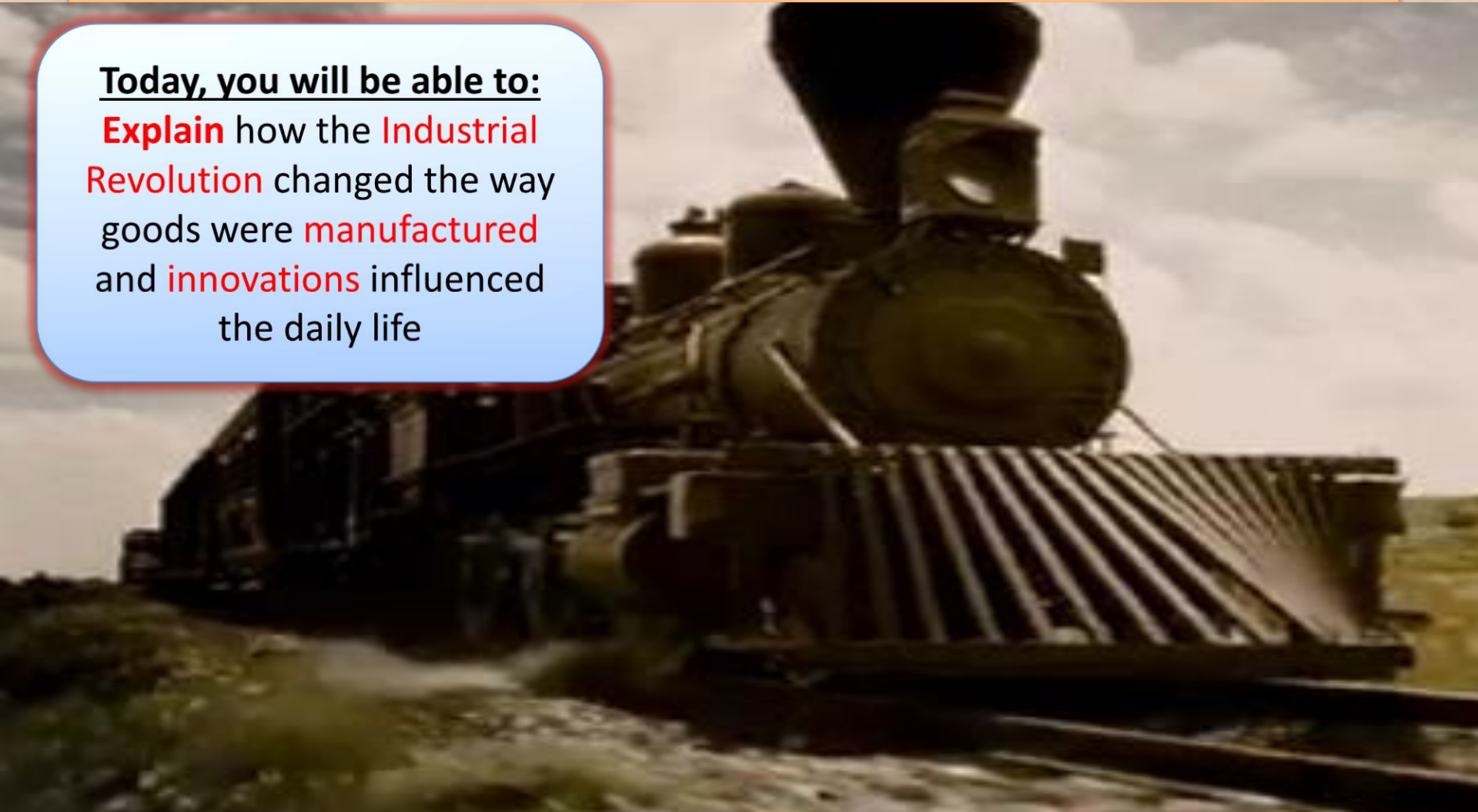


Innovations (Inventions)


Today, you will be able to:

Explain how the **Industrial Revolution** changed the way goods were **manufactured** and **innovations** influenced the daily life





At each Station:

- 1. Write vocabulary words on page 63-64**
 - 2. Read the Invention summaries**
 - 3. Write who is the Inventor, How does it function, and the Impact of industrialization**
- 

Industrial Revolution

Vocabulary

Industrial Revolution Vocabulary Page



I.R. Timeline Voc.

Industrialization

Mass Production

Cottage industries

Urbanization

Immigration

Innovations

I.R. Inventions Voc.

Transportation

Communication

Locomotive

Transcontinental

Canal

Efficient

Harvest

Transportation

Pages 63-64

A way of traveling from one place to another



Communication

Pages 63-64

Exchanging information or news



Locomotive

Pages 63-64

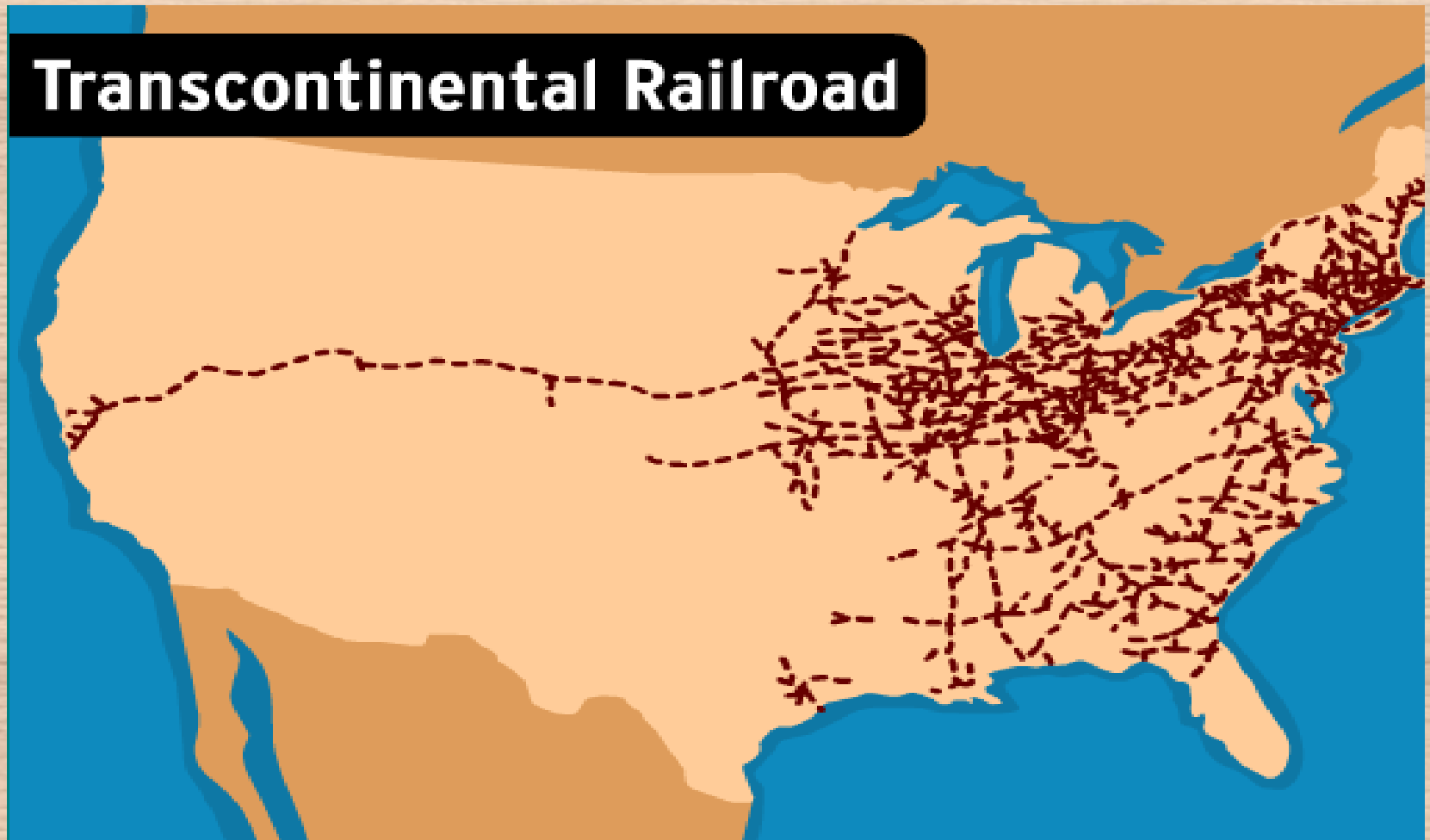
Engine that provides motive power for a train



