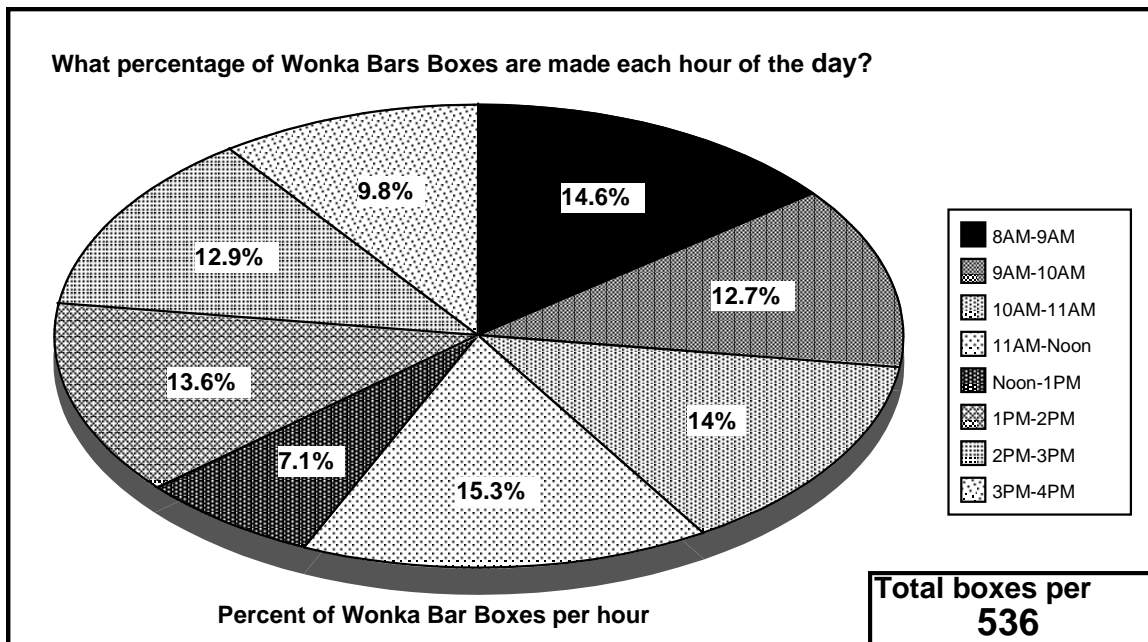




## Reading a Wonka Graph

### Introduction

Students will read, interpret data, and draw conclusions from a circle graph to obtain solutions to stated problems.



### Academic Content Standards

Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions.

Students develop and evaluate inferences, predictions and arguments that are based on data.

❖ **Ohio Academic Content Standards for Mathematics: #5 Data Analysis and Probability**

### Getting Started

#### Materials

- Paper
- Pencil
- Graphs: one for overhead illustration; one photocopy for each individual student or number of small groups.
- Handouts: depending on the ability level of your class, it may be helpful to offer the students a handout with formulas to assist with computations.

## Vocabulary

- Circle graph
- Percent (%)
- Quantity
- Conclusion
- Compare
- Contrast

## **Lesson**

### Orientation Activity

Present an overhead transparency of the model graph to generate class discussion. Each student or small group of students is distributed a photocopy of the model graph to touch and visually explore at a close proximity.

### Learning Activity

Present the graph to the class. As a large group, explore and discuss the graph, and identify elements such as: the title, range, labels, legend, and other specifics. During this discussion, observe and watch for students that are having difficulty comprehending the graph and its information.

Proceed to the following questions, once students have grasped the concept of the graph. Have individuals or students in small groups problem solve and find solutions to answer the questions. As a whole class, discuss each question and its answer immediately after a solution has been generated. The discussion will provide students with immediate feedback as well as an opportunity to correct any mistakes or illogical thoughts.

Some questions that could be asked about the graph:

- How many hours are in a Wonka workday?
- In what hour was the highest percentage of Wonka Bar boxes made?
- Why do you think that the least amount of Wonka Bar boxes was made between Noon and 1 P.M.?
- Calculate the number of Wonka Bar boxes that were made in the morning hours.
- Calculate the number of Wonka Bar boxes that were made in the afternoon hours.
- Why do you think there were so few Wonka Bars made during the last hour of the day?
- Calculate the number of Wonka Bar boxes that were made during the hour when the most candy was boxed?
- Calculate the number of Wonka Bar boxes that were made during the hour when the least amount of candy was boxed?
- Calculate the difference of Wonka Bar boxes made between the hour with the greatest amount and the hour with the least amount.

- Calculate the number of hours in the day when more than 60 boxes of Wonka Bars made?
- Assuming every Wonka workday produced exactly the same results, what percentage of Wonka Bar boxes would be produced on Tuesday of a five-day work week?

## Evaluation and Follow-Up

### Assessment Tools and Methods

- Use the same graph or a similar graph and have each student answer teacher-made questions to interpret information from the graph and draw conclusions.
- Ask students to complete calculations by hand then create formulas in a spreadsheet to complete a self-check.
- Have students create a graph of their own and include questions for other students to answer. Students will exchange graphs and questions and solve.

### Technology Integration:

- Use of a graphing program such as *Graph Master*, and/or a computer spreadsheet program, such as *AppleWorks* or *Microsoft Excel*, to create additional graphs of various types (bar, pictograph, pie, line, etc.) for student exploration.
- Use of a computer spreadsheet program such as *AppleWorks* or *Microsoft Excel*, to create, to assist or check computations related to the graph.

#### Web Links:

<http://nces.ed.gov/nceskids/Graphing/> Kids Graphing Page

<http://pittsford.monroe.edu/jefferson/califieri/graphs/TabGraphMain.html> Tables & Graphs

<http://www.mathleague.com/help/data/data.htm> Using Data & Statistics

<http://www.mathforum.org> The Math Forum