State Indicator/Competency:
1. Calculate expected values and use them to solve problems.

Instructional Objective(s):
8.6b Economic Statistics
1. Students will be able to calculate the purchasing power of the dollar with 80% accuracy.

Instructions:
1. Read through lesson and examples.
2. If able, watch suggested videos for extra instruction.
3. Complete the practice problems. Check your answers to see how you're doing.
4. Complete attached worksheet. Show your work. Worksheet will be collected and graded.
5. Questions? Contact me by email. butcherna@mwood.cc

Activities:

Purchasing Power of the Dollar

When inflation occurs, each dollar buys less than it did in the past. The **purchasing power of the dollar** is a measure of how much a dollar now buys compared to what it could buy during some base period. The **base period** is a time period with which all purchasing power of the dollar comparisons are made.

Suppose a Department of Labor report shows that the purchasing power of a dollar in 2007 was $0.48. In the base period, 1982–1984, the dollar was worth its full value of $1.00. In 2007, the dollar was worth $0.48 compared to the base value. This means that a 2007 dollar could buy only about $0.48 worth of the same goods that could have been bought in 1982–84. The 2007 dollar is worth less because of inflation.

Example:
1. Use the CPI table on the next page to calculate the purchasing power of the dollar for 2005, to the nearest tenth of a cent. *(nearest tenth of a cent is 3 decimal places)*

Find the CPI index for 2005 under the All Items column: 195.3
Find CPI index for base period (under All Items 1982-84):   100
Divide to find the Decimal Rate: $100 ÷ 195.3 = .512$
Purchasing power of the dollar in 2005:   1x.512
                                                                 = $0.512

							Education &	
	All	Food &			Transpor-	Medical	Recrea-	Communi-	
Years	Items	Beverages	Housing	Apparel	tation	Care	tion	cation	Other
1982–84	100.0	100.0	100.0	100.0	100.0	100.0	—	—	100.0
1994	148.2	147.2	145.4	130.5	137.1	215.3	93.0	90.3	202.4
1995	152.4	150.3	149.7	130.6	139.1	223.8	95.6	93.9	211.1
1996	156.9	156.6	154.0	130.3	145.2	230.6	98.5	97.1	218.7
1997	160.5	159.1	157.7	131.6	143.2	237.1	100.0	100.0	230.1
1998	163.0	162.7	161.3	130.7	140.7	245.2	101.2	100.7	250.3
1999	166.6	165.9	164.8	130.1	148.3	254.2	102.0	102.3	263.0
2000	172.2	170.5	171.9	127.8	154.4	264.8	103.7	103.6	274.0
2001	177.1	175.3	177.6	124.8	149.0	278.3	105.3	106.9	287.0
2002	179.9	177.8	181.1	121.5	154.2	291.3	106.5	109.2	295.8
2003	184.0	184.1	185.1	119.0	154.7	302.1	107.7	110.9	300.2
2004	188.9	188.9	190.7	118.8	164.8	314.9	108.5	112.6	307.8
2005	195.3	193.2	198.3	117.5	172.7	328.4	109.7	115.3	317.3
2006	201.6	197.4	204.8	118.6	175.4	340.1	110.8	118.9	326.7
2007	207.3	206.9	210.9	118.3	190.0	357.7	111.7	121.5	337.6

Historical Report—Consumer Price Index, 1994–2007
Categories of Goods and Services

2. Use the CPI table to find the purchasing power of the dollar in 2007, to the nearest tenth of a cent.

Find the CPI index for 2007 under the All Items column: 207.3
Find CPI index for base period (under All Items 1982-84):   100
Divide to find the Decimal Rate: 100 ÷ 207.3 = .4823
Purchasing power of the dollar in 2007:   1x.4823
     = $0.482

3. In 1982 the cost of a candy bar was $0.30. Using the CPI table, what would be the cost of the candy bar in 2005?

Food CPI for 2005:   195.3
Percent of increase from 1982 to 2005:   195.3 – 100 = 95.3%
Cost of candy bar in 2005:   0.30 + (0.30 x 95.3%) = 0.5859 = $0.59

FYI: Consumer Alert
 Scholarship Scams
Tuition rates for colleges and universities have been increasing at almost double the general inflation rate. That increase is leading to more and more students seeking scholarships to help pay for college. Many unscrupulous companies offer promises of scholarships, grants, or fantastic financial aid packages with high pressure sales pitches and upfront fees that must be paid immediately. Legitimate companies do not

guarantee scholarships or grants. You can find more information on scholarship scams from the Federal Trade Commission at www.ftc.gov.

Practice: Complete and check your answers.

1. Use the CPI table to find how much a 1997 dollar was worth compared to 1982–84, to the nearest tenth of a cent.   (answer: Purchasing Power of the Dollar: $0.623)

2. If the cost of a pair of Levi Jeans was $14 in 1983, what would be the cost in 1999? (answer: $18.21)

Use the Apparel category on the CPI.

Assignment: 8.6b PPD worksheet (10 pts)

BSN Math - Butcher   Name:_____
8.6b PPD worksheet

1. a. What was the Food category index number in the CPI in 2003?

   b. Compared to the base period, by 2003 the cost of food had increased by what percent? Assume   that the price of a box of cereal costing $1.70 in the base period increased at the same rate as all food prices.

   c. What would have been the price of cereal in 2003, to the nearest cent?

2. Use the CPI table to calculate the purchasing power of the dollar for these years, to the nearest tenth of a cent:
   a. 2004;

   b. 2007;

   c. 1998;

   d. 2000