Transcontinental

Pages 63-64

- Passing across a continent



Canal

Pages 63-64

- A man-made water route

Along the Erie Canal, Buffalo, N. Y.



Efficient

Pages 63-64

A way of doing something that makes the best use of time and energy

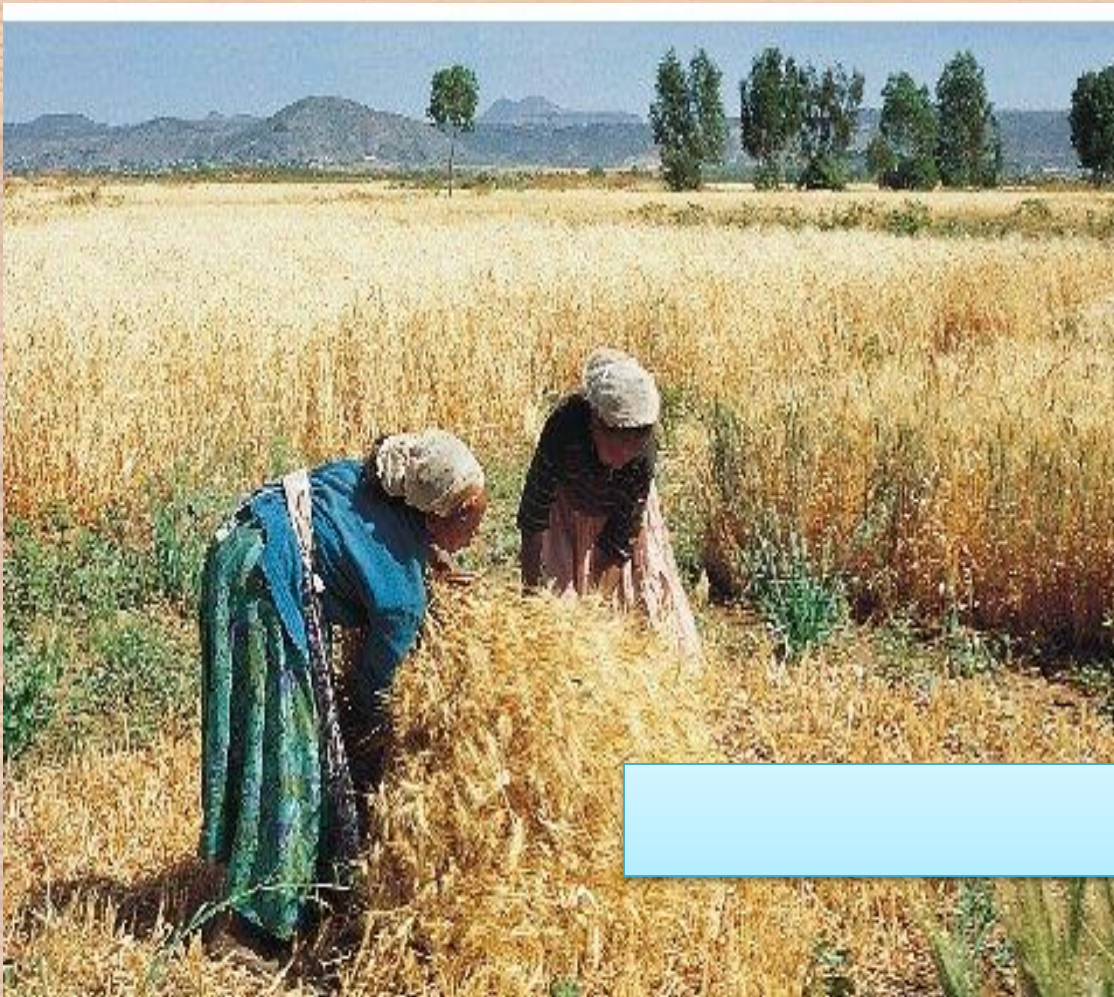






In New York it may be more efficient to ride a bike to work

Harvest

Pages 63-64

To gather crops







<h3>Railroad</h3> 	<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication
<h3>Erie Canal</h3> 	<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication
<h3>Steamboat</h3> 	<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication
<h3>National Road</h3> 	<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication

Cut the "dotted lines"

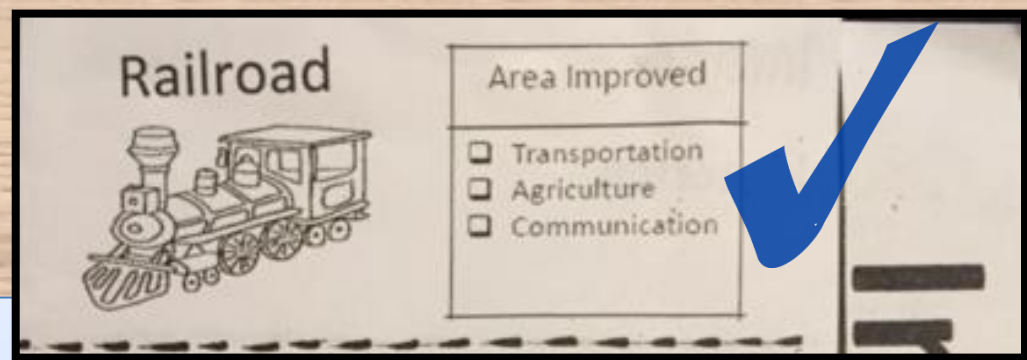


Inventions

<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication 	<h3>Telegraph</h3> 
<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication 	<h3>Cotton Gin</h3> 
<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication 	<h3>Steel Plow</h3> 
<p>Area Improved</p> <ul style="list-style-type: none"> <input type="checkbox"/> Transportation <input type="checkbox"/> Agriculture <input type="checkbox"/> Communication 	<h3>Mechanical Reaper</h3> 



