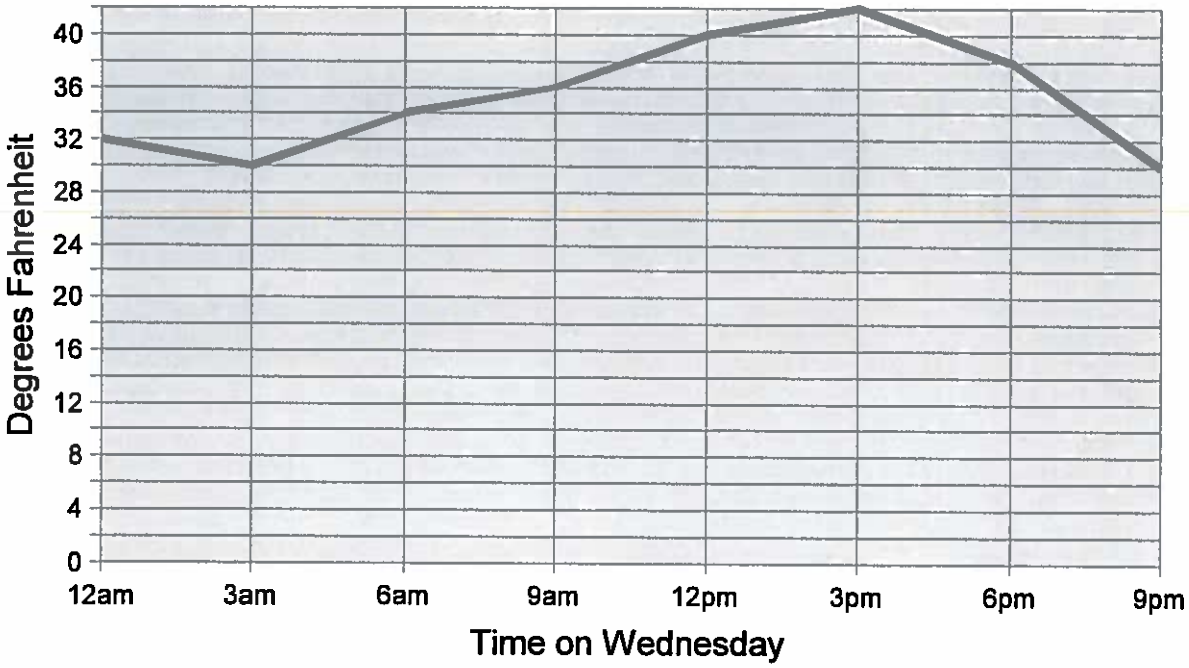
Sept 2

Name: _____ **Reading a Line Graph**

Air Temperature on Wednesday



1. What was the air temperature at noon on Wednesday? 1. _____

2. What was the air temperature at 6pm on Wednesday? 2. _____

3. Did the air temperature rise or fall between 6am and 9am? 3. _____

4. What is the difference in air temperature between midnight and noon? 4. _____

5. Was it warmer at 9am or 9pm? 5. _____

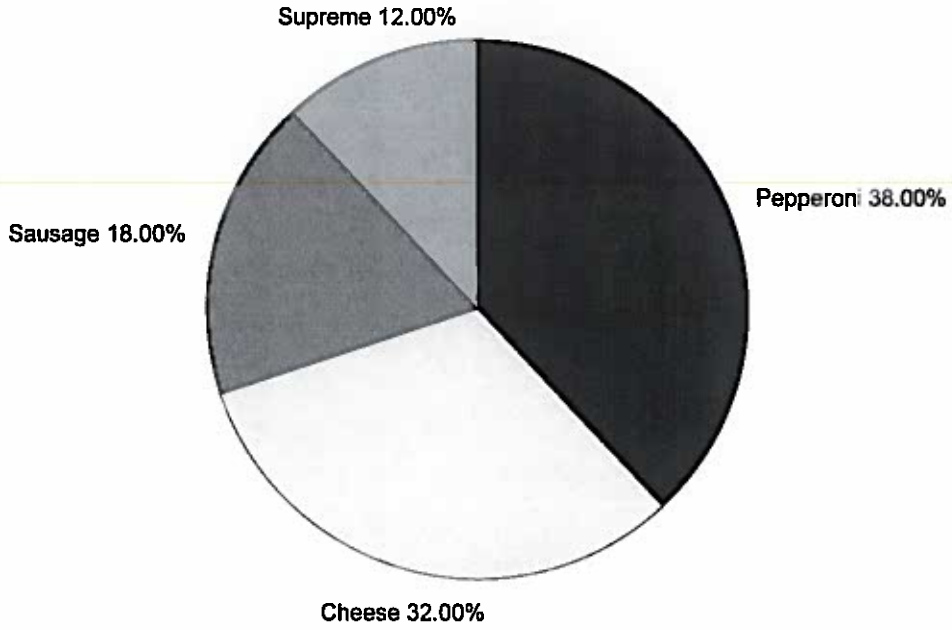
6. At what time was the air temperature the warmest? 6. _____

