

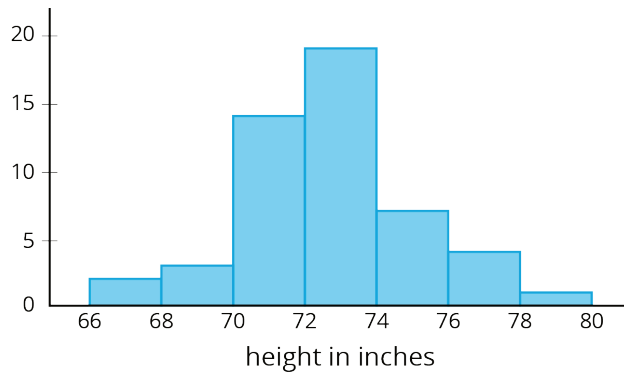
# Unit 8 Lesson 11: Estimating Population Measures of Center

## 1 Describing the Center (Warm up)

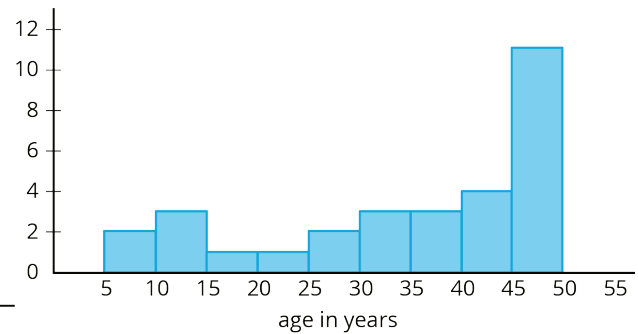
### Student Task Statement

Would you use the median or mean to describe the center of each data set? Explain your reasoning.

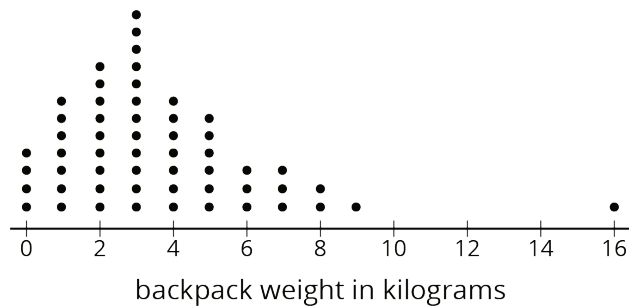
Heights of 50 basketball players



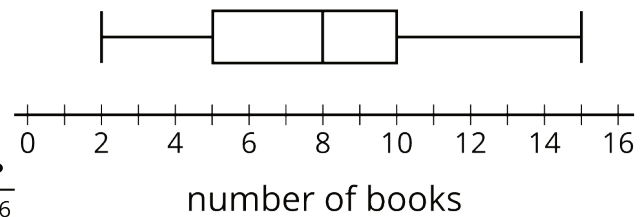
Ages of 30 people at a family dinner party



Backpack weights of sixth-grade students



How many books students read over summer break



## 2 Three Different TV Shows

### Student Task Statement

Here are the ages (in years) of a random sample of 10 viewers for 3 different television shows. The shows are titled, "Science Experiments YOU Can Do," "Learning to Read," and "Trivia the Game Show."

sample 1	6	6	5	4	8	5	7	8	6	6
sample 2	15	14	12	13	12	10	12	11	10	8
sample 3	43	60	50	36	58	50	73	59	69	51

1. Calculate the mean for *one* of the samples. Make sure each person in your group works with a different sample. Record the answers for all three samples.
2. Which show do you think each sample represents? Explain your reasoning

### 3 Who's Watching What?

#### Student Task Statement

Here are three more samples of viewer ages collected for these same 3 television shows.

sample 4	57	71	5	54	52	13	59	65	10	71
sample 5	15	5	4	5	4	3	25	2	8	3
sample 6	6	11	9	56	1	3	11	10	11	2

1. Calculate the mean for *one* of these samples. Record all three answers.
2. Which show do you think each of these samples represents? Explain your reasoning.

- For each show, estimate the mean age for all the show's viewers.
- Calculate the mean absolute deviation for *one* of the shows' samples. Make sure each person in your group works with a different sample. Record all three answers.

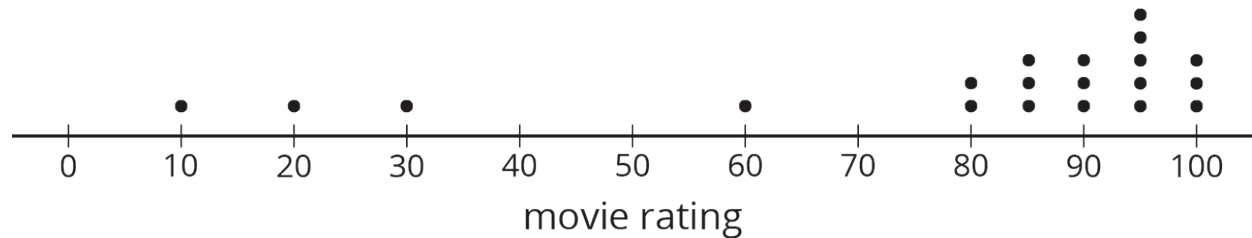
	Learning to Read	Science Experiments YOU Can Do	Trivia the Game Show
Which sample?			
MAD			

- What do the different values for the MAD tell you about each group?
- An advertiser has a commercial that appeals to 15- to 16-year-olds. Based on these samples, are any of these shows a good fit for this commercial? Explain or show your reasoning.

## 4 Movie Reviews

### Student Task Statement

A movie rating website has many people rate a new movie on a scale of 0 to 100. Here is a dot plot showing a random sample of 20 of these reviews.



1. Would the mean or median be a better measure for the center of this data? Explain your reasoning.
2. Use the sample to estimate the measure of center that you chose for *all* the reviews.
3. For this sample, the mean absolute deviation is 19.6, and the interquartile range is 15. Which of these values is associated with the measure of center that you chose?
4. Movies must have an average rating of 75 or more from all the reviews on the website to be considered for an award. Do you think this movie will be considered for the award? Use the measure of center and measure of variability that you chose to justify your answer.