Inventions

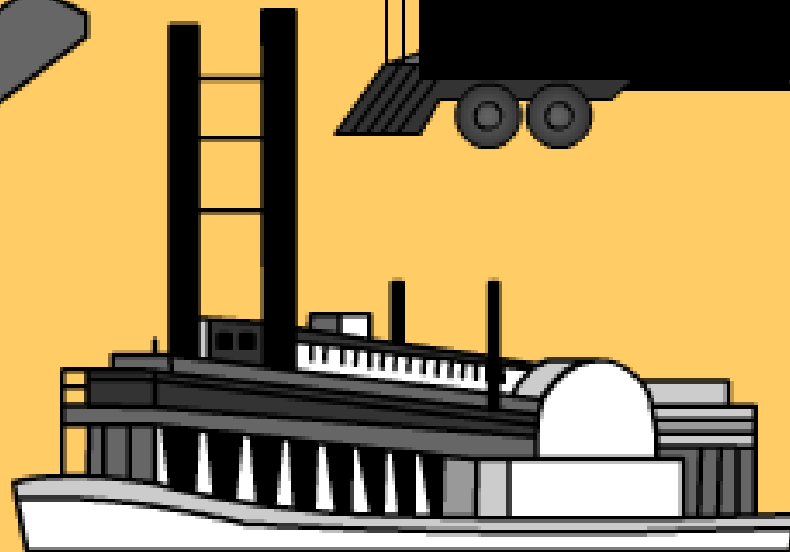
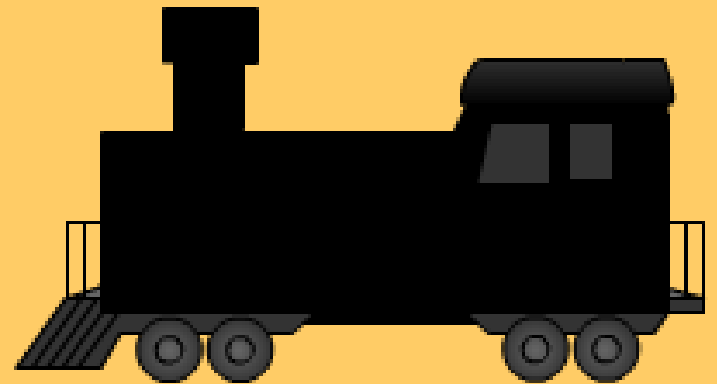
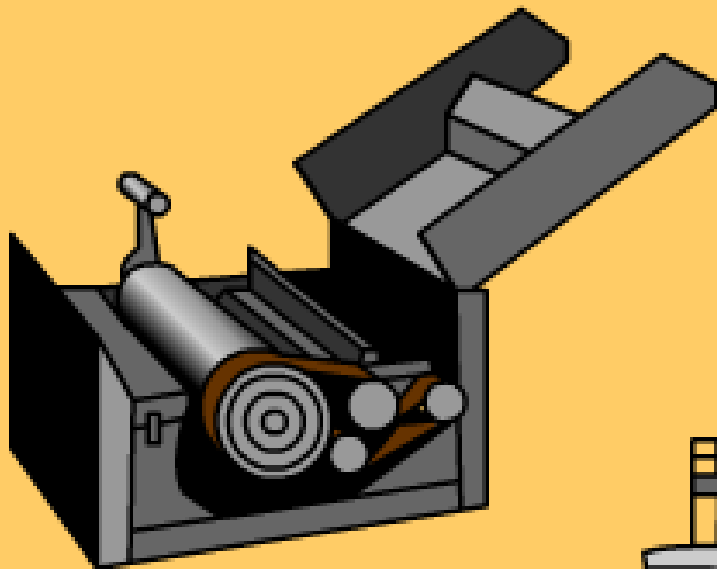
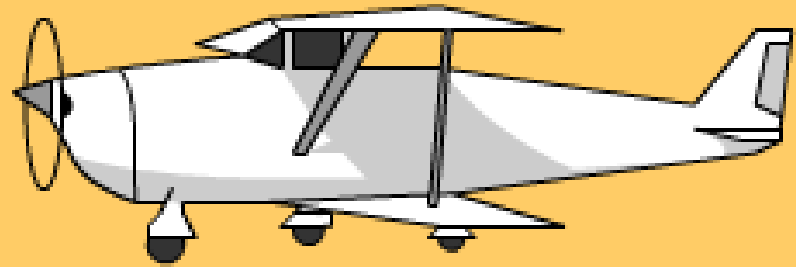
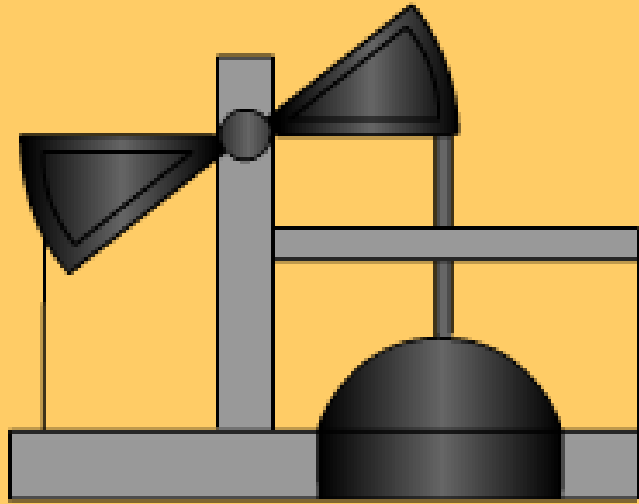


At each Station:

- 1. Watch the video**
- 2. Check the box of Area Improved**
- 3. Read the Invention summaries**
- 4. Write who is the Inventor, How does it function, and the Impact of industrialization**

