

WHERE WOULD WE BE WITHOUT INVENTORS?

A cross curricular unit for

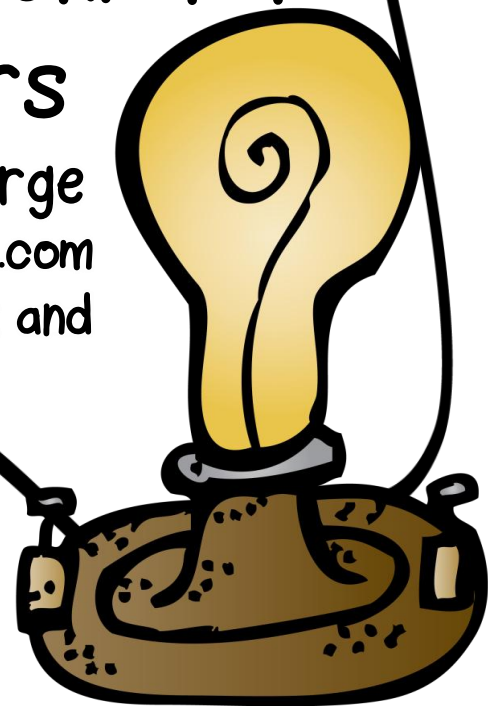
young learners

By Nancy Vandenberg

Firstgradewow.blogspot.com

Graphics by melonheadz and

scrappin doodles



Where Would We Be Without Inventors?

This little unit is intended to introduce young learners to the wonderful world of inventors and inventions.

It includes some information on several inventors including:

Benjamin Franklin

Alexander Graham Bell

Thomas Edison

Garrett Morgan

Richard Allen

A couple of good resources include:

American Inventors and Innovators by A Child's Great American Library

Five Notable Inventors by Wade Hudson

Now and Ben by Gene Barretta

Enduring Understanding:

New ideas and inventions affect how I live.

How have inventors helped to shape our world and our lives?

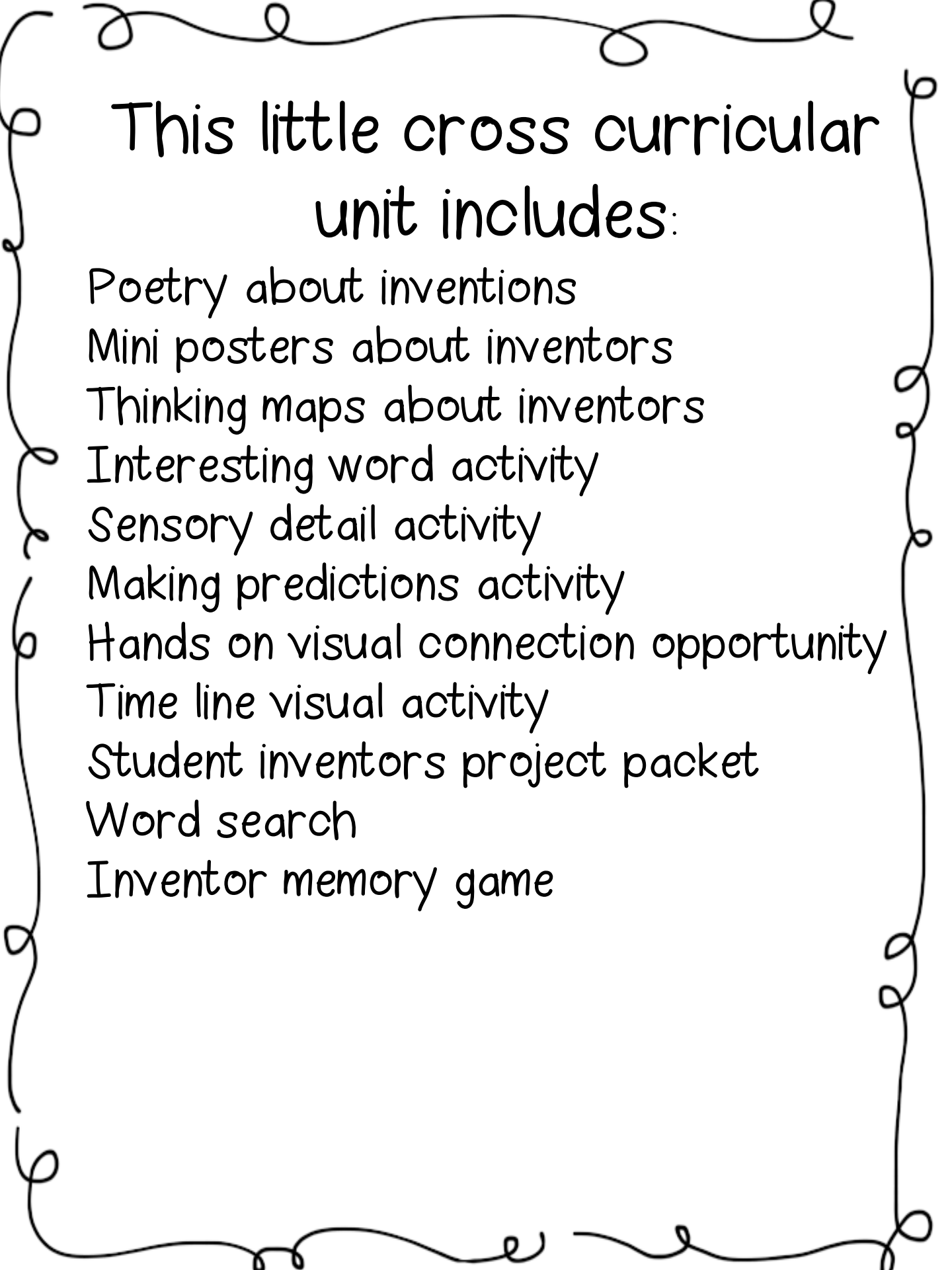
Who are the important inventors and historical figures?

