## Math Packet Grade 6 Regular:

Week 6: May 4-8 \ Name _____ Period: ____

| | |
|---|---|
| Monday- Read over Study Guide: Statistics (enclosed), Go to Class Link, click on myhrw, p. 450, watch IMPORTANT Math on the Spot video on measures of central tendency. | Complete sheet 5.8 |
| Tuesday- Go to myhrw, view Math on the Spot videos on p. 463, 464 and 465. | Complete p. 191 |
| Wednesday- Read about dot plots/histograms, READ p. 470-472 and p. 478, Go math pages | Complete 16-4/16-4 Sheets |
| Thursday- Identify Statistical Questions- questions that have many different, or variable, answers. For example: how many siblings do students in this class have? is a *statistical* question. | Complete p. 469, Go Math page |
| Friday- Review and Assess | Ready to Go On? Complete p. 483, # 1-6 |

# Study Guide: *Statistics*

*Find Mean: add up the numbers in the data set and divide by the number of items.

*Find Median: list numbers in order from smallest to largest. The middle number is the median. If there are two middle        numbers: add them up and divide by two.

*Find Mode: the number/s that occur the most in a set of data.

Find Range: subtract the smallest number from the largest number in data set.

Outlier: a data value that is much greater or much less than the others in a data set.

When should I use the above* measures of central tendency?

Use mode if there are a LOT of the same number in your data set.

Use mean if the numbers are fairly close together.

Use median if there is an OUTLIER.

Name _____

# Range, Mean, Median, and Mode

Complete the table.

\* Put numbers in order (see below)

| | Data | Range | Mean | Median | Mode |
|---|---|---|---|---|---|
| 1. | 37, 36, 76, 84, 37 | ___ | ___ | ___ | ___ |
| 2. | 87, 98, 91, 75, 89 | ___ | ___ | ___ | ___ |
| 3. | 68, 85, 70, 57, 88, 88 | ___ | ___ | ___ | ___ |
| 4. | 96, 85, 52, 84, 85, 83, 40 | ___ | ___ | ___ | ___ |
| 5. | 90, 94, 65, 90, 84, 94, 85 | ___ | ___ | ___ | ___ |
| 6. | 82, 56, 46, 67, 89, 97, 56, 67 | ___ | ___ | ___ | ___ |

## Mixed Applications

7. The test scores for the last test in Mrs. Kwan's class were 84, 73, 91, 60, 76, 78, 74, 79, 76, and 89. What is the mean of the scores? What is the range of the scores?

mean- _____    range- _____

8. The student who earned a 60 on the test transferred to another class. If Mrs. Kwan drops the 60, what is the mean of the remaining scores? What is the range?

mean- _____    range- _____

\* Put numbers in order from above.

1) _____
2) _____
3) _____
4) _____
5) _____
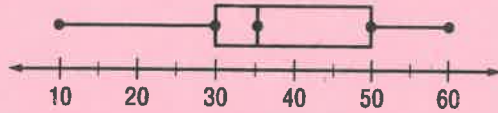6) _____

Reflections

NAME _____ DATE _____ PERIOD _____

## Reteach

### Box-and-Whisker Plots

Tues.

> A **box-and-whisker plot** is a diagram that is constructed using the median, quartiles, and extreme values. A box is drawn around the quartile values, and the whiskers extend from each quartile to the extreme values.
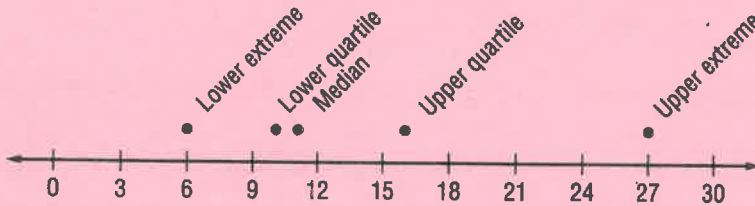>
> ```
>            ┌───┬──┐
>    •───────┤   │  ├──────•
>            └───┴──┘
>    ┼───┼───┼───┼───┼───┼───►
>   10  20  30  40  50  60
> ```

**Example** — The list below shows the number of model airplanes owned by the members of the aviation club. Draw a box-and-whisker plot of the data.
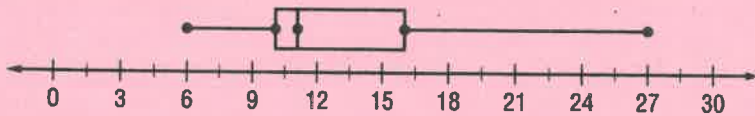
**6, 8, 10, 10, 10, 11, 12, 14, 16, 18, 27**