Inventor: Function:	Impact:	invent
------------------------	---------	--------

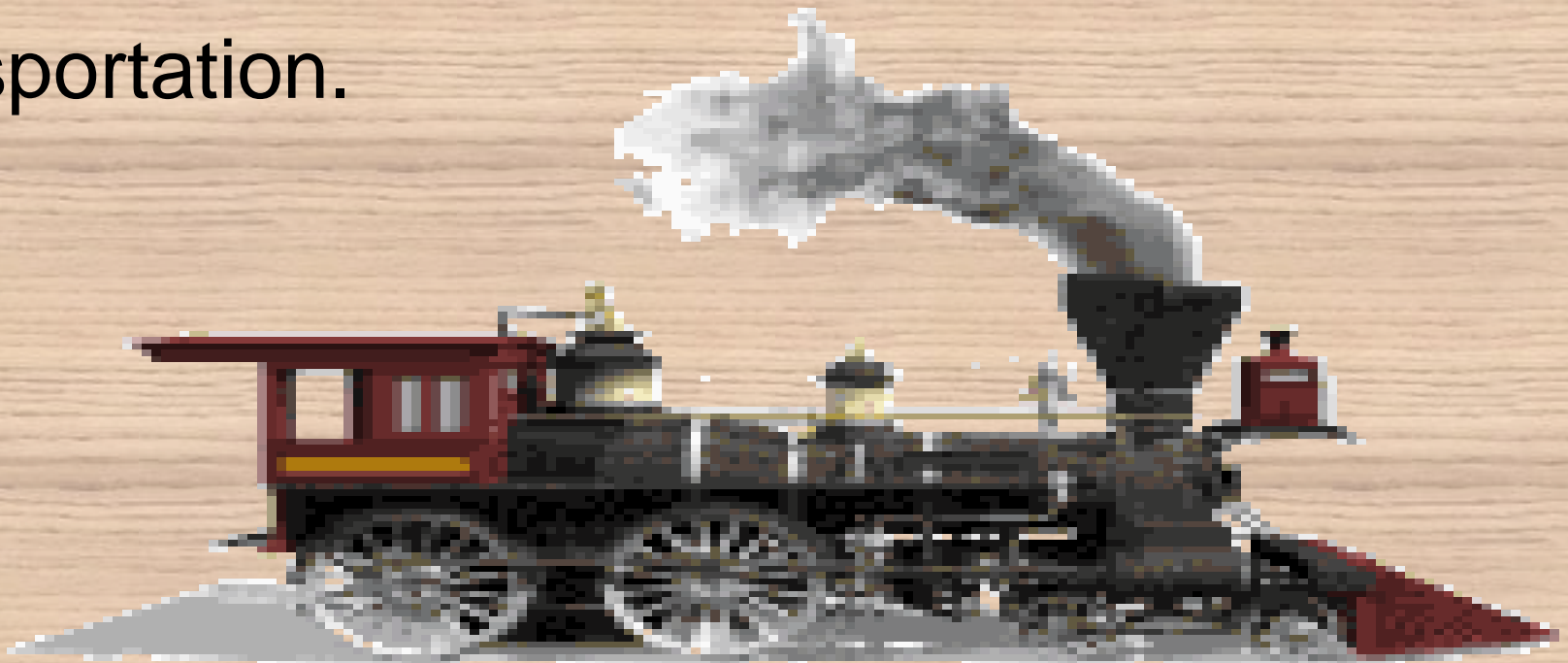
Industrial Revolution Inventions



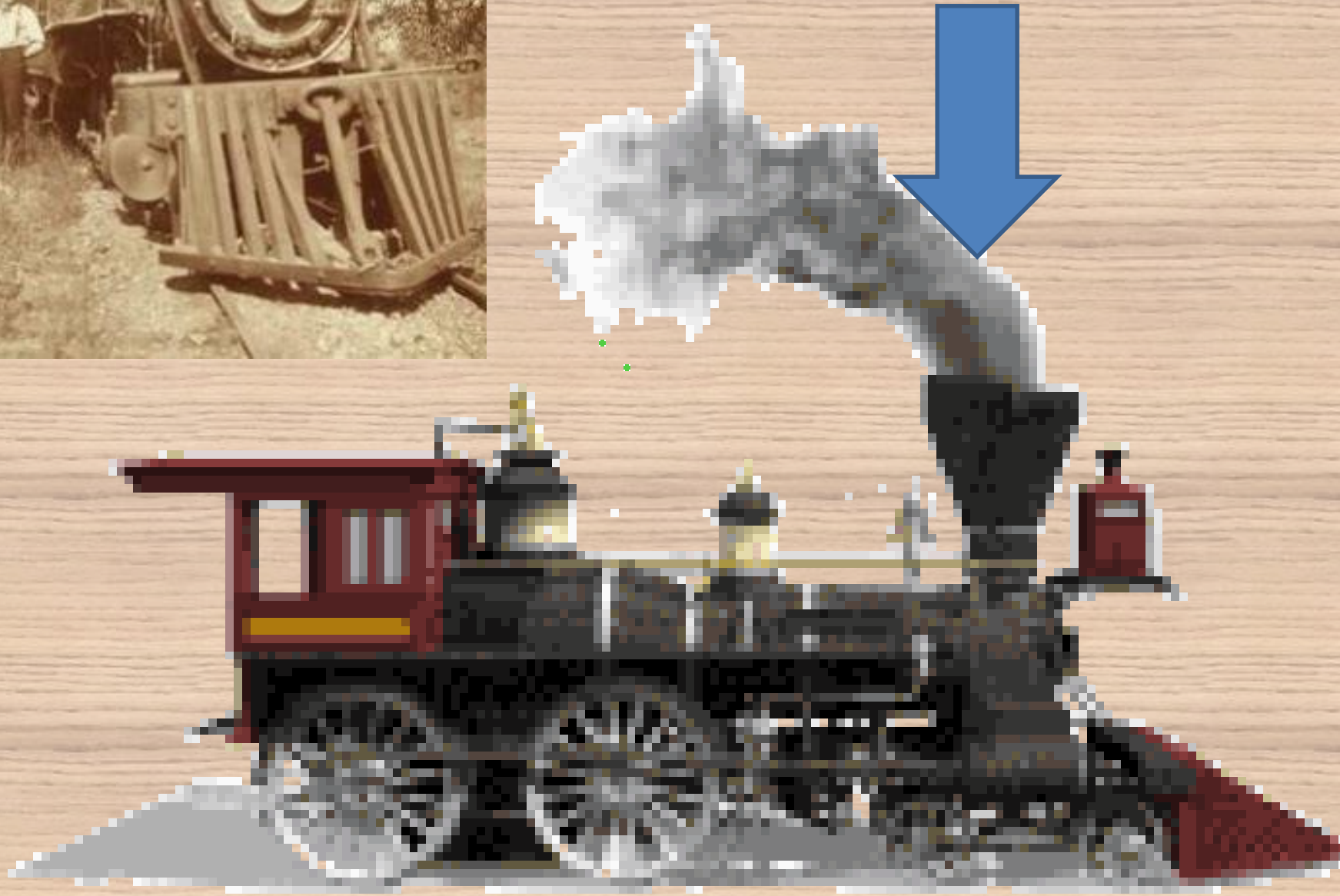
Railroad

- Who is the inventor of railroads?
- How does the railroad function?

The railroad was first developed in Great Britain by the man named George Stephenson. He applied the steam engine to a wheeled wagon moving along a track, creating the first railroad **locomotive**. Railroads revolutionized land transportation.



