Inflate your knowledge

GRADES 11–12

In this lesson, students have an opportunity to experience the effects of inflation first-hand through an interactive classroom auction! Students will learn about the Consumer Price Index (CPI) as a measure of purchasing power and standard of living and apply their knowledge to goods and services they purchase today.

Subject

CIC3E – Making Economic Choices
CIE3M – The Individual and the Economy
BBI1O/2O – Introduction to Business

Suggested timing

70 minutes

Financial literacy objectives

At the end of this lesson, students will:

- describe the correlation between income and factors such as education, economy, and worker supply and demand,
- describe government regulations and policies for savings and investments (e.g., CDIC),
- describe basic investment options.

Curriculum expectations

Canadian and World Studies, Grades 11 and 12 (2005)
Making Economic Choices (CIC3E)

Economic Decision Making

- Identify the factors (e.g., wage rates, inflation, taxation, exchange rates) that affect an individual's purchasing power and standard of living.

The Individual and the Economy (CIE3M)

Methods of Economic Inquiry and Communication

- Describe the construction and use of a price index.

Business Studies, Grades 9 and 10 (2006)
Introduction to Business (BBI1O/2O)

Finance

- Assess the factors that will affect the value of investments over time (e.g., compound interest, rate of inflation, diversification of portfolio).

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Assessment

- Gallery walk: luxury item
- Closing reflection

What you need

- Two identical sets of 6-8 items that would appeal to students (to be used in the classroom auction)
- Print outs of auction money (Appendix A), cut out
- Student copies of Assessing economic trends: measuring inflation, Student notes (Appendix B)
- Chart paper
- Assorted markers
- Tape

Minds On

Write "standard of living" on the board and ask students to raise their hand if they have heard the phrase before. Then ask students to share their understanding of what it means.

After ideas have been shared, explain to students that our standard of living is a measure of the things that allow us to live comfortably. Explain that factors that affect our standard of living or quality of life include our education, health and income.

Activity: classroom auction

Invite students to raise their hand if they currently have a part-time job. Then, ask students what the current minimum wage rate is in Ontario (Jan. 2014 – $10.25/hour). Once the class has come up with the correct answer, ask students to guess what the minimum wage rate was in 1995 ($6.85/hour). Wow! Students today are rich compared to 1995!

Then, write a list of the following items on the board: Burger, bottle of pop (2L), chocolate bar. Ask students to estimate how much each of the items costs now.

- Hamburger – approx. $1.50 CAD
- 2L bottle of pop – approx. $1.99 CAD
- Chocolate bar – approx. $1.15 CAD

Then, explain that in 1995, the price of a hamburger was about $0.85. A 2L bottle of pop was $0.99, and a chocolate bar was $0.50! Ask students to come up with reasons why prices and therefore wages have increased over time.

Write the word "inflation" on the board and ask students to share their understanding of what it means. Write key phrases around the word as students share their ideas.

Minds on
(cont'd)

Round 1
Explain to students that to better understand the concept of inflation, we will be holding an auction in the class. Display one set of the 6-8 items you have chosen to auction to the class at the front of the room (pencils, rulers, etc.). Distribute $200 worth of $1, $5 and $10 auction money bills (Appendix A) to students. Keep some bills at the front of the room to give students change if they need it.

Describe the process of an auction and begin the auction with the first item. Once the bidding has finished, accept the money from the highest bidder and award them their auctioned item. Write the title "Round 1" on the board, and record the name of the item that was just sold and the price it was sold at.

Continue this process for the rest of the items. *Students may realize on their own that they can pool their money together to purchase items that can be shared.*

Round 2
Tell the class that since everyone did not get an item in the last round, we will hold a second auction (display the second set of items, identical to the items from the last round). Distribute $400 of auction money to the class.

Repeat the steps of the auction for the second round of items. Record the price that each item sold at on the board under the title "Round 2."

Once the second auction has finished, ask students to tally up the total amount the class paid for the items in Round 1. Ask students to do the same for Round 2 and record both totals on the board.