7. Is this more likely to be a line graph showing air temperatures in Maine or New Mexico? 7. _____

Sept 3

Name: _____ **Reading a Pie Graph**

Favorite Types of Pizza



1. Of the people who took the survey, what pizza topping do most people prefer? 1. _____

2. What percentage of people surveyed like supreme pizza the best? 2. _____

3. What percentage liked cheese pizza the best? 3. _____

4. Did more or less than half of the people surveyed like pepperoni pizza the best? 4. _____

5. Did more or less than one-fourth of the people surveyed like sausage pizza the best? 5. _____

6. Did more or less than one-fourth of the people surveyed like cheese pizza the best? 6. _____

7. Which type of pizza would you have chosen? 7. _____

Name _____

Using a Table

Answer the questions using the information from the table.

★ Features of Best Selling Printers ★						
Product	**Price**	**Pages per minute**	**Duplex Printing**	**Media**	**Monthly Duty Cycle**	**Rating**
Gotta Have It Printer	$179.00	16 ppm	No	letter, legal, envelopes, index	20,000 sheets	★★★
Multi Task Printer	$399.95	28 ppm	No	letter, legal, envelopes, banner, statements, fax	15,000 sheets	★★★★
Super Duper Printer	$449.98	37 ppm	Yes	letter, legal, envelopes, photo, banner, index, folio	45,000 sheets	★★★★
Office Essentials Printer	$379.99	25 ppm	Yes	letter, legal, envelopes, index, transparencies, photo	50,000 sheets	★★★★★
Workaholic Printer	$299.00	25 ppm	No	letter, legal, envelopes, index	55,000 sheets	★★★
Print Perfection Printer	$279.00	30 ppm	No	letter, legal, envelopes	35,000 sheets	★★★★

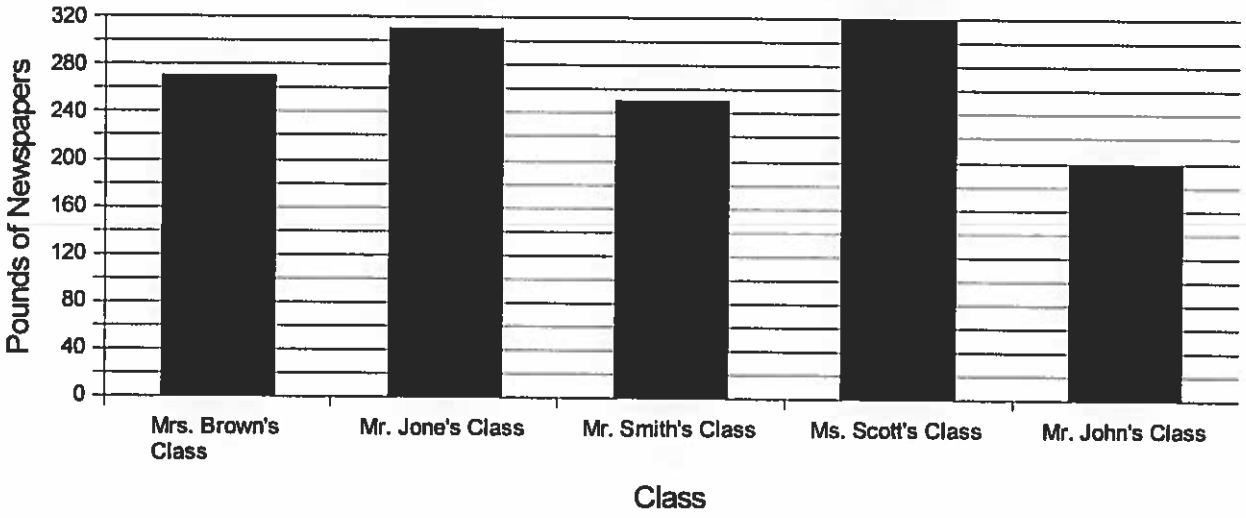
1. Which printer or printers will print banners? _____
2. Which printer is the least expensive? _____
3. Which printer or printers will perform duplex printing? _____
4. What media does the Office Essentials Printer accept that none of the other printers does? _____
5. Which printer has the best rating? _____
6. Which printer has the lowest monthly duty cycle? _____
7. How many printers print 25 pages per minute? _____
8. Do all of the printers print legal size paper? _____
9. Which printer is the most expensive? _____
10. Which rating was given to more printers? _____