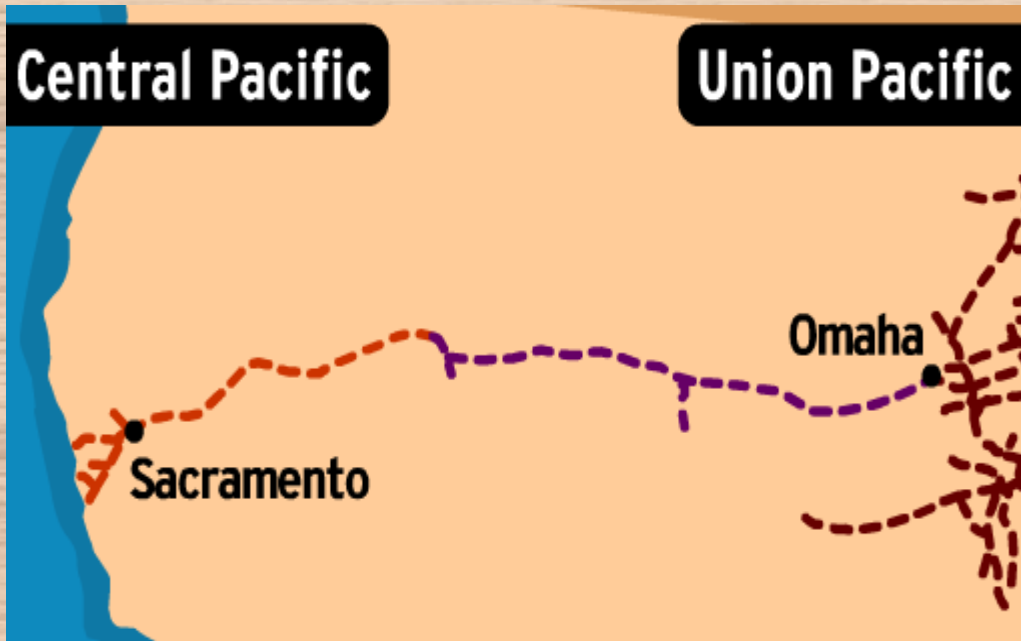
Railroads function by the
steam engine



Railroad

- What is the impact of railroads?

Companies from the West and East coast build the tracks to connect across the nation. This is called the **Transcontinental Railroad**. This fasten the time to travel from New York to San Francisco in 6 days, compared to 6 months by wagon!!



Rocky Mt Video

sky Mountain Express DKA 0117



Erie Canal

- Who is the inventor of the Erie Canal?
- How does the Erie Canal function?

The railroad expanded land transportation just as the Erie **Canal** had expanded water transport. New York governor, Dewitt Clinton, was the driving force behind the project. Clinton wanted a safe and **efficient** way to transport goods to the Great Lake region.





Great Lakes

New York City



Atlantic
Ocean

Gulf of Mexico

Erie Canal

- What is the impact of the Erie Canal?

The Erie canal connected farmland around the Great Lakes to cities and markets in the east. The man-made river made the New York City the major port in the U.S. (and still today!)

New York City port



Building the Erie Canal.

A canal is a man-made water route



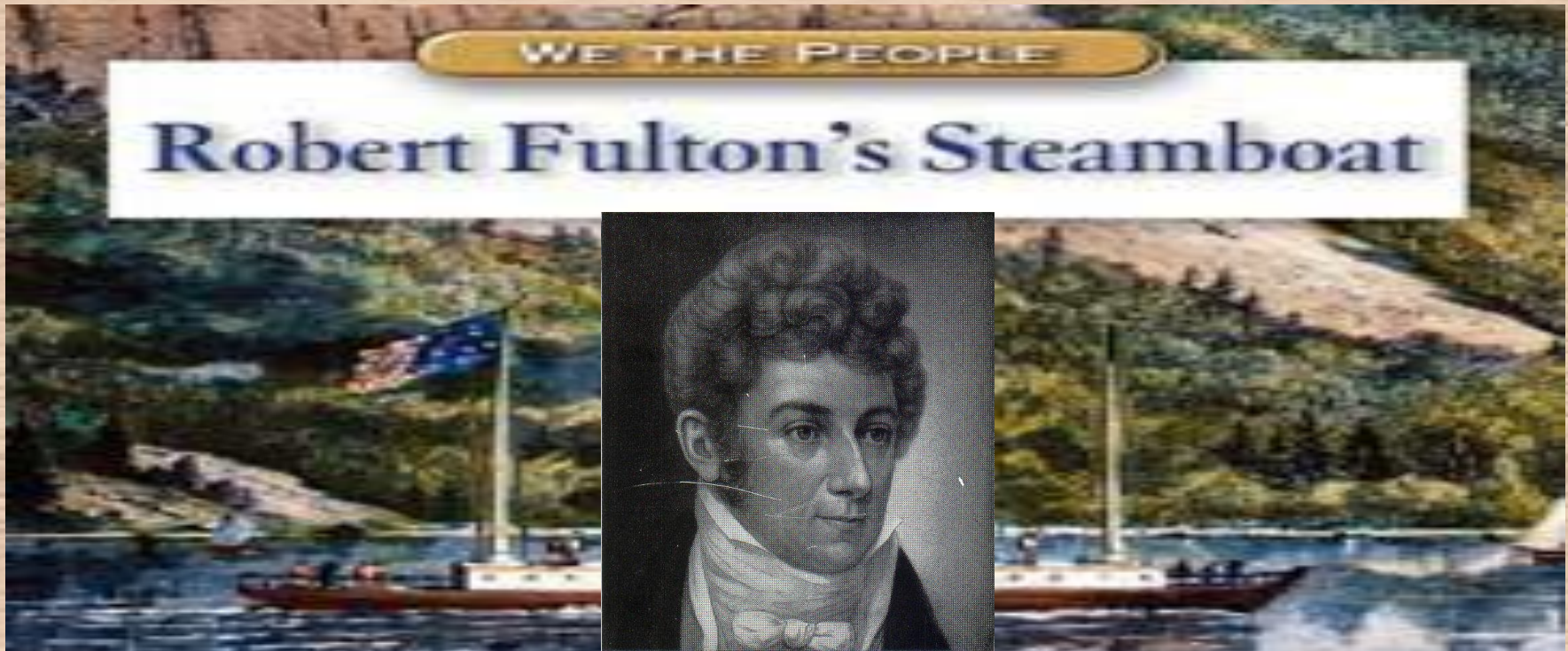
Erie Canal Video



Steamboat

- Who is the inventor of the steamboat?

The **steam engine** led to the invention of the steamboat. The first successful steamboat was the Clermont, which was built by American inventor Robert Fulton.




Steamboat

- How does the steamboat function?
- What is the impact of the steamboat?

Fulton used the idea of the steam engine to power the boat for movement. This allowed faster water transportation and decreased travel time. The steamboat enabled goods to be transported both up and down the river system without the products (crops) spoiling during the trip.





