

## LESSON PLAN

**Subject:** Grade 6 Math

**Lesson:** Skein Winder: A Thread through Industry

**Standard Addressed:** Use ratio reasoning to solve real-world and mathematical problems with percents. (NC.6.RP.4)

**Objectives:**

- Students will be able to understand and find a percent of a quantity as a ratio per 100.
- Students will be able to use equivalent ratios to determine a part of any given quantity.
- Students will be able to find the whole, given a part and the percent.

**Materials Needed:**

- Device to show “A Thread through Industry” video
- “Skein Winder Ratios” Grade 6 Math Activity

**Outline:**

- Prior to this lesson, students should be able to describe a ratio as a multiplicative relationship between two quantities.
- Show the video.
- Discuss the activity prompt.
- Students finish the activity independently or with a partner.

**Take It Further:** Look at the tag of your favorite piece of clothing to determine what percent of each material it is made of. Then search the internet to see how many total yards of thread are needed to make this type of garment. Finally, calculate how many yards of thread, of each material, went into the fabric of your piece of clothing.

**Cross-Curriculum Connection:** Look at the tag on your favorite garment of clothing and identify the materials it is made of. Are these materials derived from plants or animals, or are they man-made? Where do the materials come from? Where was this piece of clothing made and who are the people that made it? What is the factory they work in like?

Write a brief summary answering these questions.



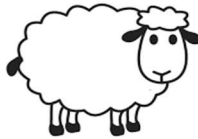
## Skein Winder Ratios

Grade 6 Math

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

It will take 110 yards of thread to make enough material for one shirt that is a blend of linen, wool, and cotton.

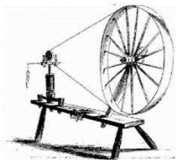
1. If the shirt is made up of 53% linen, and 19% wool, what percent of cotton is needed to complete the shirt?
2. How many yards of each type of thread are needed?



linen	wool	cotton

When the skein winder “pops” at 100 turns the weaver will have wound a full skein of thread which is 675 feet.

3. If the weaver only needs 240 feet of thread, what percent of 1 skein would that be?
4. How many times will the weaver need to turn the wheel to wrap that many feet of thread?



## Skein Winder Ratios

Grade 6 Math

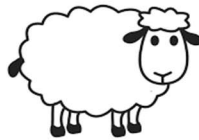
ANSWER KEY

It will take 110 yards of thread to make enough material for one shirt that is a blend of linen, wool, and cotton.

1. If the shirt is made up of 53% linen, and 19% wool, what percent of cotton is needed to complete the shirt?

28%

2. How many yards of each type of thread are needed?



linen	wool	cotton
58.3	20.9	30.8

When the skein winder “pops” at 100 turns, the weaver will have wound a full skein of thread which is 675 feet.

3. If the weaver only needs 216 feet of thread, what percent of 1 skein would that be?

32%

4. How many times will the weaver need to turn the wheel to wrap that many feet of thread? 32