Calculate the percentage price increase of the basket of goods from Round 1 to Round 2 [(Round 2 total – Round 1 total) / Round 1 total]. Explain that this is the inflation rate we experienced in the class.

Lead a class discussion based on the following questions:
1. Why did the price of the items increase? Did the items themselves change?
2. If Canada's federal budget is running a deficit, why doesn't the government print more money to cover the costs? (No one has to know!)

Teacher note:
The latest economic indicators can be found at the Statistics Canada website at: **www.statcan.gc.ca**

Minds on
(cont'd)

Context for learning
Bill Fold is a character who is constantly getting himself into financial scrapes. Use the scenario below to provide students with a context for learning.

Bill Fold has just landed a summer job! Bill does not want to take on any risk when it comes to his money, so he has decided that he will save his money in a chequing account. There is no safer place for his money than a chequing account, right?

Action

Instruction: the Consumer Price Index (CPI)
Distribute Assessing economic trends: measuring inflation (Appendix B) to the class.

Ask students to reflect on how we knew that prices had been inflated from the first round to the second round in our classroom auction (the exact same group of goods cost more in the second round than in the first round). Explain that this is also how the Government of Canada measures inflation across the country – by tracking the same basket of goods and services purchased by Canadians across many years.

Explain that the Consumer Price Index (CPI) tracks the cost of a *fixed basket* of goods (just like the ones we auctioned) purchased by Canadians in a particular year and compares it to the cost of the same items in 2002. The reference year (currently 2002) is arbitrary and set in advance. CPI can therefore measure general price level changes of goods and services and is often used to estimate changes in the purchasing power of the Canadian dollar.

The fixed basket as of January 2013 was divided as follows:

Component	Weighting
Food	16.60%
Shelter	26.26%
Household operations, furnishings and equipment	12.66%
Clothing and footwear	5.82%
Transportation	19.98%
Health and personal care	4.93%
Recreation, education and reading	10.96%
Alcoholic beverages and tobacco products	2.79%
Total	**100%**

Source: Statistics Canada

Action
(cont'd)

CPI is one of the indicators Canada and its provinces and territories use to help assess the current inflation environment and understand its effect on our standard of living. (Higher CPI means inflation, and inflation means a lower standard of living.)

Instruct students on how to interpret the CPI table in Appendix B.

As a potential lesson expansion, you may want to consider:

- The potential limitations of the CPI measure. Examples: 1. not dynamic, fixed basket; 2. not reflective of what individual people actually consume, because it is set in advance for an average family; 3. core CPI (excluding the volatile effects of oil prices and some food products)
- A history of the CPI through time, and its relationship with inflationary periods such as 1973-1981
- Talking about the GDP deflator (similar to CPI and used to convert nominal GDP into real GDP)

Guided practice: case study

Using Appendix B (Case study: is it worth more?), guide students through the case study. Clearly demonstrate the steps of each calculation to help students see the relationship between CPI, purchasing power and inflation. Invite volunteers to the board to demonstrate the steps in the calculation.

Gallery walk: luxury item

Ask students to think of an item that they have always wanted. Allow students to use technology or their own estimations to determine the cost of the item today.

Distribute half of a sheet of chart paper (cut horizontally) to each student and give the following instructions:

1. Rotate the chart paper to landscape orientation and write your name in the top right corner of the paper.
2. Write your luxury item as the title of the page in large letters.
3. Underneath the title, write the following headings:
   a. Today's price:
   b. 2010 price:
   c. 2000 price:
   d. 1994 price:
4. Calculate what the cost of the luxury item would have been in 2010, 2000 and 1994 using the CPI table in Appendix B. Show your calculations neatly on the chart paper.

Consolidation/ debrief

Once students are finished, group students in pairs to assess each other's work before posting it in the class. Have students check whether their peer has completed each of the steps and performed accurate calculations. Circulate the room to observe and support feedback between students. Instruct peer assessors to write their name at the bottom of their peer's chart paper (e.g., "Assessed by: Jin").