Steam from
steam engine

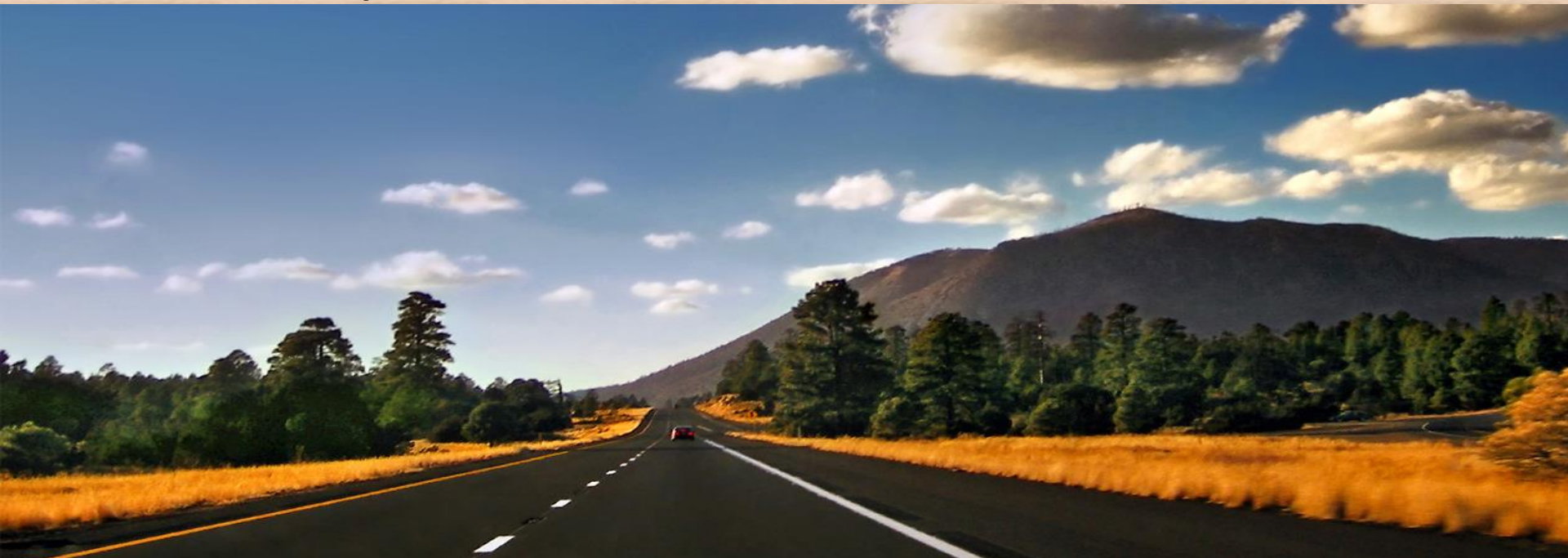
Steamboat Video




National Road

- Who is the inventor of the National Road?
- How does the National Road function?

The national road was the first major improved highway in the U.S. to be built by the federal government. About 620 miles long, the National road connected cities to rivers. This played a major role in westward expansion for thousands of settlers.



A dirt road with a brick-paved section, surrounded by trees and fallen leaves. The road is covered in fallen leaves, and the surrounding area is lush with green foliage. The text is overlaid on a light orange rounded rectangle in the upper right quadrant.

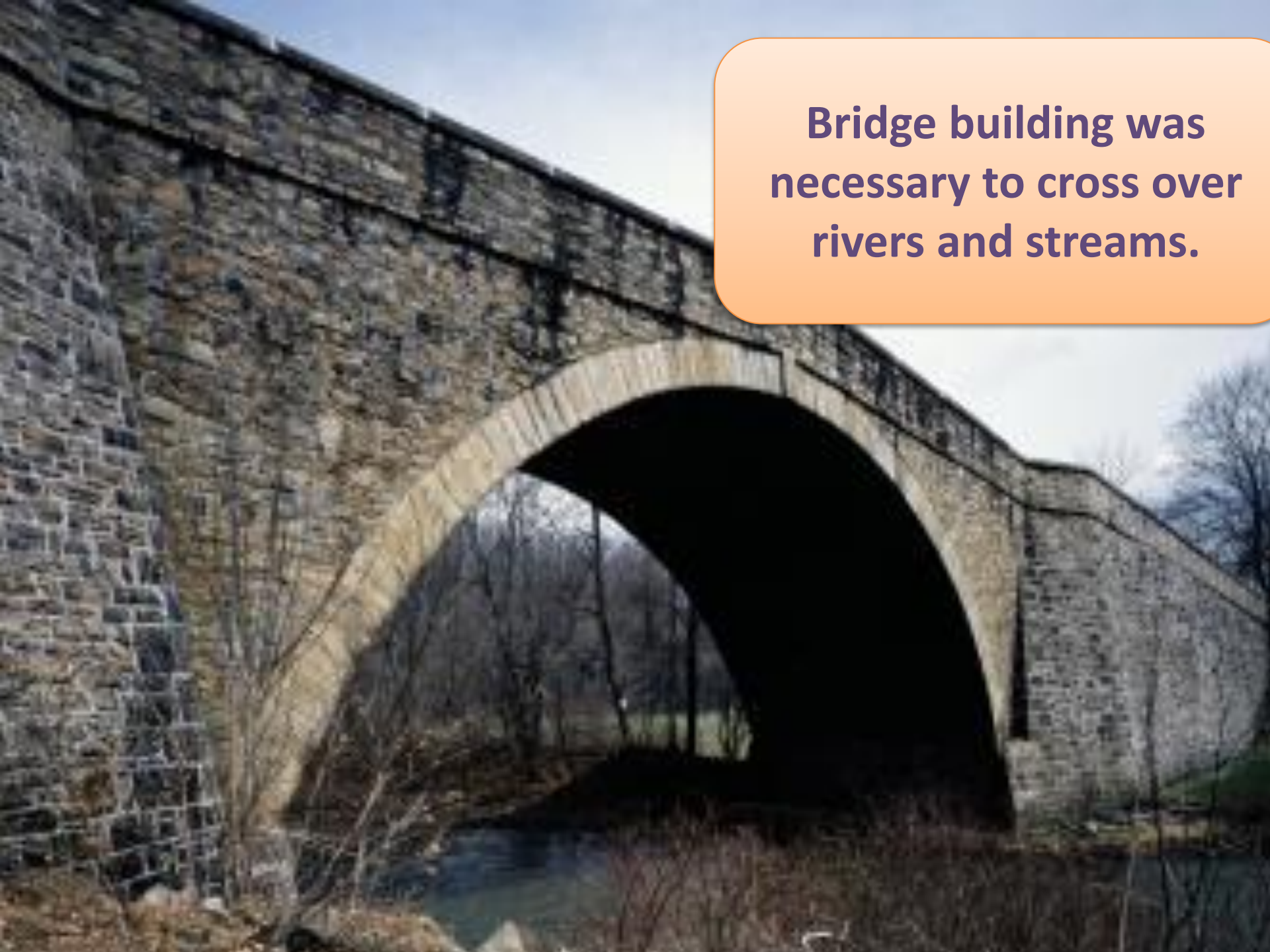
**First National Road that
started a pathway to
cities and states.**

National Road

- What is the impact of the national road?

