

PERCENT OF CHANGE

PERCENT CHANGE

- Percent change describes the _____ over time by either an _____ or _____.
- It can be solved using a percent proportion in which the values are plugged into the formula below:

$$\frac{\%}{100} = \frac{\text{CHANGE}}{\text{ORIGINAL}}$$

- Change can be represented by the _____ between the new and original values.

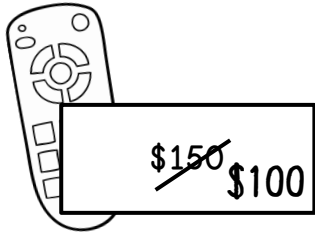
Use your understanding of percent change to complete the table below. Round all your answers to the nearest tenths place.



	A gallon of milk cost \$2.79 in 2000. In 2020, it cost \$3.98.	A frozen pizza cost \$3.00 in 2000. In 2020, it cost \$2.50.	A jumbo-sized movie popcorn cost \$8.20 in 2000. In 2020, it cost \$10.65.
ORIGINAL			
NEW			
CHANGE			
PERCENT PROPORTION AND WORK			
INCREASE OR DECREASE			
SOLUTION			

Apply your understanding of ratios and proportions to answer the questions below.

1. Dustin bought a DVD player that was marked down from \$150 to \$100. A video game console was \$250, and the price was dropped 15%. Which device has the greatest percent decrease?



2. A sweater is marked down from \$25 to \$19. What is the percent of change?

3. The 7th grade class had a 15% decrease in enrollment. Last year, the 7th grade class had 280 students. How many students are enrolled in the 7th grade class this year?

4. Randall's monthly water bill from April to July is listed in the table below. What was the percent increase in his bill from May to July?

MONTH	COST (\$)
April	54
May	78
June	122
July	136.50

5. Enrollment in the PTA increased by 35% this year. Last year there were 160 members in the PTA. How many PTA members are involved this year?

6. A pair of socks is purchased at wholesale for \$2.00. It is then sold to the customer for \$4.00. What is the percent increase?

7. Eugene earns \$2,700 monthly. He is going to be receiving a 3.5% raise. With this new raise, he believes he will earn more than \$2,800 a month. Is Eugene correct in his thinking? Why or why not? Justify your reasoning.

Summarize today's lesson:

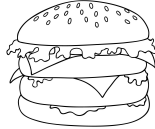
PERCENT OF CHANGE

Use your understanding of percent of change to answer the questions below.

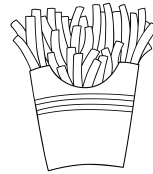
Marco is discussing how prices have changed with his son, Paul. Paul does not believe him, so they decide to research the price of their favorite food items. Use the information to determine the percent change in questions 1-4.



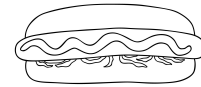
2000: \$7.50
2015: \$9.00



2000: \$5.00
2015: \$6.50



2000: \$2.00
2015: \$4.50



2000: \$2.50
2015: \$2.00

1. What is the percent of change in the cost of a pizza? _____
2. What is the percent of change in the cost of a cheeseburger? _____
3. What is the percent of change in the cost of a serving of fries? _____
4. What is the percent of change in the cost of a hot dog? _____

5. The price of a gallon of gas dropped from the summer high price of \$3.50 to the winter low price of \$2.87. By what percentage was the price of gas reduced?

6. In 2020, summer camp registration was \$15 more than it was in 2021. In 2020, registration was \$285. By what percentage did the summer camp registration decrease in 2021?

7. A baby weighs 18 pounds at her four-month appointment. Six months later, she weighs 24 pounds. By what percentage did the baby's weight increase?

8. The high school graduating class of 2000 was 260 students. Five years later, the graduating class was 320 students. By 2010, the graduating class rose to 400 students. In what five-year period did the high school graduating class experience the greatest percent of change?

PERCENT OF CHANGE

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- Percent change describes the change over time by either an increase or decrease.
- It can be solved using a percent proportion in which the values are plugged into the formula below:

$$\frac{\%}{100} = \frac{\text{CHANGE}}{\text{ORIGINAL}}$$

- Change can be represented by the difference between the new and original values.