8 of 4

Sept 5

Your name: _____ **Reading a Bar Graph**

Pounds of Newspapers Recycled by Abraham Lincoln Elementary School Students



1. How many pounds of newspaper did Mrs. Brown's class recycle? 1. _____

2. How many pounds of newspaper did Mr. Jone's class recycle? 2. _____

3. How many more pounds did Mr. Scott's class recycle than Mr. John's class? Show your work in the space below. 3. _____

4. Are the numbers on the scale counting by 20s, 30s, 40s, or 50s? 4. _____

5. Do the horizontal lines show increments of 20s, 30s, 40s, or 50s? 5. _____

6. Which class recycled the most newspapers? 6. _____

7. How many pounds of newspapers were recycled in all? Show your work in the space below. 7. _____

Sept 2,3,4,5

DO NOT WRITE ON ME!

Scientific Method - Controls and Variables

Please write your answers on a separate sheet of paper.

Write a definition for each:

Control -
Variable -
Independent Variable -
Dependent Variable -

SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions.

Krusty Krabs Breath Mints

Mr. Krabs created a secret ingredient for a breath mint that he thinks will "cure" the bad breath people get from eating crabby patties at the Krusty Krab. He asked 100 customers with a history of bad breath to try his new breath mint. He had fifty customers (Group A) eat a breath mint after they finished eating a crabby patty. The other fifty (Group B) also received a breath mint after they finished the sandwich, however, it was just a regular breath mint and did not have the secret ingredient. Both groups were told that they were getting the breath mint that would cure their bad breath. Two hours after eating the crabby patties, thirty customers in Group A and ten customers in Group B reported having better breath than they normally had after eating crabby patties.

1. Which people are in the control group?
2. What is the independent variable?
3. What is the dependent variable?
4. What should Mr. Krabs' conclusion be?
5. Why do you think 10 people in group B reported fresher breath?

SpongeBob Clean Pants

SpongeBob noticed that his favorite pants were not as clean as they used to be. His friend Sandy told him that he should try using Clean-O detergent, a new laundry soap she found at Sail-Mart. SpongeBob made sure to wash one pair of pants in plain water and another pair in water with the Clean-O detergent. After washing both pairs of pants a total of three times, the pants washed in the Clean-O detergent did not appear to be any cleaner than the pants washed in plain water.

6. What was the problem SpongeBob wanted to investigate?
7. What is the independent variable?
8. What is the dependent variable?
9. What should Sponge Bob's conclusion be?

Squidward's Symphony

Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he has played. In order to test his hypothesis, Squidward played a song on his clarinet for a total of 5 minutes and counted the number of jellyfish he saw in his front yard. He played the song a total of 3 times on his clarinet and repeated the experiment using a flute and a guitar. He also recorded the number of jellyfish he observed when he was not playing an instrument. The results are shown in the chart.

