

Unit: Lowell and the Industrial Revolution

Author: CJ Shields: Greencastle Middle School, Greencastle, IN

Lesson Topic: Mill technology

Grade Level: Middle School

State Standards:

Class Time: 50-70 minutes

Objectives:

- Students will understand the concept of basic mechanisms.
- Students will understand the basic calculations associated with various mechanisms.
- Students will be able to visually identify distinct mechanisms.

Prerequisite knowledge/Background Information:

Materials:

- Pictures of industrial era gears taken during the *NEH Inventing America Workshop* at the Lowell National Historical Park
- Teacher created worksheet

Procedure:

1. Students will be presented with basic gears and gear calculations
 - a. This will occur the day before this activity is utilized
2. Students will use pictures of early industrial gears and pulleys to complete calculations for given examples
3. If prompted students will label the transfer of energy in a given picture

Assessment

- Verbal questions about the gear and pulley ratios
- Verbal questions about gear and pulley calculations
- Grading of the attached worksheet, each question is worth 1 point