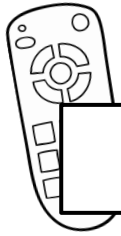
Use your understanding of percent change to complete the table below. Round all your answers to the nearest tenths place.



	A gallon of milk cost \$2.79 in 2000. In 2020, it cost \$3.98.	A frozen pizza cost \$3.00 in 2000. In 2020, it cost \$2.50.	A jumbo-sized movie popcorn cost \$8.20 in 2000. In 2020, it cost \$10.65.
ORIGINAL	2.79	3.00	8.20
NEW	3.98	2.50	10.65
CHANGE	1.19	0.50	2.45
PERCENT PROPORTION AND WORK	$\frac{x}{100} = \frac{1.19}{2.79}$	$\frac{x}{100} = \frac{0.50}{3.00}$	$\frac{x}{100} = \frac{2.45}{8.20}$
INCREASE OR DECREASE	increase	decrease	increase
SOLUTION	42.7%	-16.7%	29.9%

Apply your understanding of ratios and proportions to answer the questions below.

1. Dustin bought a DVD player that was marked down from \$150 to \$100. A video game console was \$250, and the price was dropped 15%. Which device has the greatest percent decrease?

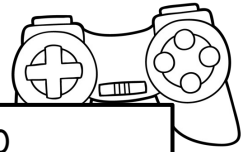


~~\$150~~
\$100

$$\frac{50}{150} = \frac{x}{100}$$

$$x = 33.\bar{3}\%$$

The DVD Player



\$250
ON SALE 15% OFF

2. A sweater is marked down from \$25 to \$19. What is the percent of change?

$$\frac{6}{25} = \frac{x}{100}$$

-24%

3. The 7th grade class had a 15% decrease in enrollment. Last year, the 7th grade class had 280 students. How many students are enrolled in the 7th grade class this year?

$$\frac{x}{280} = \frac{15}{100}$$

238 students

4. Randall's monthly water bill from April to July is listed in the table below. What was the percent increase in his bill from May to July?

MONTH	COST (\$)
April	54
May	78
June	122
July	136.50

$$\frac{58.5}{78} = \frac{x}{100}$$

75%

5. Enrollment in the PTA increased by 35% this year. Last year there were 160 members in the PTA. How many PTA members are involved this year?

$$\frac{x}{160} = \frac{35}{100}$$

216 members

6. A pair of socks is purchased at wholesale for \$2.00. It is then sold to the customer for \$4.00. What is the percent increase?

$$\frac{2}{2} = \frac{x}{100}$$

100%

7. Eugene earns \$2,700 monthly. He is going to be receiving a 3.5% raise. With this new raise, he believes he will earn more than \$2,800 a month. Is Eugene correct in his thinking? Why or why not? Justify your reasoning.

Eugene will not be earning more than \$2,800 a month. With the 3.5%, he will be earning \$94.50 extra a month, which would increase his monthly salary to \$2,794.50.

Summarize today's lesson:

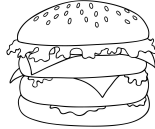
PERCENT OF CHANGE

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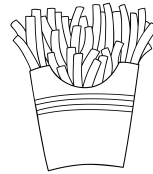
Marco is discussing how prices have changed with his son, Paul. Paul does not believe him, so they decide to research the price of their favorite food items. Use the information to determine the percent change in questions 1-4.



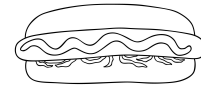
2000: \$7.50
2015: \$9.00



2000: \$5.00
2015: \$6.50



2000: \$2.00
2015: \$4.50



2000: \$2.50
2015: \$2.00

1. What is the percent of change in the cost of a pizza? 20%
2. What is the percent of change in the cost of a cheeseburger? 30%
3. What is the percent of change in the cost of a serving of fries? 125%
4. What is the percent of change in the cost of a hot dog? -20%

5. The price of a gallon of gas dropped from the summer high price of \$3.50 to the winter low price of \$2.87. By what percentage was the price of gas reduced?