How can one invention lead to better inventions?

How can one figure out meaning of unknown words?

Sensory details in reading.

Making predictions and confirming while reading helps readers stay involved with text.



This little cross curricular unit includes:

Poetry about inventions

Mini posters about inventors

Thinking maps about inventors

Interesting word activity

Sensory detail activity

Making predictions activity

Hands on visual connection opportunity

Time line visual activity

Student inventors project packet

Word search

Inventor memory game

INVENTION

Adapted from a poem
by Shel Silverstein

I've done it, I've done it!

Guess what I've done!

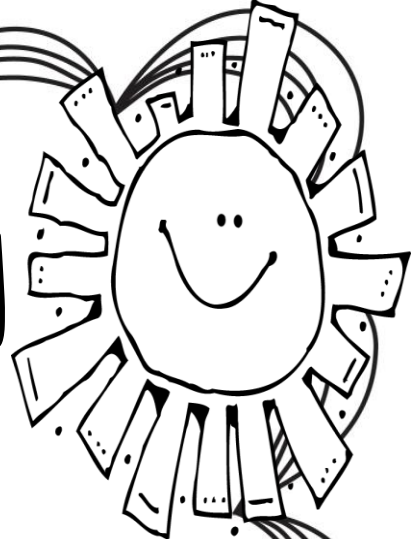
Invented a light

that plugs into the sun.

The sun is bright enough,
The bulb is strong enough,

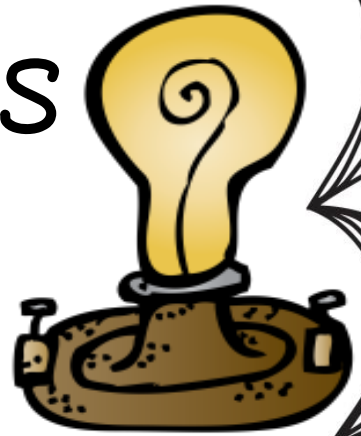
But, oh, there's only one
thing wrong....

The cord isn't long enough



Hooray For Inventors

Inventors, inventors!
You made something new!
You made our lives easier.



A big hooray for you!
It took Bell to make the telephone ring,
And Edison to light our way,
It took Robert Fulton in a steamboat,
To chug-chug down the bay.