Once complete, post students' work around the room and encourage students to take part in a gallery walk and observe their classmates' calculations.

Class discussion

Using the critical questions below as a guide, make connections among issues of income and inflation and their depictions in student calculations.

1. If your wages increase by a certain percentage each year, does that mean that your standard of living automatically increases?
2. Did the Ontario minimum wage rate keep up with inflation? (The minimum wage in 1995 was $6.85 and in 2012 it was $10.25.)
3. If your wages increased by 1% each year for 5 years, and inflation is 2%, is your standard of living better, worse, or about the same? What would wages have to increase by each year to maintain your standard of living?
4. Do you think the wages for the following professions kept up with inflation since 1994? Why or why not? (Think of supply and demand)
   - Trades
   - Information and communication technology
   - Retail
5. What can we do as consumers to preserve our purchasing power?

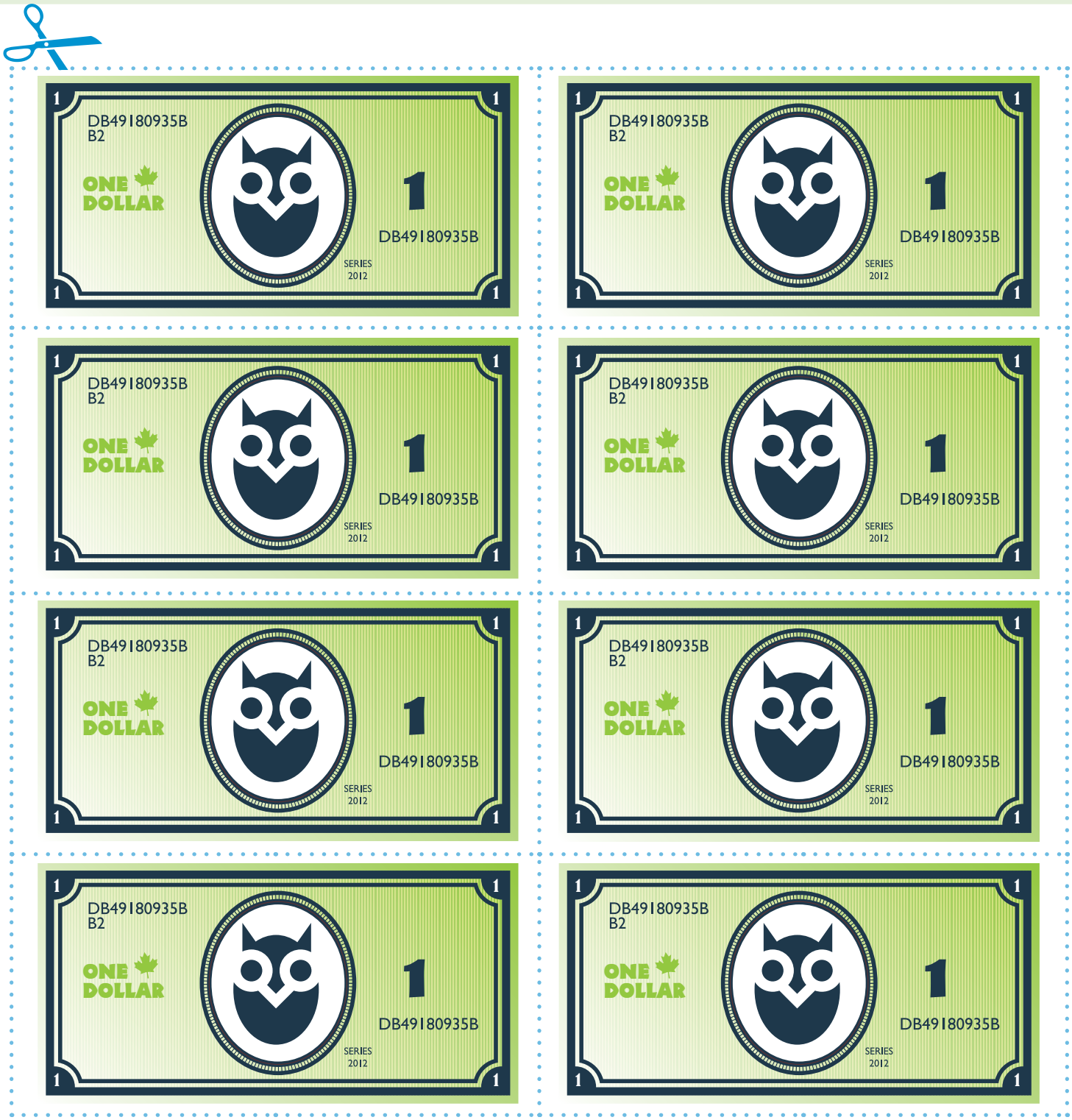
Closing reflection

Write the following question on the board: "What is the risk of taking no risk when investing?" (e.g., What risk, if any, do you take by putting all of your money in a chequing account?)

Ask students to use what they have learned today about inflation and respond to this question in a half-page reflection. Student reflection sheets should be handed in and assessed as an assessment for learning.