-18%

6. In 2020, summer camp registration was \$15 more than it was in 2021. In 2020, registration was \$285. By what percentage did the summer camp registration decrease in 2021?

-5%

7. A baby weighs 18 pounds at her four-month appointment. Six months later, she weighs 24 pounds. By what percentage did the baby's weight increase?

33.3%

8. The high school graduating class of 2000 was 260 students. Five years later, the graduating class was 320 students. By 2010, the graduating class rose to 400 students. In what five-year period did the high school graduating class experience the greatest percent of change?

from 2005 to 2010

ITEMS NEEDED AND KEY

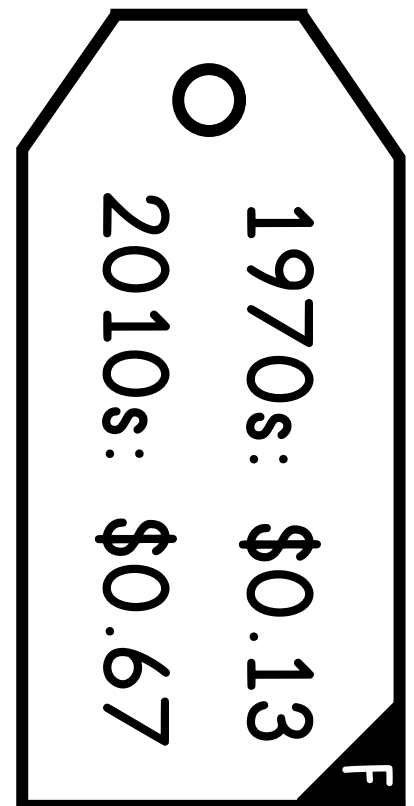
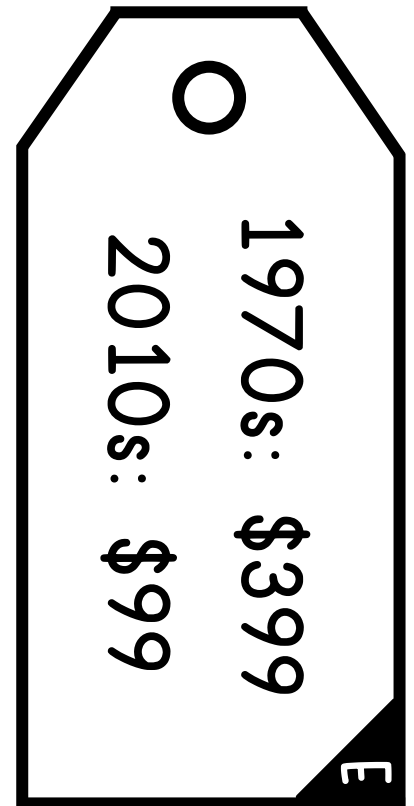
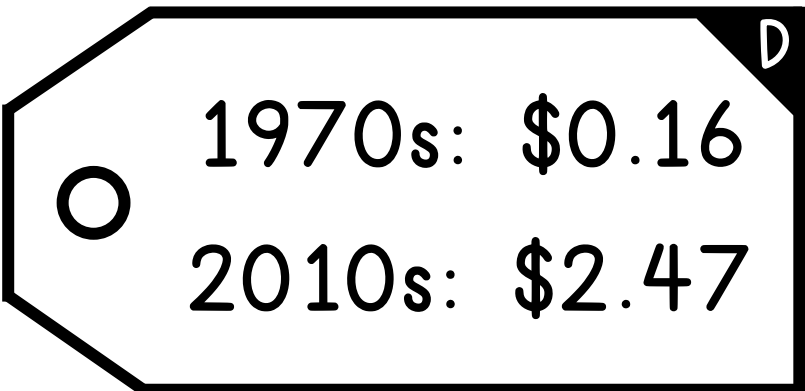
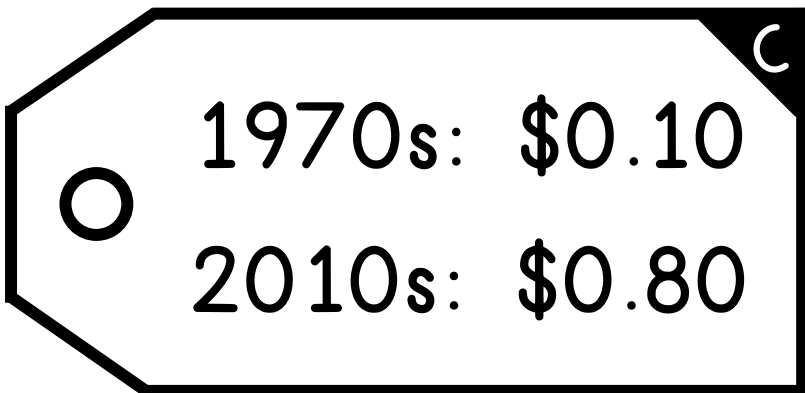
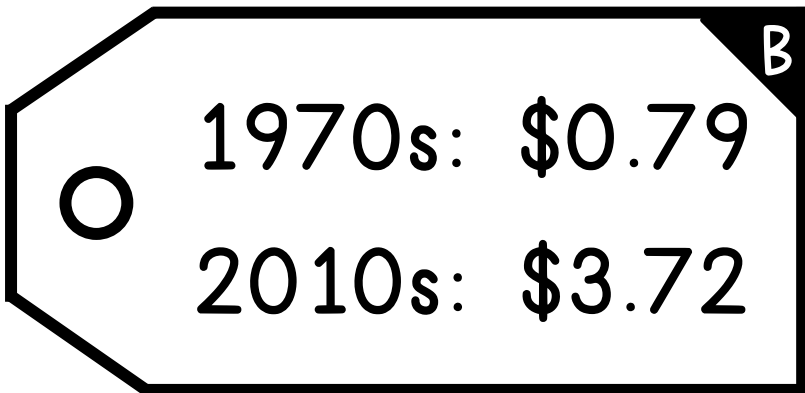
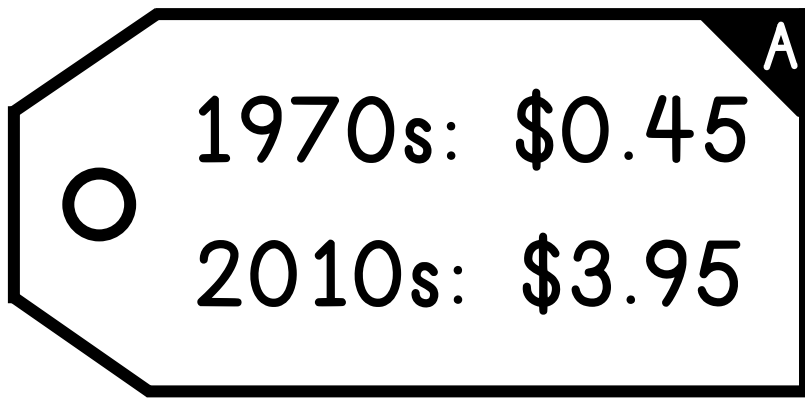
It is not necessary to have the items below. If you do, it will be more interactive for students and always creates interest. 😊

