Construction Worker - Lesson Plan

Summary

In this episode of Sketch and Coffee Live at 5:30am Texas time, Blade sketches a construction worker figurine from the Safari Ltd. People of Industry set, complete with hard hat, insulated gloves, fire-retardant clothing, and steel-toed boots. The discussion traces the evolution of construction safety from ancient projects like Göbekli Tepe and the Roman Colosseum, through medieval guild protections during the building of Notre Dame Cathedral (with a brief, humorous detour into Disney's Hunchback and its high-note mystery), to the Empire State Building in the 1930s. Blade contrasts the five deaths on that single project with the four construction-related fatalities across all DOB-regulated building projects in New York City so far in 2025, highlighting how modern standards, PPE, and training have drastically reduced risks while noting the ongoing challenges posed by compliance pressures and shortcut temptations.
Watch the episode here: https://www.youtube.com/live/KI5qrkeKJU4?si=4dCG2G-6c456mrhE

Lesson Plan

Objective:

Students will explore the history of construction practices and safety standards, comparing ancient, medieval, and modern building projects to understand how technology, organization, and regulations have reduced risk to workers over time.

Standards:

- NGSS 3-5-ETS1-1: Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost.
- CCSS.ELA-LITERACY.RI.5.3: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical or technical text.

Materials:

- Internet access for research
- Images or models of Göbekli Tepe, the Colosseum, Notre Dame, and the Empire State Building
- Safety gear examples (hard hat, safety glasses, gloves, steel-toed boots)
- Student worksheet (included below)

Procedure:

1. Introduce the construction worker figure and identify its PPE components.
2. Discuss the earliest known large-scale construction (Göbekli Tepe) and lack of safety measures.
3. Compare safety practices in ancient Rome (Colosseum) and medieval Europe (Notre Dame and guild protections).
4. Examine the Empire State Building's construction, noting safety advances and remaining hazards.
5. Present current NYC construction fatality statistics and contrast them with historical examples.
6. Discuss the balance between safety and efficiency in modern projects.

Assessment:

- Student participation in discussion
- Completion of worksheet with accurate comparisons and reflections

Extension:

- Research another famous building project (past or present) and report on its safety record.

Rubric

Criteria	4 - Excellent	3 – Good	2 – Satisfactory	1 – Needs Improvement
Participation	Actively participates, adds insight	Participates when prompted	Minimal participation	No participation
Accuracy	All facts correct	1–2 minor errors	Several errors	Many errors
Completion	All tasks complete	Most tasks complete	Some tasks complete	Few or no tasks complete
Reflection	Deep, thoughtful responses	Thoughtful but brief	Limited detail	No reflection

Nine Fun Facts About Construction & Safety History

1. *Göbekli Tepe (~9600 BCE) Massive stone pillars carved before agriculture existed, with no metal tools, wheels, or animals. Göbekli Tepe is an archaeological site in modern-day Turkey and is the oldest known large-scale construction that was not a home. Built over 11,000 years ago, it shows that humans were organizing labor for monumental projects long before cities or farms. It is important because it represents the very beginnings of complex construction, with no evidence of safety measures for workers. Source: https://www.smithsonianmag.com/history/gobekli-tepe-the-worlds-first-temple-83613665/

2. The Colosseum (~80 CE) Built with stone, concrete, and animal-powered cranes by slaves and laborers. The Colosseum is a giant amphitheater in Rome, Italy, built nearly 2,000 years ago to host public games and spectacles. Workers used concrete and cranes powered by animals, with no helmets, harnesses, or guardrails. It is important because it shows how large-scale public works were completed in ancient times despite enormous safety risks. Source: https://www.history.com/topics/ancient-rome/colosseum

3. Notre Dame Cathedral (~1163–1345) Gothic stonework with a timber roof known as "the forest." Notre Dame is a Gothic cathedral in Paris, France, that took almost 200 years to complete. It is famous for its tall stone towers, stained glass, and massive oak roof framework. It is important because it highlights medieval craftsmanship, where skill and teamwork substituted for formal safety codes. Source: https://www.notredamedeparis.fr/en/la-cathedral/architecture/

4. Empire State Building (1930–31) Constructed in just 410 days with a steel frame and wood flooring. The Empire State Building is a skyscraper in New York City built during the Great Depression. It was a marvel of speed and engineering for its time, though five workers still died during construction. It is important because it shows the transition to modern safety gear and methods, but also the limits of those protections in the early 20th century. Source: https://www.esbnyc.com/about

5. Safety in Prehistory and Ancient Times Sites like Göbekli Tepe and the Colosseum had no real safety rules- just "don't let stones crush your friends." In early construction projects, safety was entirely the responsibility of the workers themselves. There were no formal rules, inspections, or protective equipment. This is important because it explains why so many injuries and deaths occurred, and why worker safety only improved much later in history. Source: https://www.sciencedirect.com/science/article/pii/S2095263518300437

6. Guilds and Skilled Protection (Medieval to Pre-Industrial) Mason and craft guilds trained apprentices, preserved knowledge, and provided community support. Guilds were organizations of skilled laborers in trades such as stone masonry and carpentry. They maintained quality standards, trained newcomers, and sometimes provided help to injured members or their families. This is important because it represents an early form of worker protection before formal safety laws existed. Source: https://kidskonnect.com/social-studies/medieval-guilds/

7. Modern PPE Origins Hard hats evolved from WWI and mining helmets, steel-toed boots came from 1930s heavy industry, and insulated gloves stem from early electrical and power utility work. PPE, or personal protective equipment, is essential for keeping workers safe on modern construction sites. Items like hard hats, steel-toed boots, and insulated gloves each have roots in specific high-risk industries. This is important because these innovations reduced injuries and deaths across many types of work. Source: https://www.hpinc.com/media/product-literature/Evolution-of-PPE_082124-5.pdf

8. Safety Policies Can Slow Projects Today, skyscrapers worldwide often take 2–5 years due to mandatory safety inspections, compliance checks, and protective systems. Modern construction projects are governed by strict safety regulations and frequent inspections. While these measures reduce accidents, they can extend project timelines and create tension between safety and speed. This is important because it shows the ongoing balance between protecting workers and meeting deadlines. Source: https://www.construction-physics.com/p/which-city-builds-skyscrapers-the

9. The Success of Safety Standards U.S. construction worker deaths dropped from about 38 per day in 1970 to around 15 today. The introduction of OSHA and modern safety laws dramatically reduced injuries and fatalities in the construction industry. This progress came from better equipment, training, and enforcement. It is important because it proves safety regulations save lives and protect workers' long-term health. Source: https://www.osha.gov/data/commonstats

***Pronunciation of Göbekli Tepe: GURB-eck-lee TEP-eh**
Audio reference: https://forvo.com/word/gobekli_tepe/

Worksheet

Name: _____ Date: _____

Review:
What is PPE and why is it important?

Discussion:
Compare the working conditions of the Colosseum and the Empire State Building. How did safety change?

Data Analysis:
In 1970, about 38 U.S. construction workers died every day. Today, about 15 die daily. If each year has 365 days, how many fewer deaths per year does that represent? Show your math.

Reflection:
Which safety measure do you think has saved the most lives in construction, and why?