**Step 1** Order the numbers from least to greatest. Then draw a number line that covers the range of the data.

**Step 2** Find the median, the extremes, and the upper and lower quartiles. Mark these points above the number line.

```
         Lower extreme
              Lower quartile
                Median        Upper quartile              Upper extreme
              •    • •            •                           •
    ┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───►
    0   3   6   9  12  15  18  21  24  27  30
```

**Step 3** Draw the box so that it includes the quartile values. Draw a vertical line through the median value. Extend the whiskers from each quartile to the extreme data points.

**Numbers of Model Airplanes Owned**

```
              ┌──┬──────┐
       •──────┤  │      ├───────────────•
              └──┴──────┘
    ┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───┼───►
    0   3   6   9  12  15  18  21  24  27  30
```

**Exercises**   ☆ List numbers in order first. Circle the median. Find LQ and UQ.

Draw a box-and-whisker plot for each set of data.

**1.** {4, 7, 5, 3, 12, 6, 5}
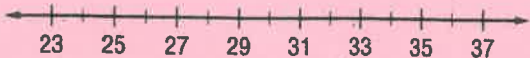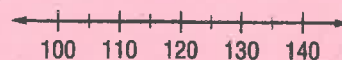
```
    ┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼►
    1 2 3 4 5 6 7 8 9 10 11 12 13 14
```

**2.** {13, 8, 17, 10, 6, 11, 18}

```
    ┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼┼►
    6  7  8  9 10 11 12 13 14 15 16 17 18
```

**3.** {23, 36, 28, 34, 30, 29, 30, 28, 34}

```
    ┼───┼───┼───┼───┼───┼───┼───┼───►
   23  25  27  29  31  33  35  37
```

**4.** {108, 130, 110, 104, 106, 120, 140, 122, 114, 104}

```
    ┼───┼───┼───┼───┼───┼───►
  100  110  120  130  140
```

**LESSON 16-4**

# Dot Plots and Data Distribution *Wed.*
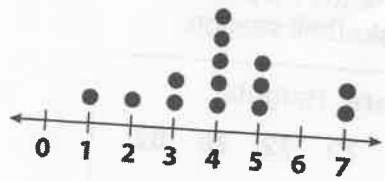## *Success for English Learners*

A **dot plot** provides a visual way to display data.

## Problem 1

The data below is shown in the dot plot at the right.

Summer Hours I Spent
Horseback Riding

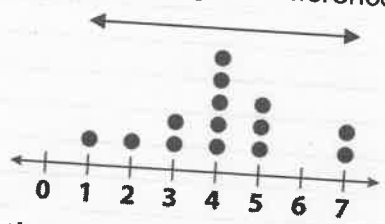1, 7, 4, 3, 5, 4, 2,

7, 4, 4, 3, 5, 5, 4



Summer Hours I Spent
Horseback Riding

## Problem 2

You can describe the spread, the center, and the shape of a dot plot.

**Spread:** Range or difference between least and greatest values



The **shape** of this dot plot is **symmetrical**, which means there are about the same number of dots on one side of the center of the range as on the other side of center.

**Measures of center:**

**Mean:** $\dfrac{\text{Sum of data values}}{\text{Number of data values}}$

**Median:** Middle value

1. How would you describe the spread of the dot plot?

   _____

2. Find the mean of the data. _____

3. Find the median of the data. _____

4. What does it mean if the shape of a dot plot is **not** symmetrical?

   _____

   _____

Name _____  Date __5/6__  Class _____
                                      _Wed._

# Histograms
### *Practice and Problem Solving: A/B*

**Use the data in the chart and the description
below to complete Exercises 1–2.**

The data set lists the heights of the Houston Rockets players during the
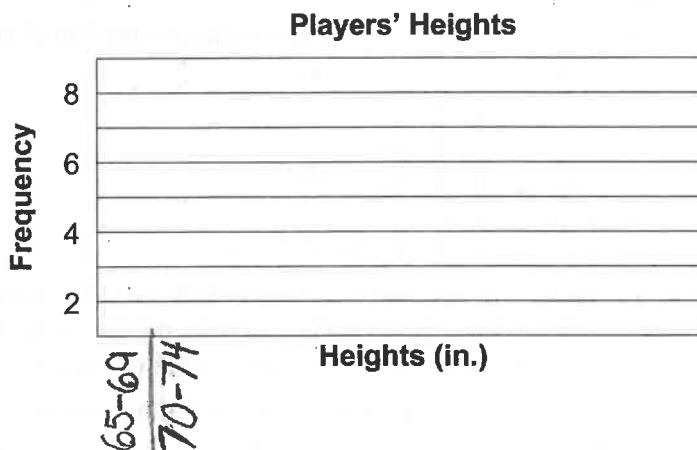2011–2012 basketball season.

