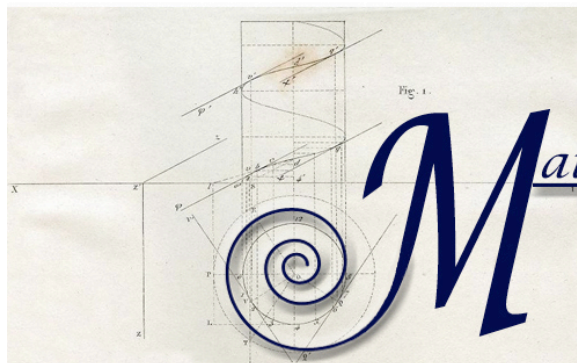


Worksheet Christmas

Teacher

Student

Class



Maths is good for you!

History of mathematics for young mathematicians

12 Days of Christmas

There's lots of Maths in Christmas! You need to add all those presents, and calculate all the money you will spend...

This is an investigation about the 12 Days of Christmas. Read the lyrics to the carol because you will need to find out about the numbers contained in it pretty soon. Or better still, you can sing while you do this!

On the first day of Christmas,
my true love sent to me
A partridge in a pear tree.

On the second day of Christmas,
my true love sent to me
Two turtle doves,
And a partridge in a pear tree.

On the third day of Christmas,
my true love sent to me
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the fourth day of Christmas,
my true love sent to me
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the fifth day of Christmas,
my true love sent to me
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the sixth day of Christmas,
my true love sent to me
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the seventh day of Christmas,
my true love sent to me
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the eighth day of Christmas,
my true love sent to me
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the ninth day of Christmas,
my true love sent to me
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying, x
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the tenth day of Christmas,
my true love sent to me
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

On the eleventh day of
Christmas,
my true love sent to me
Eleven pipers piping,
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree.

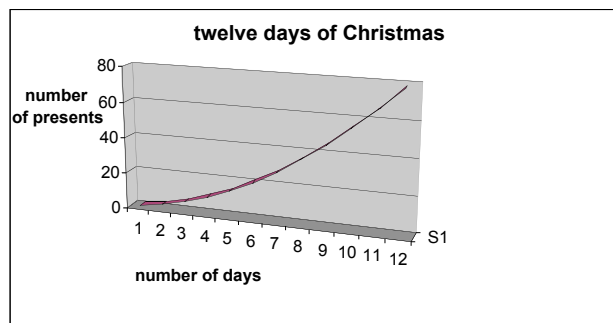
On the twelfth day of Christmas,
my true love sent to me
Twelve drummers drumming,
Eleven pipers piping,
Ten lords a-leaping,
Nine ladies dancing,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five golden rings,
Four calling birds,
Three French hens,
Two turtle doves,
And a partridge in a pear tree!

Investigation – find out how many presents you will get from your ‘true love’...

1. Start Excel
2. Make a table like this:

	A	B	C	D	E	F	G	H	I	J	K	L	M	
1	day		1	2	3	4	5	6	7	8	9	10	11	12
2			=1+2											
3														
4														
5														
6														
7														
8														

3. Make the calculations by using the '=' sign, always increasing the number of items you get per day, exactly as it is explained in the song.
4. How many presents will you get for the last day of Christmas?
5. How many presents will you get altogether? Use the auto-sum button to find out. Does this number remind you of something?
6. If you distributed the number of presents over the year so that you get each day only one present, when would your true love have to start giving you presents for the next Christmas?
7. How many partridges, turtle doves, golden rings and so on, will you get over the 12 days of Christmas? Write it down and see whether there is any pattern there. Describe what you find.
8. Can you work out some formulas? Don't forget that you can drag the formulas across rows and columns once you have the formula which is applicable across the set of data. In particular can you see the connection between the day of the Christmas number and the previous number of presents (for example C1 + B1 would give you...?).
9. Select your table and make a graph. Select 'line graph' and take the bottom option (3d). For x value enter 'number of days', for y value enter 'number of presents'. The title of the graph should read 'Twelve Days of Christmas'. Once you finished your graph, delete the box where it says 'series 1, series 2' Delete the bottom line (which is straight and represents the days of Christmas). Leave the curved line. This line shows you how your number of presents increases over the days. The graph should look something like this:



10. Try to illustrate your graph by importing pictures of the presents (as they are mentioned in the carol) which you may find on the Internet or in clip-art. Select your graph, do a print preview, add your name and date. Print it out. Your maths teacher would probably like this more than any bought Christmas card you can give them!

Hope you enjoyed doing this worksheet – have a Merry Christmas

About Maths is Good for You

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