Inflate your knowledge

Auction money



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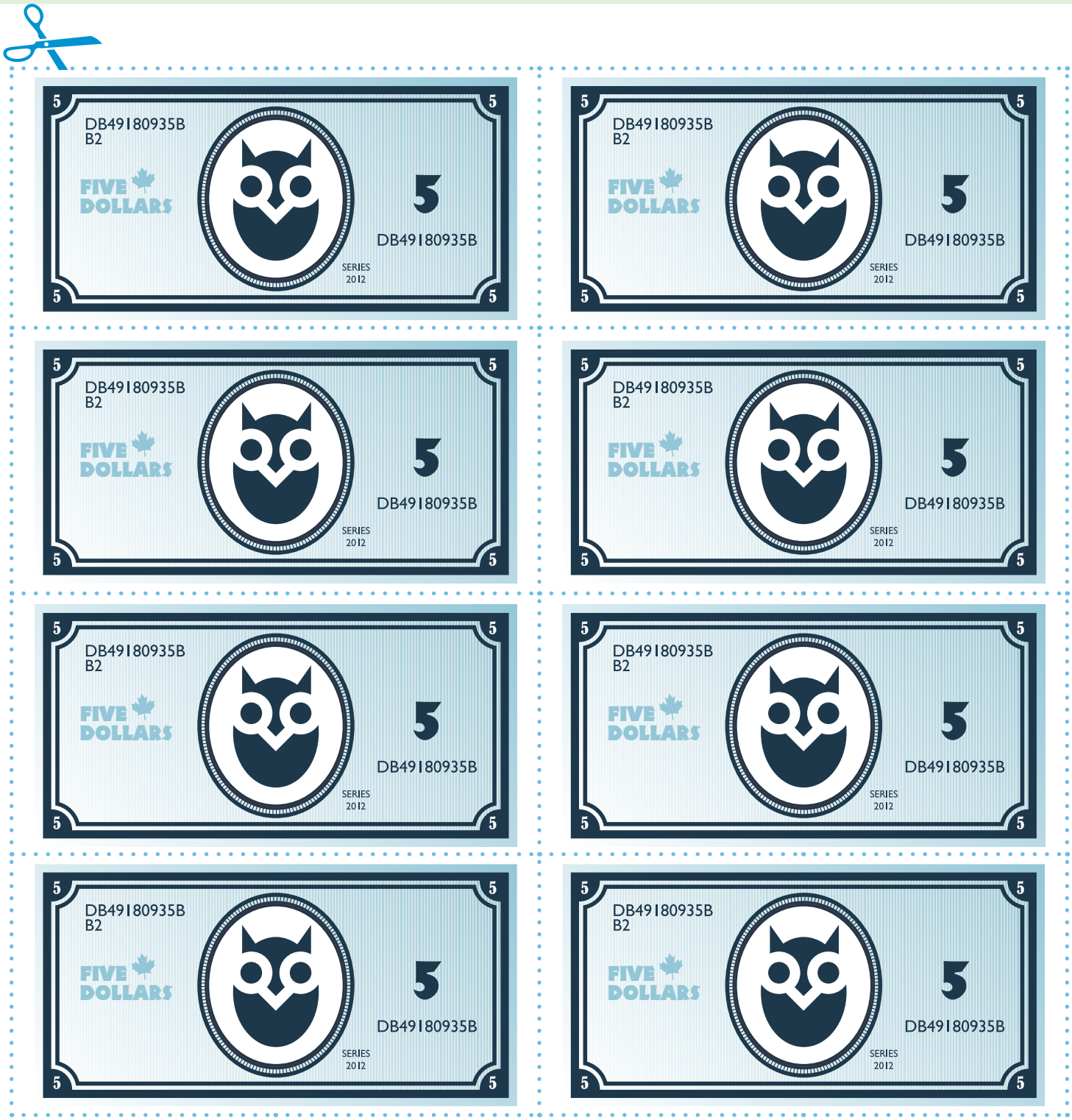
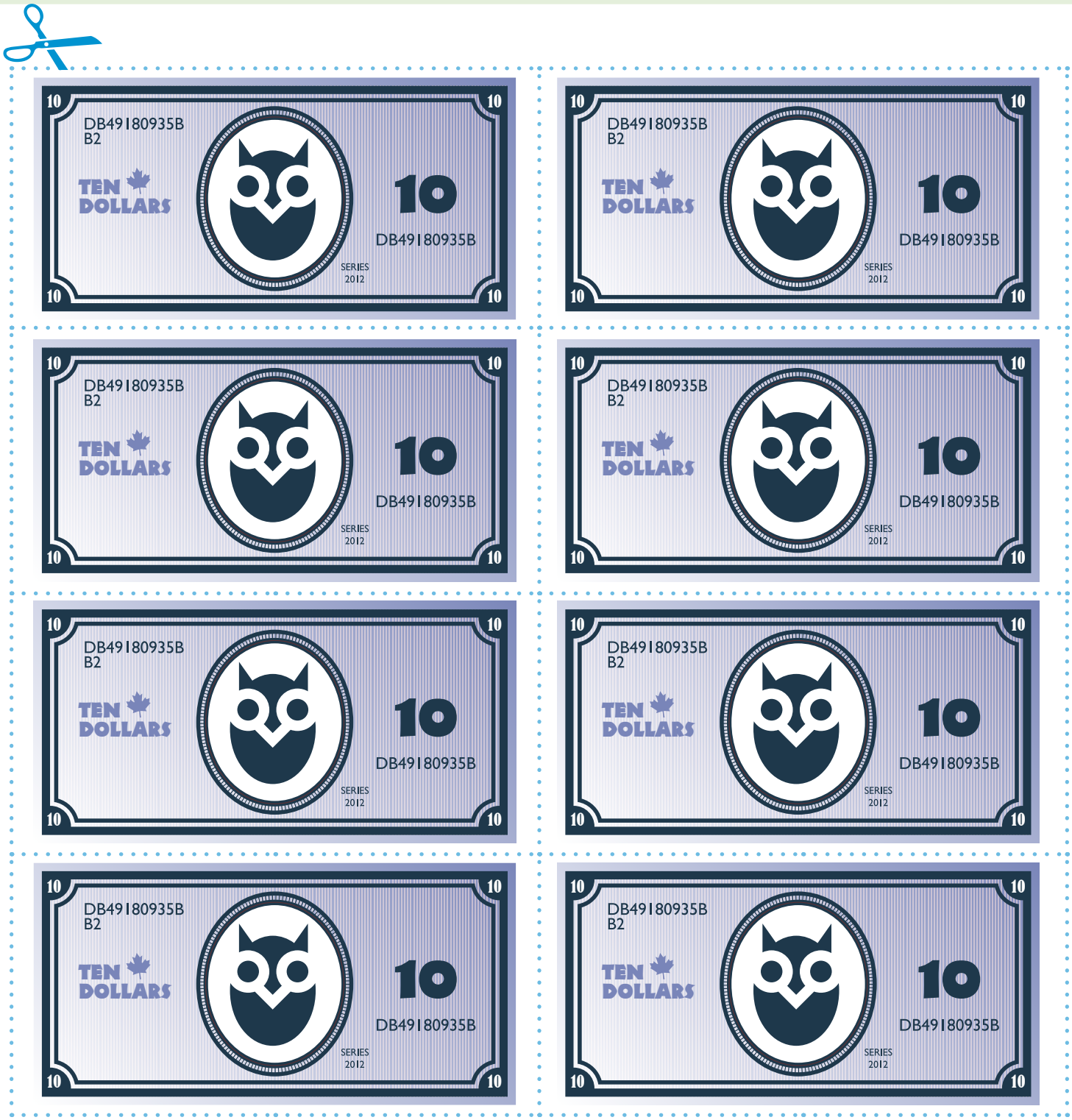