George Pullman made the sleeping car
For railroad trips at night
Lou Waterman made the fountain pen
So everyone could write.

Inventors, Inventors!
You made something new.
You made our lives easier
A big hooray for you!



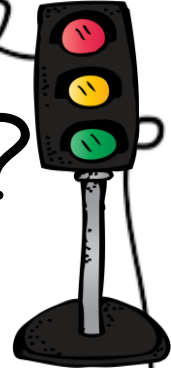
Things Change

History is about the past or long ago.

The past goes back a long, long way.

Things were different in the past from how they are now.

There were no cars, trains or airplanes. People used horses, with wagons or carts to go places. There was even a time when people didn't have wagons or carts. The wheel had to be invented first. People had to learn how to work with wood to build carts. They had to invent all the tools they would need. Inventors are people who make new things. Thanks to inventors we have cars, telephones, airplanes, refrigerators and so much more.



What is an Inventor?

An inventor is the first person to create a new item or different way of doing something. Inventors are highly creative thinkers who try to look for ways to solve problems and improve on other ideas to develop a useful item that fills a need. Some have changed the way entire nations of people live.



Name _____

Inventors

can

are

have



Good Readers

notice and think about interesting words in the text. They make predictions about the meanings.

They read on to try to figure out what those words mean.



Name _____

Inventions

Brainstorm a list of things you think someone invented. Just look around!

On the back draw and write about the most important invention to you.

Ben Franklin



Benjamin Franklin was born in Boston on Jan. 17, 1706. He was the 15th of 17 children and the 10th son. With so many children, the Franklin family didn't always have a lot of money. As one of so many children, Benjamin found that he had to fend for himself much of the time. He developed into an independent problem solver which would last his whole life.

He invented bifocal glasses so he would not have to switch glasses when looking at things far away and close up. He invented the lightning rod to protect people's homes from being destroyed by lightning.

He invented the Franklin stove which provided better heat for their homes..

In 1752 he proved that lightning and electricity are the same thing using a kite, string, and key in a thunderstorm. His experiments earned him fame. He was also awarded honorary degrees from Harvard and Yale even though he only went to school until he was 10.

Name _____

Benjamin Franklin



Lined writing area for notes or a letter.



Name _____

Sensory Details with Benjamin Franklin

Ben Franklin invented the wood burning stove.

What would it be like without the warmth from the stove?

How would a wood burning stove smell?

How would a wood burning stove sound?

On the back draw what you think a wood burning stove might look like

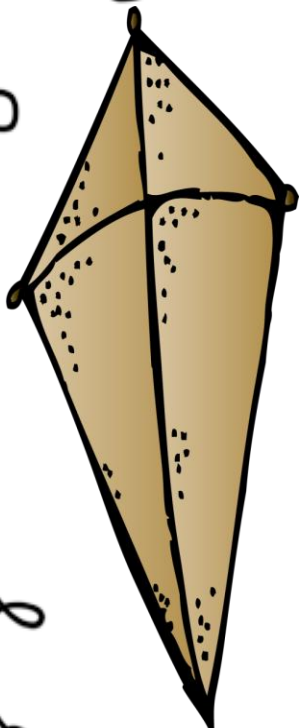
Sensory Details with Benjamin Franklin

Benjamin Franklin found out that lightning was electricity. He put a metal key on a kite string. Lightning hit the kite while he was holding on, and he got shocked!!

How would it feel to get shocked?

Would you feel hot or cold?

Would you feel tingly or numb?



Alexander Graham Bell



Alexander Graham Bell is most famous for invention of the telephone. He first became interested in the science of sound because both his mother and wife were deaf. His experiments in sound eventually led him to want to send voice signals down a telegraph wire. He was able to get some money and hire his famous assistant Thomas Watson.

Together they were able to come up with the telephone. The first words spoken over the telephone were by Mr. Bell on March 10, 1876. They were "Mr. Watson, come here, I want to see you".

