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# The PNC Christmas Price Index® Lesson

## Suggested Grade & Mastery Level

Middle School and High School – All Levels

## Teacher Background

The PNC Christmas Price Index was started more than 30 years ago as a way to engage clients and has since become one of PNC’s most popular and anticipated economic reports. PNC is a highly diversified and growing financial services organization spanning the retail, business and corporate markets. The PNC Christmas Price Index is available at: <http://www.pncchristmaspriceindex.com>

A price index measures price changes through a representative group of individual items. The PNC Christmas Price Index is an index of the current costs of the goods and services listed in the classic holiday song *The Twelve Days of Christmas*. Calculated by PNC Wealth Management, the PNC Christmas Price Index reflects changes in the economy in the same way the Consumer Price Index issued by the US Department of Labor’s Bureau of Labor Statistics does.

The Consumer Price Index measures the change in the prices of goods and services reflecting the spending habits of the “average” American. It includes goods and services such as food, housing clothing, and utilities. Its percent change is widely used as a measure of inflation. If inflation is higher than expected it may cause the stock market to become bearish.

The purpose of these activities is to use the PNC Christmas Price Index as an investor tool by examining the impact of the cost for goods and services on the performance of securities in The Stock Market Game portfolio.

## Vocabulary

**Consumer Price Index (CPI):** Is a gauge of inflation that measures changes in the prices of basic goods and services. It is compiled monthly by the U.S. Bureau of Labor Statistics. It tracks housing, food, clothing, transportation, medical care, and education. The CPI is used as a benchmark for making adjustments in Social Security payments, wages, pensions, and tax brackets to keep them in tune with the buying power of the dollar.



**Deflation:** Refers to a widespread decline in prices that also has the potential to undermine the economy by stifling production and increasing unemployment.

**HyperInflation:** Occurs when prices rise by 100% or more annually. It can destroy economic stability and even political stability by driving the price of necessities higher than people can afford.

**Index:** Is a statistical measure of the changes in a portfolio of stocks representing a portion of the overall market. It is a sample meant to represent the performance of the whole.

**Inflation:** A persistent increase in prices, often triggered when demand for goods is greater than the available supply or when unemployment is low and workers can command higher salaries. The US Federal Reserve Bank and central banks in other nations try to keep inflation in check by decreasing the money supply, making it more difficult to borrow and thus slowing expansion.

## Performance Objectives

The students will be able to:

- Define the term "index."
- Use an index as an investor tool.
- Identify trends on the PNC Christmas Price Index and project their impact on the stock market.

## Materials

Fact Sheet 1: The Twelve Days of Christmas Lyrics

Fact Sheet 2: PNC CPI % Change

Activity Sheet 1: The Total Price Christmas Story

Activity Sheet 2: Estimate the PNC CPI

## Springboard Activity

Tell your students:

The Dow (also referred to as the Dow Jones Industrial Average, the Dow Jones, or the Dow 30) measures the stock market's performance based on the stock prices of 30 companies. The Dow includes popular companies like 3M, Apple, Caterpillar, and Exxon.



The S&P Index (also referred as the S&P 500) is considered "one of the best representations of the U.S. stock market, and a bellwether for the U.S. economy." (according to Wikipedia) It is composed of 500 large cap companies. A large cap company is a company with a market capitalization value of more than \$10 billion. It includes companies like 3M, Activision Blizzard, Berkshire Hathaway, Ebay, and Facebook.

The NASDAQ Composite Index (also referred to as just "the NASDAQ") is composed of about 3000 stocks listed on the NASDAQ stock exchange. A Seeking Alpha article included Apple, Google, Microsoft, and Cisco among the larger companies in the NASDAQ Composite.

Remind students that an index is used to measure the changes in a portfolio of stocks meant to represent a portion of their overall industry or sector.

Ask your students: What do you think the Christmas Price Index would measure? How might you use it in making investment decisions?

Answers will vary but students should be directed towards the general idea of the Christmas Price Index measuring the prices of items during Christmas time. They should also be aware that the Christmas Price Index also measures the changes in the prices over time.