The impact of the national road connected cities, rivers, and states that brought the nation closer. This road was the inspiration of the nation's first highway.



A large, multi-arched stone bridge spans across a river. The bridge is constructed from dark, rough-hewn stones. The central arch is the largest and most prominent, with smaller arches visible on either side. The river flows through the arches, and the surrounding landscape is filled with bare trees and shrubs, suggesting a late autumn or winter setting. The sky is a pale, overcast blue.

Bridge building was necessary to cross over rivers and streams.

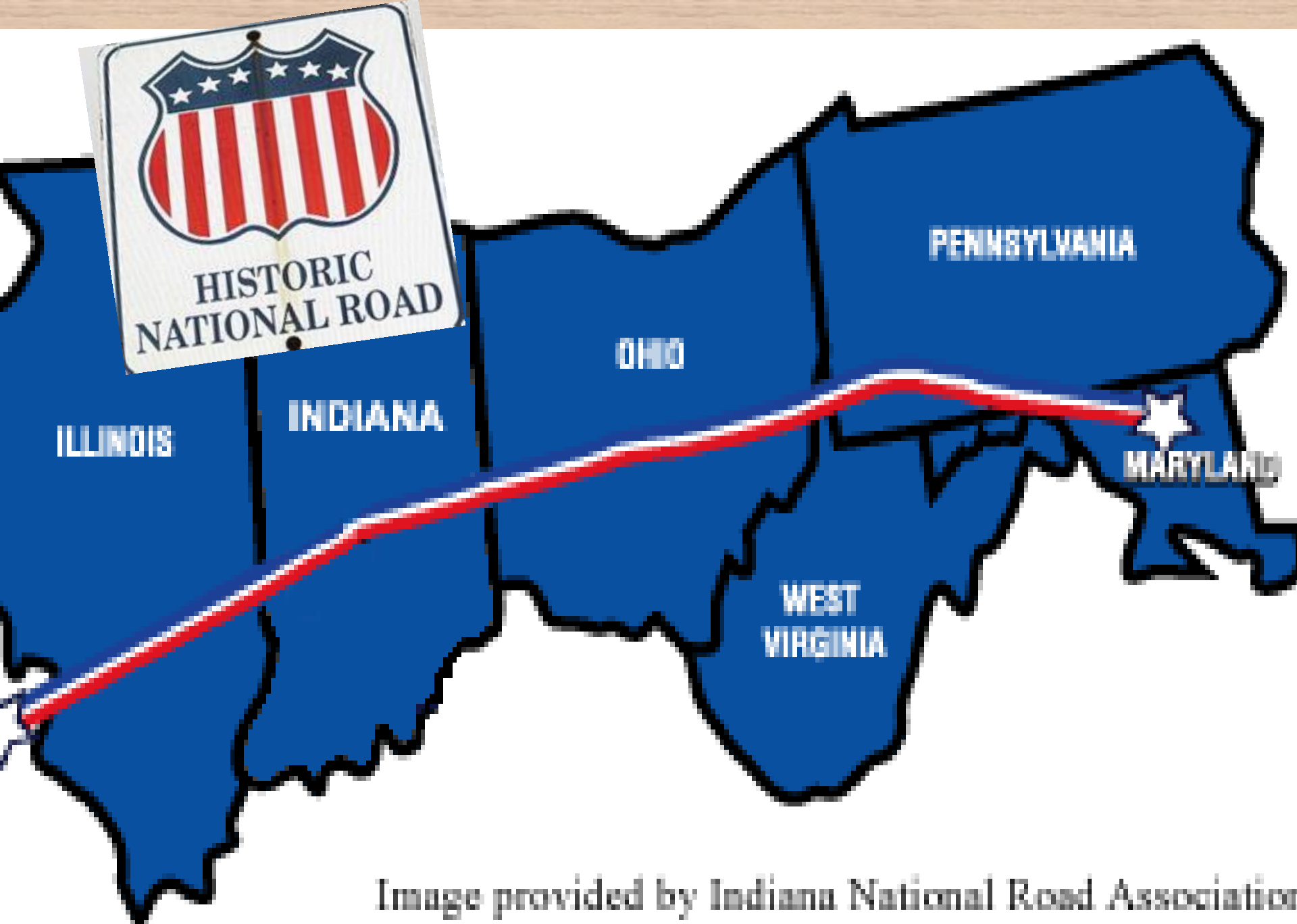


Image provided by Indiana National Road Association

National Road Video



HISTORIC NATIONAL ROAD

Telegraph

- Who is the inventor of the Telegraph?

Samuel Morse invented a faster way to communicate by inventing the **telegraph**. The telegraph made instant communication with the entire nation of reality.

Instant
communication
all over the
nation



Telegraph

- How does the telegraph function?

It function by the use of electronic beeping to send a coded message called “Morse code.” This improved long distance communication by decoding the message.

**Morse Code that
decodes messages**

A	· —	N	— ·
B	— · · ·	O	— — —
C	— · — ·	P	· — — ·
D	— · ·	Q	— — · —
E	·	R	· — ·
F	· · — ·	S	· · ·
G	— — ·	T	—
H	· · · ·	U	· · —
I	· ·	V	· · —
J	· — — —	W	· — —
K	— · —	X	— · · —



**Instant
communication
all over the
nation**

Telegraph

- What is the impact of the telegraph?

Thanks to the telegraph, daily newspapers could now publish next-day account of speeches, elections, and battles. This became very useful during the Civil War.



Telegraph Civil War Video



Cotton Gin

- Who is the inventor of the cotton gin?
- How does the cotton gin function?

Plantation owners in the South used slave labor to grow cotton, rice and tobacco. South often failed to develop new technologies to satisfy demand for raw cotton.

Until, the inventor Eli Whitney developed the cotton gin. One machine could do the work of fifty workers separating the sharp seeds by hand.

**Removing the seeds by
hand took:
18 hours for
1 pound of cotton**





**Removing the seeds
by hand took:
18 hours for
1 pound of cotton**



Cotton Gin

- What is the impact of the cotton gin?

Plantation owners began to use more slaves and the price of slaves doubled overnight. Over the next 40 years, plantation system of “King Cotton” spread throughout the South.



“King Cotton” in South Plantations

Cotton Gin video



Steel Plow

- Who is the inventor of the steel plow?

It wasn't until the steel plow was introduced by John Deere, that western farmers were able to harvest their own crops more **efficiently**.

This makes
farming so
much easier!



Steel Plow

- How does the steel plow function?

Deere figured out a way to make things easier for western farms by creating a plow that was made of polished steel to break up tough soil without soil getting stuck to it.



Steel Plow

- What is the impact of the steel plow?

The steel edge allowed farmers to cut through the rocky soil and made planting crops in hard soil easier. Americans were able to plant enough crops to take care of our growing nation.