It turns out that other scientists had similar ideas. Bell had to race to the patent office in order to get his patent in first. He was first and, as a result, Bell and his investors had a valuable patent that would change the world. They formed the Bell Telephone Company in 1877.

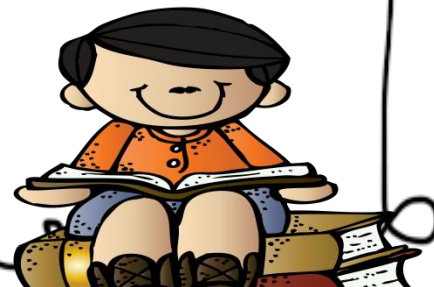
Predicting

*Readers make predictions about text as they read.

*Readers use what they already know, picture clues, and talking with others to help make predictions.

*Readers confirm or contradict predictions by reading on.

*Stay involved with the text by thinking about what will happen next!



Name _____

Making Predictions

As you read along, stop and make a prediction about the text. What helped you make the prediction? Keep reading. Was your prediction correct?

Text Read _____

Prediction What helped you make the prediction? Confirmed?

Prediction	What helped you make the prediction?	Confirmed?

Alexander Graham Bell



A large, rounded rectangular area containing 18 horizontal lines, intended for writing notes or a story about Alexander Graham Bell.



Tell how telephones have
changed over time.

HELLO? HELLO?

Make a tin can phone!

Collect tin cans, wash, cut off one end of the cans, punch hole in bottom of each.

Thread a string through the bottom of two cans.

Tie a knot in the ends.

Two kids hold on to one of the cans and stretch apart. Take turns talking and listening.

Hold open end of can over mouth to talk.

Hold open end of can over ear to listen.



Thomas Edison



Thomas Alva Edison (1847-1931) was an American inventor whose many inventions changed the world. His work includes improving the incandescent electric light bulb and inventing the phonograph, the phonograph record, the carbon telephone transmitter, and the motion-picture projector.

Edison's first job was as a telegraph operator. While working, Edison saw the need for better light and experimented with thousands of different light bulb filaments to find just the right materials to glow well, last a long time, and be inexpensive. In 1879, Edison discovered that a carbon filament in an oxygen-free bulb glowed but did not burn up for quite a while. This incandescent bulb revolutionized the world.



On the back, tell how light bulbs have changed over time.

Name _____

LIGHTBULBS

How would things be different if no one ever invented the light bulb?