PNC Wealth Management developed the PNC Christmas Price Index (CPI) to record the current costs of the gifts in *The Twelve Days of Christmas* song. The PNC CPI works like the US Department of Labor's Bureau of Labor Statistic's Consumer Price Index. The Consumer Price Index is often used to measure inflation.

## Procedure

Students will work in their SMG teams to predict pricing for each of the twelve gifts mentioned in the song. They should surf the Web for commercials and classified ads to look up the current prices of poultry, jewelry, and performers (e.g. partridge would be equivalent to modern day turkey and leaping lords and dancing ladies would be magicians, clowns, ballerinas, etc.)

In 2017, the total amount of the gifts in song was **\$34,558.65**.

For the most up-to-date PNC Christmas Price Index information visit <http://www.pncchristmaspriceindex.com>



## Activity

### Reading the PNC Christmas Price Index (CPI)

*Fact Sheet 2.* Tell your students the table represents the total prices and price changes of the PNC Christmas Price Index (CPI) from 1987 – 2017. Ask them: What does the chart tell us about the total prices on the PNC Christmas Price Index? When was it at its highest? Its lowest?

Hand out Activity Sheet 1 and ask your students to graph the year-to-year percentage change. Ask them: Do you see any patterns in the changes of total prices?

Answers will vary but should contain statements like: The PNC Christmas Price Index was lowest in 1995; The PNC Christmas Price Index was highest in 2009; After the 1995 drop, it took five years for the Christmas Price Index to return to where it was in 1994; and so on.

Ask your students: What might cause the price of the same gift purchased each year to rise and fall over the years?

How will knowing the changes in the Total Price of the PNC Christmas Price Index will help you be a better investor?

Responses will vary but should include inflation and current events items like minimum wage, price of oil, etc. Students will use the information provided by the PNC Christmas Price Index report to learn how to use price indexes as predictors of market trends.

## Assessment

Ask your students to review the information on the *Fact Sheets* and completed *Activity Sheet*. Do they think this year's PNC Christmas Price Index be higher, relatively the same, or lower than the previous year? Why?

Based on the PNC Christmas Price Index performance over the last 30 years, what do you think will happen to the index this year? Why? What will that tell consumers about the economy near the end of the year? Explain?

Ask your students to predict the price of this year's PNC Christmas Price Index and the items that compose it using *Activity Sheet 2*. For part 2 of *Activity Sheet 2*, they are to apply what they have learned to writing a short essay that answers the question: Which item do you predict will go up the most in price this time next year (2018)? How did you arrive at this conclusion? Use at least one citation to support your response.

When they do additional research, they may encounter the term "True Cost of Christmas." Explain to them that the **PNC Christmas Price Index** cost is an index of the current costs of the gifts in the song *The Twelve Days of Christmas*. The "**True Cost of Christmas**" is the cumulative cost of all the gifts with the repetitions listed in the song. For example, if a partridge in a pear tree cost \$160, its True Cost would be  $\$160 \times 12$  (\$1920).

## Enrichment

The Consumer Price Index looks at average change over time in the prices paid for consumer goods and services. It includes the following categories:

**FOOD AND BEVERAGES** (breakfast cereal, milk, coffee, chicken, wine, full service meals, snacks);  
**HOUSING** (rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture);  
**APPAREL** (men's shirts and sweaters, women's dresses, jewelry);  
**TRANSPORTATION** (new vehicles, airline fares, gasoline, motor vehicle insurance);  
**MEDICAL CARE** (prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services);  
**RECREATION** (televisions, toys, pets and pet products, sports equipment, admissions);  
**EDUCATION AND COMMUNICATION** (college tuition, postage, telephone services, computer software and accessories);  
**OTHER GOODS AND SERVICES** (tobacco and smoking products, haircuts and other personal services, funeral expenses).

(The above definitions were quoted from "Consumer Price Index: CNBC Explains": <https://www.cnbc.com/id/43769766> )

Ask your students:

1. Is your Stock Market Game team invested in a company that provides goods or services used to calculate the Consumer Price Index?
2. How do you think the latest Consumer Price Index report will impact the price of your stock?