Inflate your knowledge

Auction money



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Assessing economic trends: measuring inflation

Student notes

Are everyday living expenses getting any less expensive? The answer is...not really! Many goods and services cost more today than they did 20 years ago. The reason why things cost more now is because of inflation. Inflation is the continuous rise in prices in the general economy over time. Therefore, the cost to maintain the same standard of living is increasing.

At the same time, household earnings or wages have also increased. The expectation that prices will continue to rise leads workers to demand higher wages to prevent themselves from falling behind. Cost of living adjustments (or allowances) are just one reason why wages may increase over time.

Measuring inflation: the Consumer Price Index (CPI)

"A dollar just doesn't stretch as far as it used to!"

The saying is generally true in absolute terms – as prices rise over time, one dollar buys fewer goods and services. In order to measure inflation in the economy, Statistics Canada relies on the concept of the Consumer Price Index (CPI). The CPI is obtained by comparing the cost of a fixed basket of goods and services purchased by Canadians in any given year compared to the cost of an equivalent basket of items in a fixed base year. (Currently, Statistics Canada uses 2002 as the base year.) By calculating growth in the CPI, we can estimate changes in the purchasing power of the Canadian dollar over time.

Year	CPI
1994	85.7
1996	88.9
1998	91.3
2000	95.4
2002	100.0
2004	104.7
2006	109.1
2008	114.1
2010	116.5
2012	121.7

Interpreting the CPI:
The table shows the level of the CPI in Canada every two years from 1994 to 2012 relative to the base-year level of 100 in 2002. For example, in 1994 the CPI measured 85.7, which means that a comparable basket of goods and services worth $100 in 2002 would have cost only $85.7 in 1994. Between any two years in the table, we can calculate the percentage change in the CPI to estimate the amount of inflation. In our example, between 1994 and 2002, inflation measured roughly 17%, meaning that prices for comparable goods and services increased by 17% over that period. Alternatively, we can say that the average purchasing power of one Canadian dollar in 1994 was equivalent to $1.17 in 2002.

Source: Statistics Canada
http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ46a-eng.htm

Assessing economic trends: measuring inflation (cont'd)

Case study: is it worth more?

Save today for a better tomorrow.

After many weeks of handing out resumés and cover letters, Bill Fold landed a summer student position at an office! All summer, he and another student, Aga, worked together on a campaign to explain why young people need to start investing as soon as they can.

Aga explained to Bill that due to changes in prices as well as inflation and deflation, the value of a dollar and how much it can buy (purchasing power) changes over time. Bill Fold didn't believe her. He thought that a dollar today is the same as one dollar tomorrow (it makes sense, right?).

Aga asked Bill to help her with some calculations. She wanted to know:

1. **How much would $1,000 in December 2008 be able to buy in December 2012?**

2. How far would Aga's money have gone if she could go back in time? **How much would $300 in 2012 have bought her in 1998?**

Assessing economic trends: measuring inflation (cont'd)

3. If a person's yearly gross salary was $35,000 in the year 2000, **how much would they have to be making in 2012 to maintain their standard of living?**

4. Write **your own** inflation question and solve it in the space below.