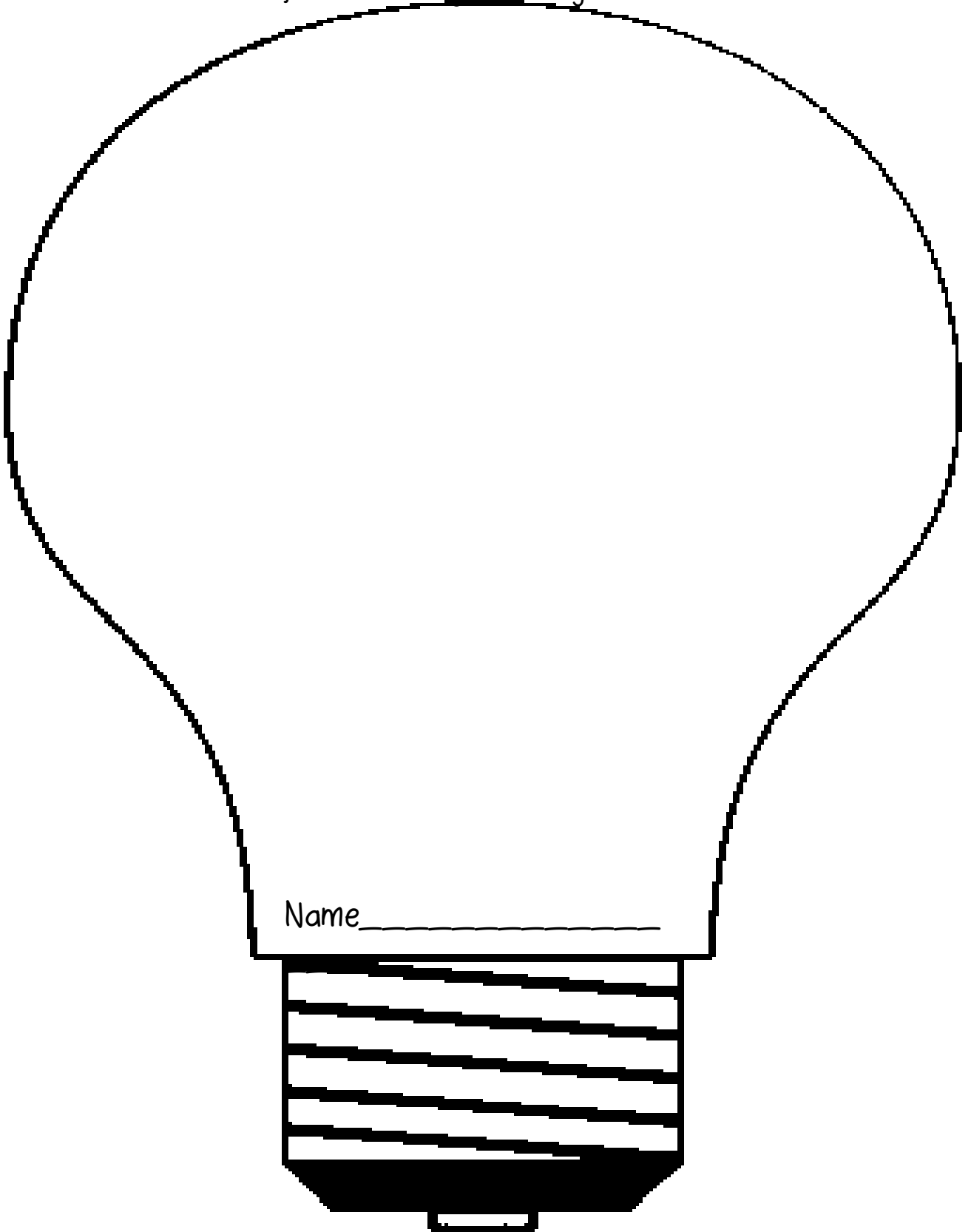
Light Bulb pattern

Print on light colored cardstock.

Write or draw on bulb,

“Without the light bulb, I wouldn’t be able to...”

Cut out, laminate to give it a “glass-like” feel



Garrett Morgan



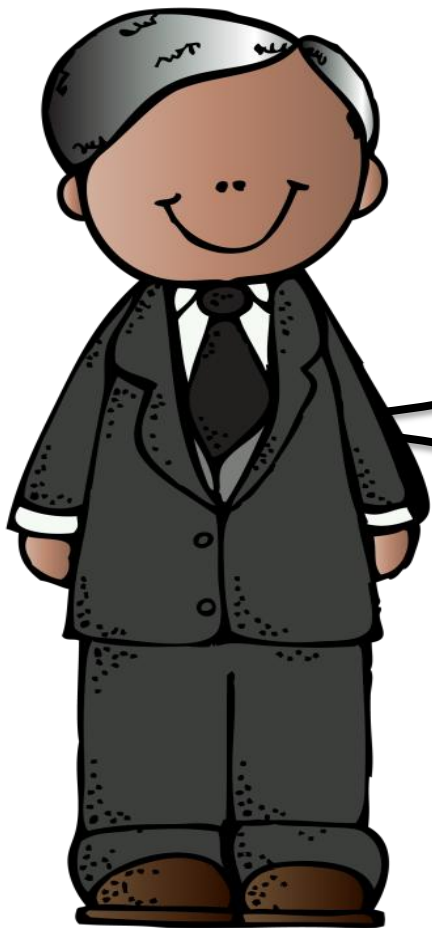
Garrett Augustus Morgan (March 4, 1877 - August 27, 1963), was an African-American inventor and businessman. He was the first person to patent a traffic signal and many other inventions. Morgan was born in Kentucky, and was the son of former slaves (and the 7th of their 11 children). He only went to elementary school, but he continued to learn a lot on his own.

