	18.75	1.6
<u>T</u>	<u>H</u>	<u>E</u>	<u>N</u>	<u>E</u>	<u>S</u>	<u>T</u>				
18.75	2003	6410	1900	6410	30	18.75				

$$D = 26B$$

$$2B + D = 56$$

$$2B + 26B = 56$$

$$\frac{28B}{28} = \frac{56}{28}$$

$$B = 2$$

$$D = 26B$$

$$D = 26(2)$$

$$D = 52$$

$$M = N - 100$$

$$M + N = 3700$$

$$N - 100 + N = 3700$$

$$\frac{2N - 100}{+100} = \frac{3700}{+100}$$

$$\frac{2N}{2} = \frac{3800}{2}$$

$$N = 1900$$

$$M = N - 100$$

$$M = 1900 - 100$$

$$M = 1800$$

$$Y = 6W + 3$$

$$7W - Y = 1$$

$$7W - (6W + 3) = 1$$

$$7W - 6W - 3 = 1$$

$$W - 3 = 1$$

$$\frac{+3}{+3} \quad \frac{+3}{+3}$$
$$W = 4$$

$$Y = 6W + 3$$

$$Y = 6(4) + 3$$

$$Y = 27$$

$$E = G + 3060$$

$$2G - 290 = E$$

$$2G - 290 = G + 3060$$

$$2G - G = 290 + 3060$$

$$G = 3350$$

$$E = 3350 + 3060$$

$$E = 6410$$

$$T = 3R - 1.5$$

$$R + T = 25.5$$

$$R + 3R - 1.5 = 25.5$$

$$\frac{4R - 1.5}{+1.5} = \frac{25.5}{+1.5}$$

$$4R = 27$$

$$R = 6.75$$

$$T = 3R - 1.5$$

$$T = 3(6.75) - 1.5$$

$$T = 18.75$$

$$O = 1.6$$

$$O = (T - R) / 12 + 0.6$$

$$O = (18.75 - 6.75) / 12 + 0.6 = 1.6$$

$$I = H - 85$$

$$I + H = 3921$$

$$H - 85 + H = 3921$$

$$2H - 85 = 3921$$

$$\frac{2H}{2} = \frac{4006}{2}$$

$$H = 2003$$

$$I = 2003 - 85$$

$$I = 1918$$

$$U = V - 11$$
$$U + V = 60$$
$$(V - 11) + V = 60$$

$$6V - 66 + V = 60$$
$$7V - 66 = 60$$

$$\begin{array}{r} +66 +66 \\ \hline 7V = 126 \\ \hline V = 18 \end{array}$$

$$U = V - 11$$
$$U = 18 - 11$$
$$U = 7$$

$$S = D - 11B$$
$$S = 52 - 11(2)$$
$$S = 52 - 22$$
$$S = 30$$