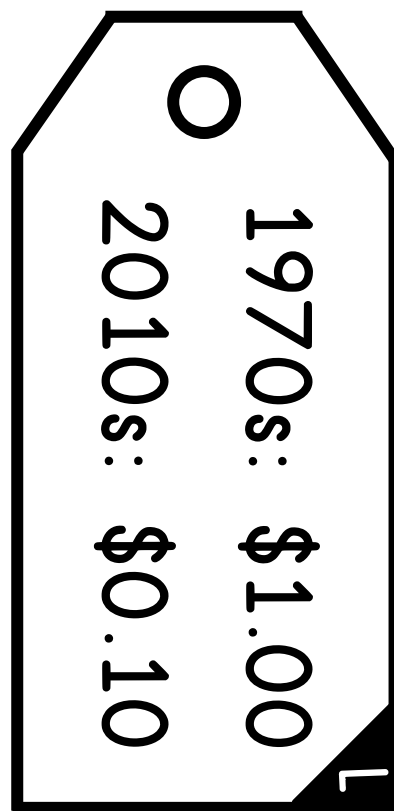
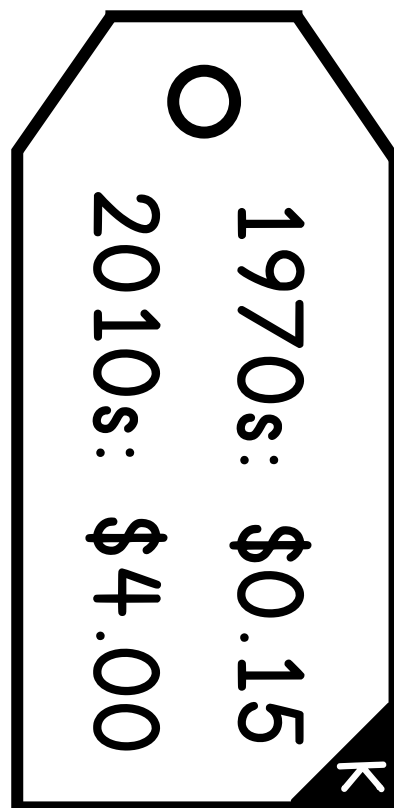
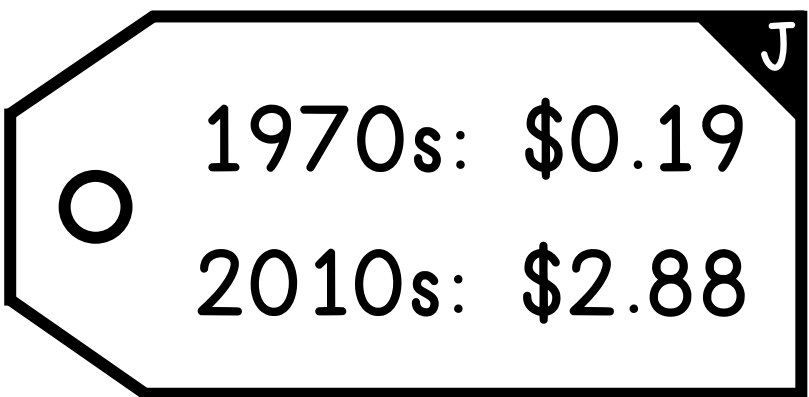
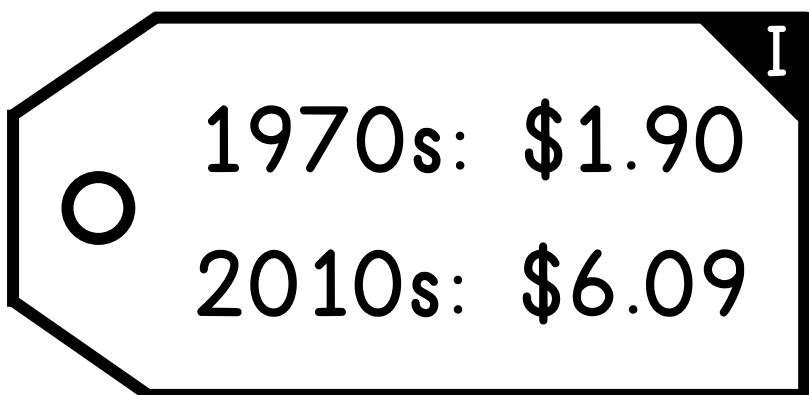
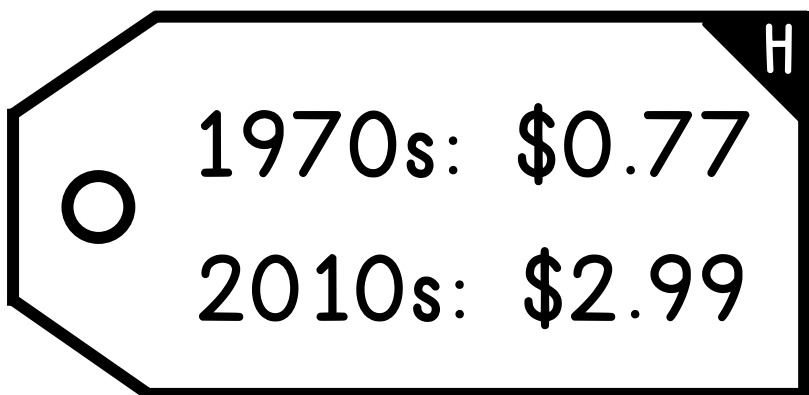
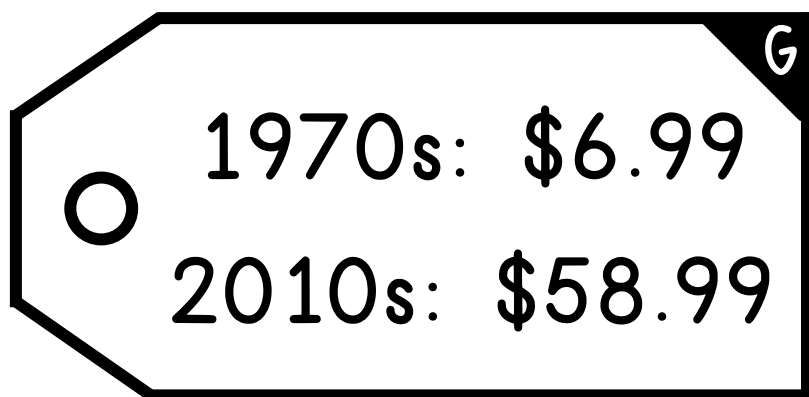
TAG	ITEM	PERCENT CHANGE
A	Breakfast Cereal	778%
B	Shampoo	371%
C	Canned Soup	700%
D	Box of Kleenex	1,444%
E	Camera	-75%
F	Roll of Toilet Paper	415%
G	Pair of Shoes	744%
H	Toothpaste	288%
I	One Pound of Coffee	221%
J	Ketchup	1,416%
K	Magazine	2,567%
L	Photograph Print	-90%