Instruct students to use the *CPI News Releases* section of the Consumer Price Index (<http://www.bls.gov/cpi/news.htm>) website and the historical price charts from Yahoo! Finance (<http://finance.yahoo.com>) or another financial reporting website to substantiate their belief.

# Fact Sheet 1: The Twelve Days of Christmas

On the first day of Christmas  
My true love gave to me:  
A partridge in a pear tree.

On the second day of  
Christmas  
My true love gave to me:  
Two turtle doves  
And a Partridge in a pear  
tree.

On the third day of Christmas  
My true love gave to me:  
Three French Hens,  
Two turtle doves  
And a Partridge in a pear  
tree.

On the fourth day of  
Christmas  
My true love gave 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 gave 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 gave 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 gave 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 gave 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 gave to me:  
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 tenth day of  
Christmas  
My true love gave 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 gave 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 gave 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.

SOURCE:  
[http://www.lyricsmode.com/lyrics/c/christmas\\_songs/the\\_twelve\\_days\\_of\\_christmas.html](http://www.lyricsmode.com/lyrics/c/christmas_songs/the_twelve_days_of_christmas.html)

## Fact Sheet 2: PNC CPI % Change

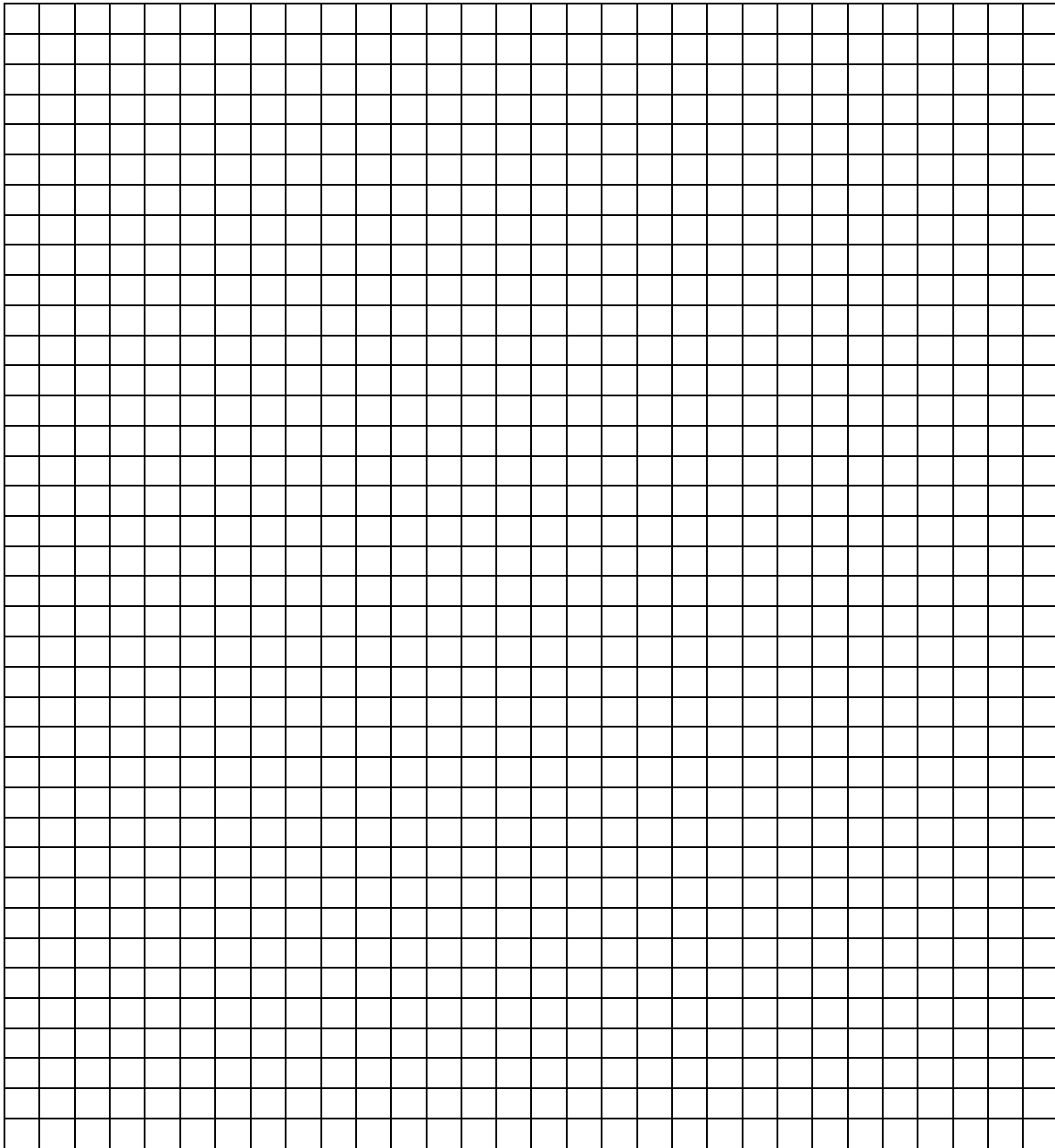
Year	Total Price	% Change
2017	34558.65	0.6
2016	34363.49	0.7
2015	34130.99	0.6
2014	33933.22	0.8
2013	33653.17	6.2
2012	31691.18	6.0
2011	29910.68	5.1
2010	28447.38	8.9
2009	262116.69	0.3
2008	26036.21	12.1
2007	23222.98	2.6
2006	22636.32	2.6
2005	22064.60	8.2
2004	20400.55	2.0
2003	20008.36	21.6
2002	16456.95	-12.8
2001	18871.88	3.0
2000	18324.65	1.5
1999	18054.60	4.2
1998	17329.33	5.3
1997	16458.29	0.9
1996	16310.29	4.6
1995	15596.08	-29.5
1994	22119.06	0.8
1993	21935.36	0.8
1992	21756.82	0.6
1991	21630.65	1.0
1990	21406.58	3.0
1989	20773.64	4.1
1988	19960.49	-0.4
1987	20046.61	5.0