| Players' Heights |
|---|
| 81  80  79  72  72  78  82 |
| 80  80  76  87  65  79  82 |
| 80  79  81  71  77 |

1. Complete the frequency table.
   Use an interval of ⑤.

*List intervals by 5'5* *by*

| Players' Heights | |
|---|---|
| **Heights (in.)** | **Frequency** |
| 65–69 | |
| 70-74 | |
| | |
| | \ |
| | |

2. Complete the histogram.

**Players' Heights**



Frequency  8
           6
           4
           2

65-69  70-74   Heights (in.)

**Solve. Use the histogram or the set of data. Tell which you used.**

3. Find the range, the median, and the mean of the players' heights.

   a. range            b. median            c. mode

   _____   _____   _____

4. Based on this data, what do you think is the average height of players
   in the National Basketball Association? Explain how you decided on
   your answer including which display of data you used.

   _____

   _____

   _____

## LESSON
# 16.4
# Dot Plots and Data Distribution

FL  **6.SP.2.4**

Display numerical data in
plots on a number line,
including dot plots....
*Also 6.SP.1.1, 6.SP.1.2,
6.SP.2.5c, 6.SP.2.5d*

**?** **ESSENTIAL QUESTION**

How can you summarize and display numeric data?

**EXPLORE ACTIVITY** Real World   FL  **6.SP.1.1**

## Variable Data and Statistical Questions

The question "How much does a typical cat weigh?" is an example of a statistical question. A **statistical question** is a question that has many different, or variable, answers.

*(statistical)*

**A** Decide whether each of the situations below could yield variable data.

**1.** Your sister wants to know the typical weight for an adult cat.

_____ .

✻ typical means "normal"

**2.** You want to know how tall your friend is. _____

**3.** You want to know how far your house is from school. _____

**4.** A car owner wants to know how much money people usually pay

for a new tire. _____

**5.** How many students were in line for lunch at the cafeteria today

at 12:30? _____

**B** For which of the situations in part **A** can you write a statistical question? Write questions for these situations.

_____

_____

## Reflect

**1.** Choose one of the questions you wrote in part **B**. How might you find answers to this question? What units would you use for the answers?

_____

_____

_____

# Ready to Go On?
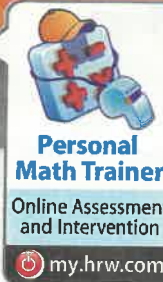
reg.

## 16.1 Measures of Center

**1.** Find the mean and median of these data: 2, 5, 9, 11, 17, 19. _____

## 16.2 Mean Absolute Deviation

2. Find the range of the above data from problem #1. _____ .

## 16.3 Box Plots

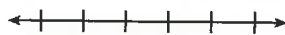**3.** Make a box plot for the data set.

| 36 42 44 52 61 70 78 |



## 16.4 Dot Plots and Data Distribution

**A baseball team scored the following number of runs over a 10-game period:**
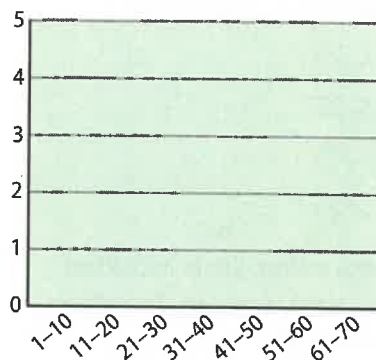**6, 6, 8, 5, 4, 6, 4, 3, 8, 4**

**4.** Make a dot plot for the data.

**5.** Find the mean, median, and range.

_____

_____



## 16.5 Histograms

**6.** Make a histogram for the data set.

| 23 | 45 | 62 | 19 |
| 48 | 10 | 39 | 54 |
| 39 | 16 | 48 | 12 |
| 25 | 32 | 18 | 4 |



## ? ESSENTIAL QUESTION

**7.** How can you represent and summarize data in a dot plot?

_____

_____