Overruled!
Answer Key

Watch the animation, *Overruled!*, and complete these activities. The animation and an instructor guide are available on iTunes U (search "Math Snacks") and at **mathsnacks.org**

The official for the kingdom who is in charge of measuring made the following table comparing the number of teacher feet to student feet.

Student	Teacher
3	1
5	2
7	5

1 Teacher's Foot   2 Student's Feet

1A. Is the official doing a good job? Why or why not?

Answer: No he is not, because… [answers will vary but should relate to the fact that the given proportion 1:2 does not match the proportions given in the left table.]
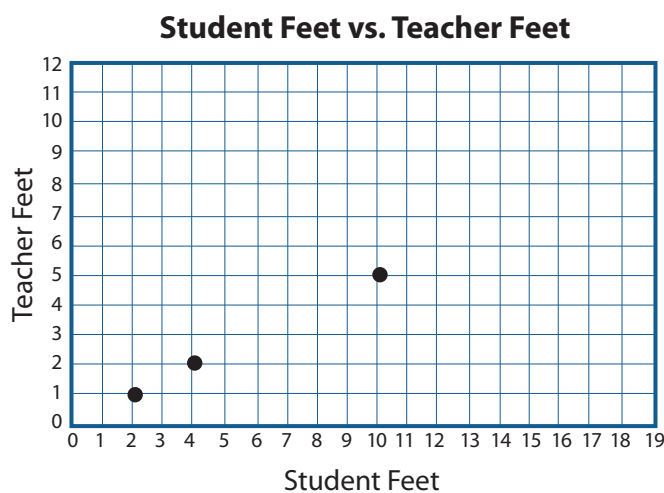
B. If the official was doing his job correctly, what would the table look like?

Student	Teacher
2	1
4	2
10	5

C. Graph your table of foot measurements below.


Student Feet vs. Teacher Feet

D. How can you tell if someone is doing a good job of measuring feet?

Note: Converting 4 queen's feet to duke's feet may be difficult for younger students. There are multiple ways to do this. Students can set up a ratio problem and solve it, students can draw a picture, or students may come up with a new way to make this calculation. If they are confused, it may be valuable to do this in small groups or as a whole class.

Answers will vary, but should include some discussion about proportional relationships.

The queen decided that she wanted a new royal purple banner to fly over the new bridge.

2. The banner will require 6 queen's feet of purple silk fabric. By looking at the chart, can you tell how many duke's feet of silk will be needed for the banner?
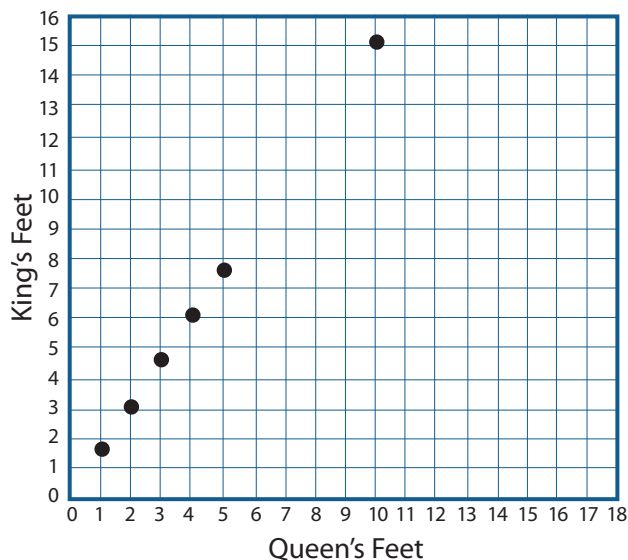
3 Queen's Feet

2 Duke's Feet

Purple Silk
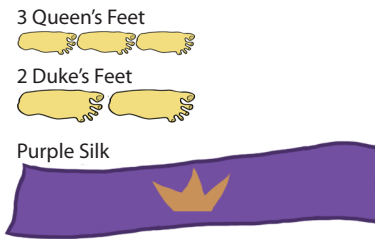
| Queen's Feet	Duke's Feet
3	2
4	*8/3, 2 2/3, 2.66*
6	*4*

3. In the fictional kingdoms of Kingopolis and Queentopia, engineers had to convert king's feet to queen's feet, and vice versa, to build a bridge between the two countries. They had to know that 2 queen's feet = 3 king's feet. **Fill in the graphs and charts so that people in the two kingdoms can easily convert one form of measurement to the other.**

Note: Converting from king's feet to queen's feet may be difficult for younger students. There are multiple ways to do this. Students can set up a ratio problem and solve it, students can draw a picture, students can use addition by adding 2/3 repeatedly, or students may come up with a new way to make this calculation. If they are confused, it may be valuable to do this in small groups or as a whole class.

Queentopia

King's Feet vs Queen's Feet

Kingopolis

Feet vs _____ Feet
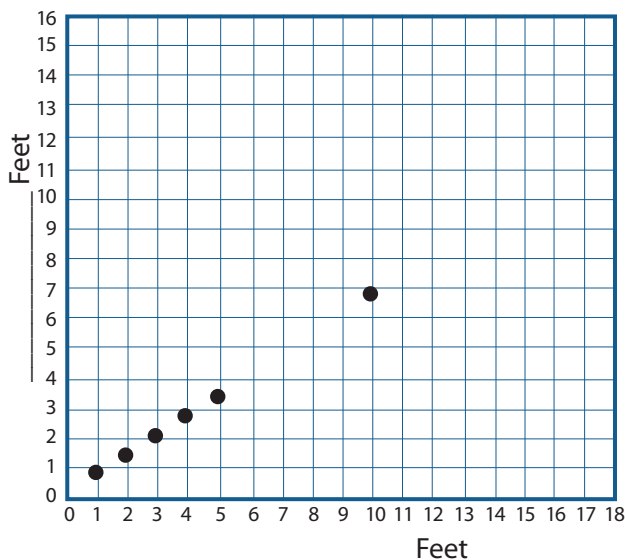
Queen's Feet	A. King's Feet
1	*1.5*
2	*3*
3	*4.5*
4	*6*
5	*7.5*
10	*15*

King's Feet	B. Queen's Feet
1	*2/3*
2	*4/3*
3	*2*
4	*8/3*
5	*10/3*
10	*20/3*