In 1920, Morgan went into the newspaper business. He was very successful, and eventually bought a car. While he was driving along the streets of Ohio, he realized how unsafe intersections were, and wanted to make driving safer.

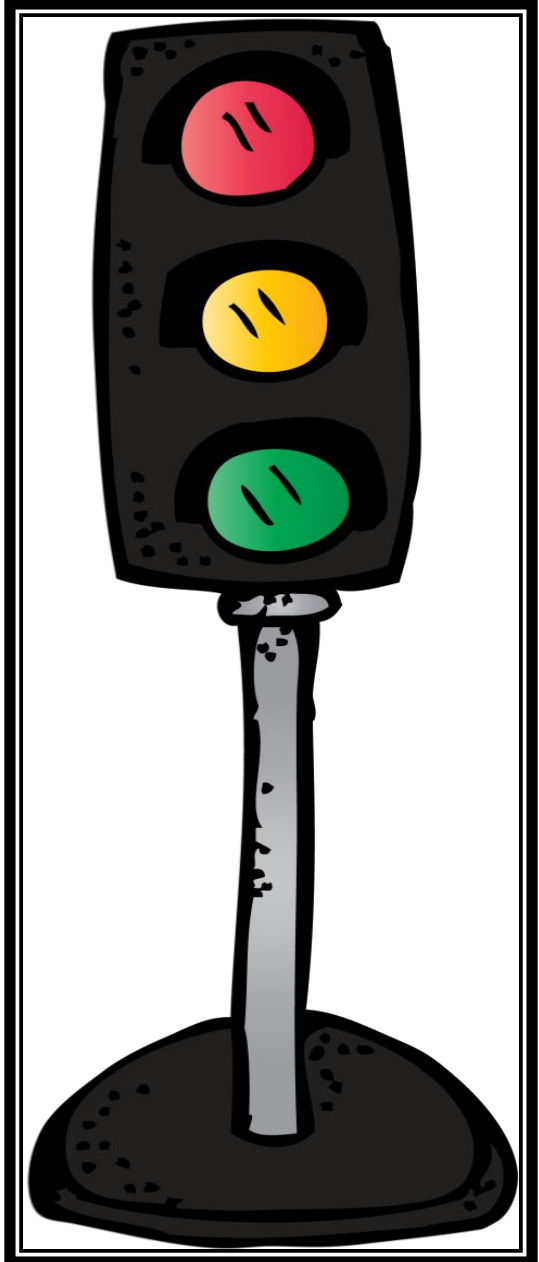
Morgan created a new kind of traffic signal on November 20, 1923. This was the first traffic signal patented, but not the first invented. His traffic signal was a T-shaped pole with arms (but with no lights) that had three signs, a red "stop," a green "go," and another red "stop in all directions." This last signal let walkers cross the street. It was controlled by an electric clock. This new traffic signal became very popular, and was used all around the USA. Morgan sold his device to the General Electric Corporation for \$40,000 (a huge sum at that time). His device was used until the three-light traffic light was developed.