Challenge: Haddon was correct because the percent increase in the cost of milk between 1970 and 1990 was 81%. The percent increase in the cost of milk between 1990 and 2010 was 40%.

If you don't have the time or supplies, you can easily switch them out and use the tags or you can use the table tents without items.

It is not necessary for students to go to each and every item. The recording sheet includes enough space for eight stations.





PERCENT CHANGE ACTIVITY

Determine the percent of change based on the prices listed. Round to the nearest percent.

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

ITEM:
1970s PRICE:
2010s PRICE:
WORK:
SOLUTION:

Challenge! In 1970 the cost of a gallon of milk was \$1.54, in 1990 the cost of a gallon of milk was \$2.78, and in 2010 the cost of a gallon of milk was \$3.88. Haddon says that the percent increase in the cost of milk was greater between 1970 and 1990. Evelyn says that the percent increase in the cost of milk was greater between 1990 and 2010. Who is correct? Justify your thinking.

BREAKFAST CEREAL

1970s: \$0.45

2010s: \$3.95

SHAMPOO

1970s: \$0.79

2010s: \$3.72

CANNED SOUP		BOX OF KLEENEX	
1970s:	\$0.10	1970s:	\$0.16
2010s:	\$0.80	2010s:	\$2.47

COST OF GOODS SOLD	
CAMERA	ROLL OF TOILET PAPER
1970s: \$399	1970s: \$0.13
2010s: \$99	2010s: \$0.67

PAIR OF SHOES	TOOTHPASTE
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1970s: \$6.99

2010s: \$58.99

TOOTHPASTE

1970s: \$0.77

2010s: \$2.99

ONE POUND OF COFFEE	KETCHUP
1970s: \$1.90 2010s: \$6.09	1970s: \$0.19 2010s: \$2.88

MAGAZINE	PHOTOGRAPH
1970s: \$0.15 2010s: \$4.00	1970s: \$1.00 2010s: \$0.10