# Activity Sheet 1: The Total Price Christmas Story

Graph the PNC CPI percent change and year from Fact Sheet 2. Be sure to label the graph and allow yourself space to plot negative numbers.



Please write down 1 statements based on the information from the graph you created. For example, the graph shows that the Cost of Christmas has gone up since 1986.

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10	



## Activity Sheet 2: Estimate the PNC CPI

Estimate the prices of the individual gifts mentioned in the *Twelve Days of Christmas* song and the total cost of this year's PNC Christmas Price Index. You must submit your answers on this worksheet.

HINT: The average percent change of the PNC CPI over the last 30 years is 5.3%. As you form your estimate, consider the impact of wages and prices for goods and services on the PNC CPI.

HINT: Looking at the difference in prices over a longer period of time could potentially provide a more accurate estimate of the price changes. Complete the table to help make your estimate.

### Part 1: The Gifts

	Gift	2013	2014	2015	2016	2017	2018
A	Partridge & Pear Tree	199.99	207.88	214.99	209.99	219.95	
B	2 Turtle Doves	260.00	260.00	290.00	375.00	375.00	
C	3 French Hens	165.00	181.00	181.50	181.50	181.50	
D	4 Calling Birds	599.96	599.96	599.60	599.96	599.96	
E	5 Golden Rings	750.00	750.00	750.00	750.00	825.00	
F	6 Geese	210.00	360.00	360.00	360.00	360.00	
G	7 Swans	13125.00	13125.00	13125.00	13125.00	13,125.00	
H	8 Maids	58.00	58.00	58.00	58.00	58.00	
I	9 Ladies	7552.84	7552.84	7552.84	7552.84	7,552.84	
J	10 Lords	5243.37	5348.24	5508.70	5508.70	5,618.90	
K	11 Pipers	2635.20	2635.20	2635.20	2708.40	2,708.40	
L	12 Drummers	2854.80	2854.80	2854.80	2934.10	2,934.10	

### Part 2: Total PNC CPI

		2013	2014	2015	2016	2017	2018
M	Total Cost of Christmas	33653.17	33933.22	34130.99	34363.49	34558.65	



