

Family Reunion

Purpose

Students will make frequency tables for numerical data, grouping the data in different ways to investigate how different groupings describe the data. They will understand and find relative and cumulative frequency for a data set and use histograms of the data and of the relative frequency distribution to interpret the data.

Materials

For the teacher: chalkboard, chalk

For each group of 2-3 students: copy of Black Line Master (BLM) *Family Reunion*, paper, pencil

Activity

A. Introduction

1. Tell students that today they will be grouping and displaying numerical data.
2. Tell students that they will be displaying the data by creating frequency tables and histograms (bar graphs).

B. Group Activity

1. Divide the class into groups of two or three students.
2. Distribute a copy of BLM *Family Reunion* to each group.
3. Explain to students that they will use the data from the BLM to construct a frequency table and a histogram (bar graph).
4. Explain that the group will organize the data into intervals.
5. Assign an interval to each group, giving no more than two groups the same interval. (Assigned intervals should include 1, 2, 5, 10, 25, 50, and 100.)
6. Tell students to create a frequency table for the data based on the assigned interval.
7. Have students create a histogram (bar graph) from the frequency table.

C. Follow-Up

1. Regroup the class.
2. Ask one member from each group to sketch their histogram (bar graph) on the chalkboard.

(continued)



EXTENDING
THE

ACTIVITY

Have students work in groups to decide on another set of numerical data, either in the classroom or at home, they could collect and display.



INCORPORATING

TECHNOLOGY

Have students input data to a spreadsheet program that will automatically generate graphs. Tell students to generate different types of graphs and compare the data displays.

Standards Link
6.6.1

Activity (continued)

3. Have students compare the histograms and decide which one is a better choice for displaying this particular data set.
4. Ask students to explain the reasons for their choice.

Classroom Assessment

Basic Concepts and Processes

During the activity, discuss the following questions with your students to gauge their understanding of the Standard Indicator:



Do you believe your interval is appropriate for displaying this data?



Explain why or why not.

Name: _____

Family Reunion

The annual Smith family reunion took place this past June. Forty-five family members attended. They ranged in age from one month to 102 years old. The following is the list of attendees and the age of each (in years). Use this data to create a frequency table and histogram on your own paper. Use the interval assigned by your teacher.



Horace - 81	Wanda - 43	Betty - 45	Sandra -47	Kent - 47
Lucinda - 4	Lucas - 12	Camille - 0	Robert - 40	Mark - 2
Wallace - 67	Michael - 9	Jennifer - 8	Allison - 8	Wayne - 31
Jonathan -18	William - 52	Andrew - 42	Roseanne - 38	Sally - 9
Beatrice -52	Melissa - 31	Kathleen - 29	Karen - 6	Abraham - 72
Jasper - 102	Charles - 29	Donald - 24	Joshua - 21	Gayle - 41
Gertrude - 76	Harriet - 70	Frederick - 10	Linda - 63	Mary - 71
Luann - 28	Edward - 12	Paul - 2	Regina - 49	Leonard - 79
Marion -37	Horace Jr. - 59	Doris - 48	Henry -35	Florence -52

Family Reunion

Teacher Directions

Give one copy of the BLM *Family Reunion* to each group of students, and assign an interval to each group (1, 2, 5, 10, 25, 50, 100) (groups with smaller intervals will require additional time to complete the exercise).

Ask groups to create a frequency table and histogram for their interval. While students work on graphs, walk about the room and provide individual help as needed.

Answer Key

Groups with interval of 1 – Check that the frequency table includes an age column with all the numbers 1 – 102. No more than one tally mark should appear next to any one number. Histogram should be labeled with individual ages along the bottom. Bar height should be no greater than one.

Groups with interval of 2 – Check that the frequency table includes an age column beginning with the interval 0 – 1 and ending with 102 – 103. The following intervals should have one tally mark on frequency chart and a bar height of one on the histogram: 0 – 1, 4 – 5, 6 – 7, 10 – 11, 18 – 19, 20 – 21, 24 – 25, 34 – 35, 36 – 37, 38 – 39, 44 – 45, 58 – 59, 62 – 63, 66 – 67, 72 – 73, 76 – 77, 78 – 79, 80 – 81, 102 – 103. The following intervals should have two tally marks on the frequency chart and a bar height of two on the histogram: 2 – 3, 12 – 13, 30 – 31, 40 – 41, 42 – 43, 46 – 47, 48 – 49, 70 – 71. The following intervals should have three tally marks on the frequency chart and a bar height of three on the histogram: 28 – 29, 52 – 53. The interval 8 – 9 should have four tally marks on the frequency table and a bar height of four on the histogram.

Intervals of 5

Interval	Tally Marks/Height of Bar
0 – 4	4
5 – 9	5
10 – 14	3
15 – 19	1
20 – 24	2
25 – 29	3
30 – 34	2
35 – 39	3
40 – 44	4
45 – 49	5
50 – 54	3
55 – 59	1
60 – 64	1
65 – 69	1
70 – 74	3
75 – 79	2
80 – 84	1
85 – 89	0
90 – 94	0
95 – 99	0
100 – 104	1

Intervals of 10

Interval	Tally Marks/Height of Bar
0 – 9	9
10 – 19	4
20 – 29	5
30 – 39	5
40 – 49	9
50 – 59	4
60 – 69	2
70 – 79	5
80 – 89	1
90 – 99	0
100 – 109	1

Intervals of 25

Interval	Tally Marks/Height of Bar
0 – 24	15
25 – 49	17
50 – 74	9
75 – 99	3
100 – 124	1

Intervals of 50

Interval	Tally Marks/Height of Bar
0 – 49	32
50 – 99	12
100 – 149	1