Number of Jellyfish/Instrument

Trial	No Music	Clarinet	Flute	Guitar
1	5	15	5	12
2	3	10	8	18
3	2	12	9	7

10. What is the independent variable?

11. What is the dependent variable?

12. What should Squidward's conclusion be?

13. Are the results reliable? Why or why not?

Super Bubbles

Patrick and SpongeBob love to blow bubbles! Patrick found some Super Bubble Soap at Sail-Mart. The ads claim that Super Bubble Soap will produce bubbles that are twice as big as bubbles made with regular bubble soap. Patrick and SpongeBob made up two samples of bubble solution. One sample was made with 5 oz. of Super Bubble Soap and 5 oz. of water, the other was made with the same amount of water and 5 oz. of regular bubble soap. Patrick and SpongeBob used their favorite bubble wands to blow 10 different bubbles and did their best to measure the diameter of each one. The results are shown in the chart

14. What did the Super Bubble ads claim?

15. What is the independent variable?

16. What is the dependent variable?

17. Look at the results in the chart.
a. Calculate the average diameter for each bubble solution.
Super Bubble = _____ cm Regular Soap = _____ cm

b. What should their conclusion be?

18. Are the results reliable? Why or why not?

Bubbles
(Diameter in centimeters)

Bubble	Super Bubble	Regular Soap
1	15	10
2	10	5
3	12	16
4	18	14
5	22	11
6	13	12
7	16	11
8	18	15
9	15	15
10	12	6

Scientific Method - Controls and Variables ANSWER KEY

Write a definition for each:

Control - A part of the experiment that is not being tested and is used for comparison.

Variable - Any part of an experiment that can vary.

Independent Variable - The part of the experiment that is independent or changed by the scientists or person performing the experiment.

Dependent Variable - The part of the experiment that is affected by the independent variable.

SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions.

Krusty Krab Breath Mints

1. Which people are in the control group? The people who received the mint without the secret ingredient (Group B) would be the control group.
2. What is the independent variable? Secret ingredient in the breath mint
3. What is the dependent variable? Amount of breath odor (or bad breath)
4. What should Mr. Krabs' conclusion be? The breath mint with the secret ingredient appears to reduce the amount of breath odor more than half the time, but it is not 100% effective.
5. Why do you think 10 people in group B reported fresher breath? This may be due to the placebo effect.

Sponge Bob Clean Pants

6. What was the problem? SpongeBob's pants were not clean.
7. What is the independent variable? Laundry soap
8. What is the dependent variable? Amount of dirt left on the pants (or how clean the pants were)
9. What should Sponge Bob's conclusion be? Clean-O laundry soap does not appear to be effective in cleaning his pants.

Squidward's Symphony

10. What is the independent variable? Instrument
11. What is the dependent variable? Number of jellyfish
12. What should Squidward's conclusion be? The clarinet did seem to attract a large number of jellyfish, but the average number for the three trials also matched the average for the guitar. The flute attracted the least number of jellyfish, but the average for this category is still larger than the control. Music seems to attract jellyfish in greater numbers than when no music is played. Squidward's hypothesis that the clarinet attracts larger numbers of jellyfish than other instruments is not proven by this experiment alone.
13. Are the results reliable? Based on the limited amount of information provided, it is difficult to tell if Squidward's results are reliable. The description did not tell how long each break was between trials. Did he leave enough time for the jellyfish to "clear out" of the area? (NOTE: Accept other potential flaws that students can support.)

Super Bubbles

14. What did the Super Bubble ads claim? The ads claimed that the Super Bubble solution would produce
bubbles that were twice as large as those made with regular bubble soap.
15. What is the independent variable? Type of bubble solution
16. What is the dependent variable? Size (diameter) of the bubble
17. a. Calculate the average diameter for each. Super Bubble = 15.1 cm Regular Soap = 11.5 cm
b. What should their conclusion be? The Super Bubble solution did not seem to produce bubbles that
were twice as large as those made with the regular soap. Although the average for the Super Bubble
solution was larger than that for the regular soap, it was not "twice as large" as the ads claimed. In fact,
only two of the ten trials had results that would fit the ads claims.
18. Are the results reliable? Why or why not? The description does not say who blew the bubbles for each
solution. There may be differences in bubble sizes due to the person blowing the bubble rather than the bubble
solution. They might have considered having each person blow 5 bubbles with each solution. (NOTE: Accept
other potential flaws that students can support.)