**Warmup**:

Have you ever noticed that your computer will display items to purchase that seem to fit your personal wants and desires? Why is this happening?

**Lesson – Part I**

Show slides about data mining.

**Lesson – Part 2**

**INTRODUCTION**:

Most supermarkets today sell many different products. Most sell everything from milk and bread to hair dye and toilet paper. What you may not have thought about before is how all those products are arranged in your local supermarket. Companies spend a lot of money to find the best store layout - the one that will make them the most money. In deciding on a good (profitable) store layout, stores often use data mining. Data mining was created by computer and software engineers as a way of discovering new information from an already existing database.

Take Shop Rite for example. Whenever you use your Shop Rite Plus Club card, Shop Rite gathers information on all the items you just purchased. So if you go to the store on Monday and buy eggs, milk, and bread, Shop Rite will know what your purchased, when you purchased it and that you bought eggs, milk, and bread together. Once Shop Rite has this customer data, they will start looking for patterns to help them sell more. They may find that people who buy peanut butter always buy jelly, and these same people may buy bread at the same time. When they have this information, they can arrange their store to maximize their profits. If people always buy peanut butter and jelly together, Shop Rite will put them next to each other in the aisle - hoping more people will buy both items.

In this activity, you will be arranging the layout of your own store. You will be given a list of items you want to sell, and you will have results of data mining (called data mining associations). These associations should be used to help you arrange your store.

**GOALS**

In this activity, you will:

• Plan the arrangement of the items for sale in a store.

• Use data mining results to help arrange your store.

• Analyze trends in the arrangement of the store.

**\*\* Students should work in pairs**

**INSTRUCTIONS**

1. Below is a list of items you want to include in your store. (These are the same items that are

on the little pieces of green paper.) Look over this list with your group.

1. Milk

2. Bananas

3. Pepsi

4. Coke

5. Cheetos

6. Lays Potato Chips

7. Salsa

8. Tortilla Chips

9. Taco Seasoning

10. Taco Sauce

11. Bagels

12. Cream Cheese

13. Pickles

14. Lunchmeat

15. Frozen Pizza

16. Ranch Salad Dressing

17. Mayonnaise

18. Hot Sauce

19. Ice Cream

20. Diapers

21. Beer Nuts

22. Baby Food

23. Hair Dye

24. Bubble bath

25. Bleach

26. Frozen Chicken

Nuggets

27. Grape juice

28. Gatorade

29. Juice boxes

30. Hamburger

31. Hot Dogs

32. Hot Dog Buns

33. Plastic cups

34. Peanut Butter

35. Grape Jelly

36. Relish

37. Tuna

38. Frozen Pumpkin Pie

39. Kool-Aid

40. Eggs

41. Butter

42. Carrots

43. Ketchup

44. Bread

45. Pasta

46. Spaghetti Sauce

47. Toilet Bowl

Cleaner

48. Paper Towels

49. Toilet Paper

50. Disposable Latex

Gloves

2. You and your group should look at the list of items above and try to put all of the items into categories. Think of larger (more general) descriptions that could apply to more than one item. Record your categories in the space below.

3. The results of a data mining experiment are shown below. When you start planning your store

layout, you’ll need to use these associations to help you arrange some of your products. You

will also use the categories you came up with in step 2.

**Data Mining Associations**

1. Customers who buy Taco Seasoning also buy Toilet Paper.

2. Customers who buy Diapers also buy Beer Nuts.

3. Customers who buy Hot Dogs also buy Relish.

4. Customers who buy Frozen Chicken Nuggets also buy Hot Sauce.

5. Customers who buy Hair Dye also buy Disposable Latex Gloves.

6. Customers who buy Tuna also buy Relish.

7. Customers who buy Coke (but not Peps) also buy Lay’s Potato Chips

4. Using the blank store layout and the items given to you, arrange the items into aisles in the

store. Be sure to test your layout before you glue the items down! Keep the following points

in mind when deciding on the arrangement of your items.

• What will be at the front of each aisle? What will be at the back?

• How will the store be arranged from left to right?

• What items would shoppers want to see when they enter the store?

• What items would they want to see when they’re ready to check-out?

• Did you pay attention to the data mining associations?

**STUDENT WORKSHEET - DATA MINING**

Student: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

1. List the Categories for the 50 items in your store
2. Describe the way you arranged the aisles in your store
3. A new item is being introduced into your store - Chocolate Mint Hershey Syrup. Where would you place this new item in your store? Explain your reasoning.
4. Market research has found that coffee sales gives your store large profits. Where would you place coffee in your store to increase sales? Explain your decision
5. As a data miner, what types of data would be useful to increase profits in your store?