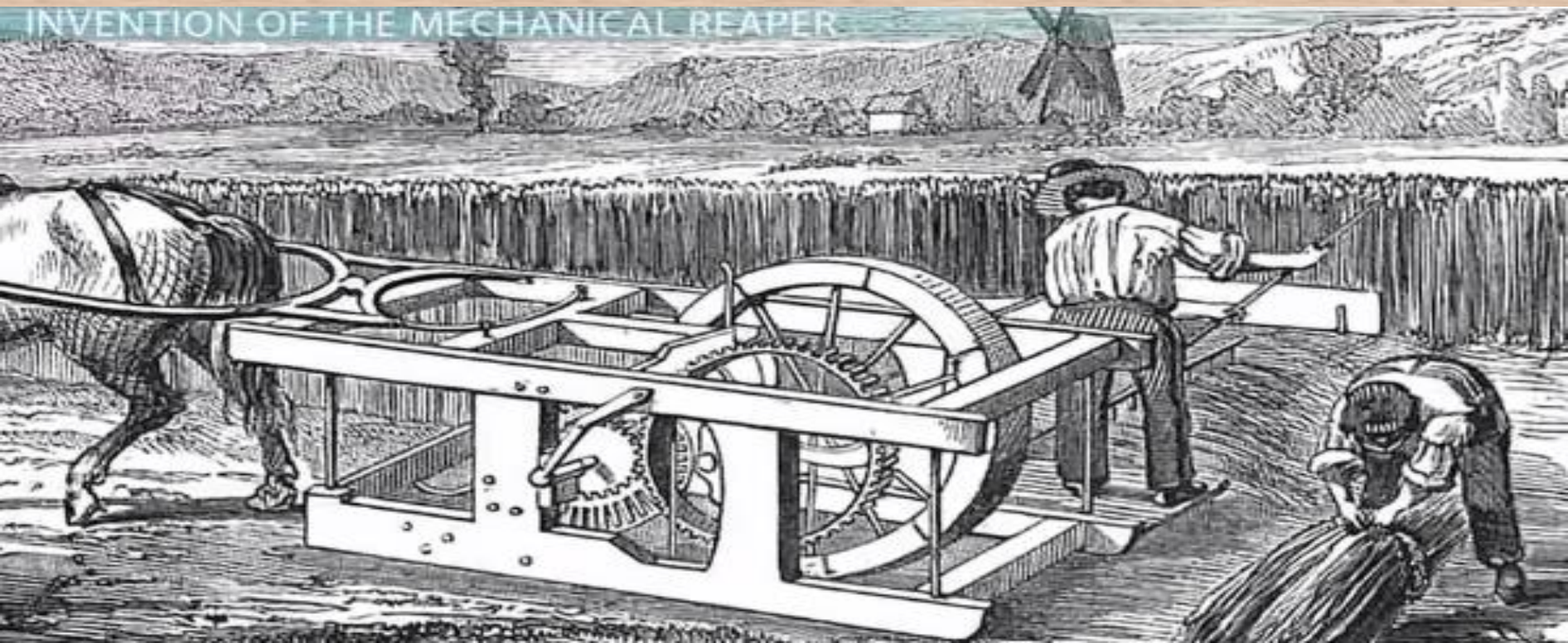
Steel Plow Video



Mechanical Reaper

- Who is the inventor of the mechanical reaper?

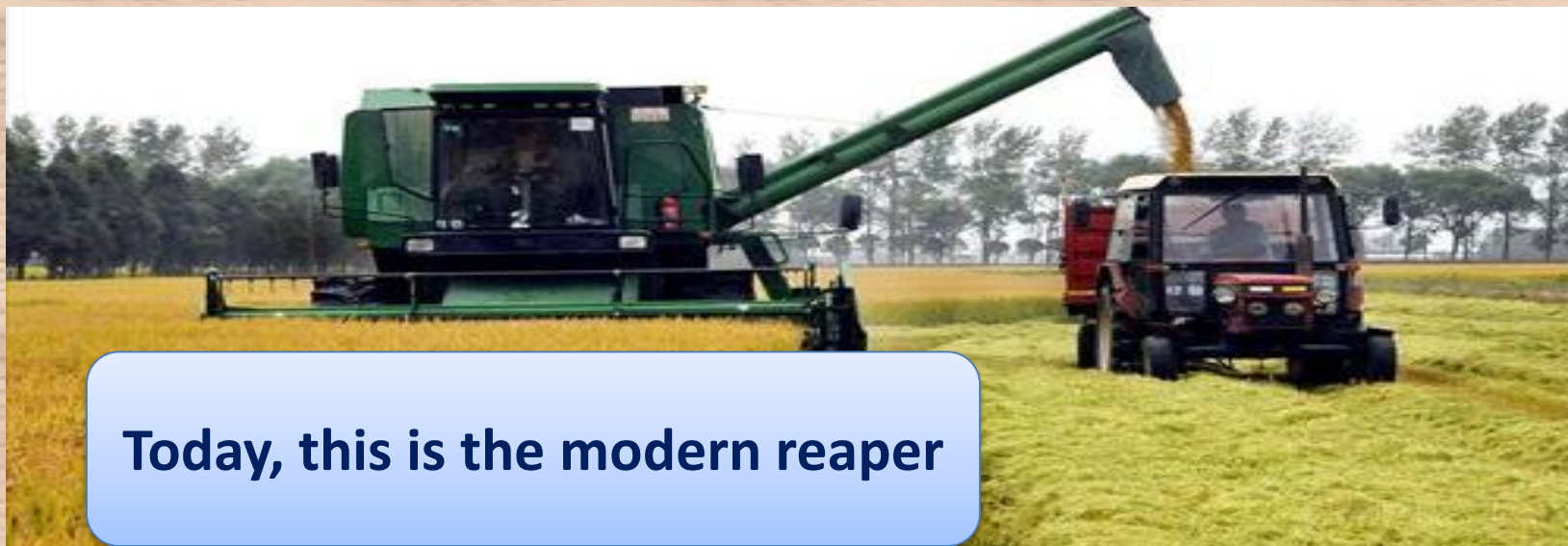
Not long after the cotton gin was invented, Cyrus McCormick invented another significant agricultural invention that revolutionized farming, the mechanical reaper.



Mechanical Reaper

- How does the mechanical reaper function?
- What is the impact of the mechanical reaper?

This machine was used by farmers to **harvest** crops mechanically and more efficiently by replacing the manual cutting of the crop. It was an automatic grain cutter that saved time tremendously. As the farmland expands to the Great Plains and the Midwest, the reaper was the tool to use.



Today, this is the modern reaper

Mechanical Reaper in Action

INVENTION OF THE MECHANICAL REAPER

*and left in ad good order, for binding in a wagon can be done with
— or with —*



Mechanical Reaper

*invented by Cyrus McCormick in 1831;
used by farmers to harvest crops mechanically*