Name _____

Garrett Morgan

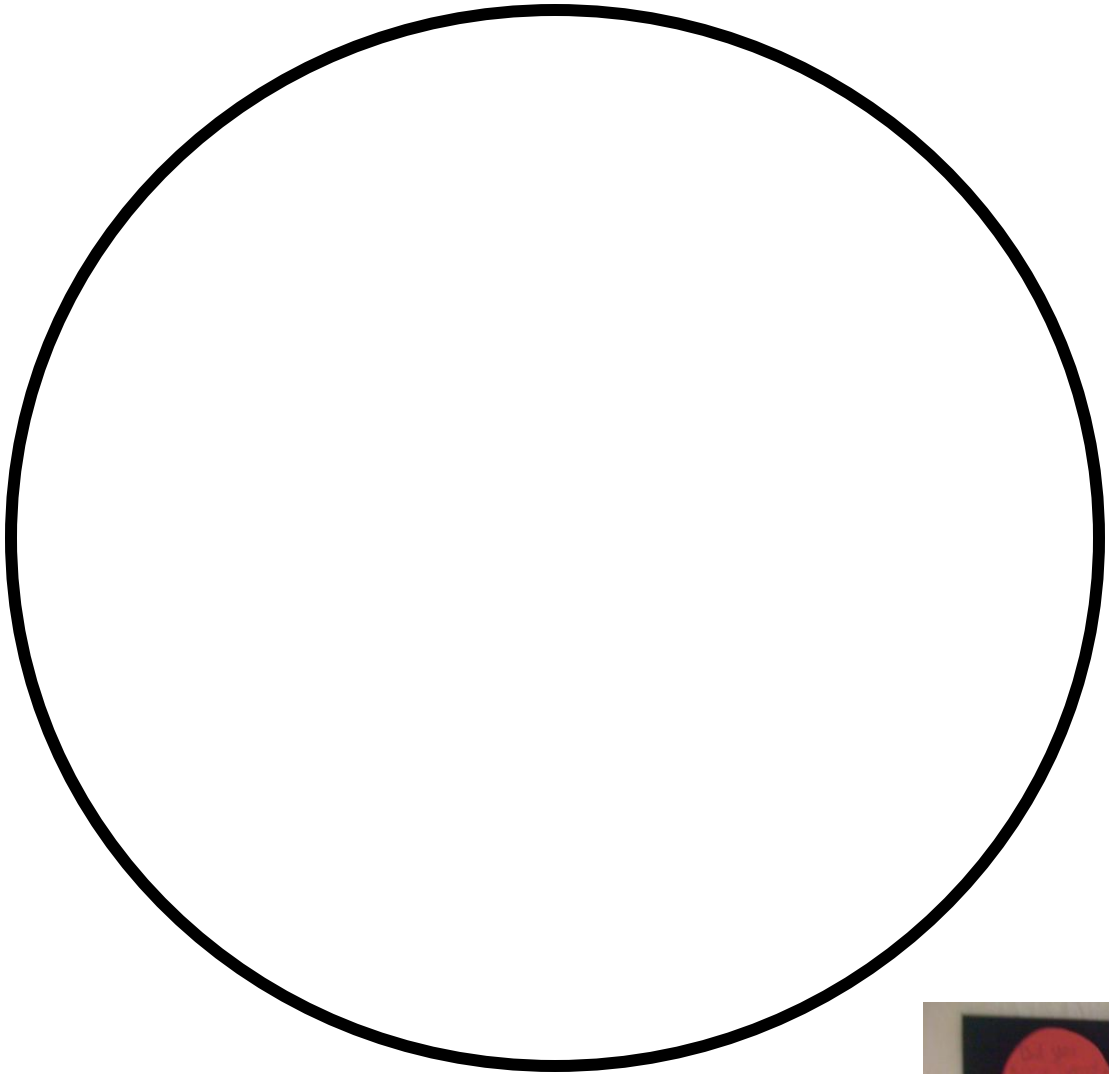


vnc/16

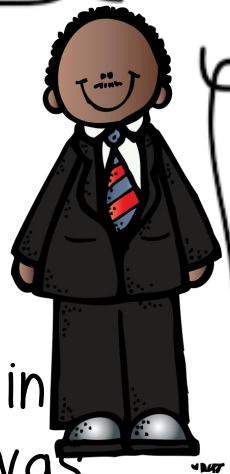


Tell how traffic signals have changed over time.

Cut out circle pattern. Trace and cut out one red, yellow, and green circle. On each colored circle write a fact about Garrett Morgan. Glue all three circles to a black construction paper strip to resemble a stop light.



Richard Allen



Richard Allen was born to slave parents in Philadelphia on 14th February, 1760. He was sold to a farmer in Delaware and in 1777 became a minister.

His master allowed him to preach in public and in 1786 he purchased his freedom and moved to Philadelphia where he conducted prayer meetings for African Americans..

Mr. Allen was unhappy with the restrictions placed on blacks who attended church services. In 1787 Allen helped organize an independent church. They converted an old blacksmith shop into America's first church for black people.

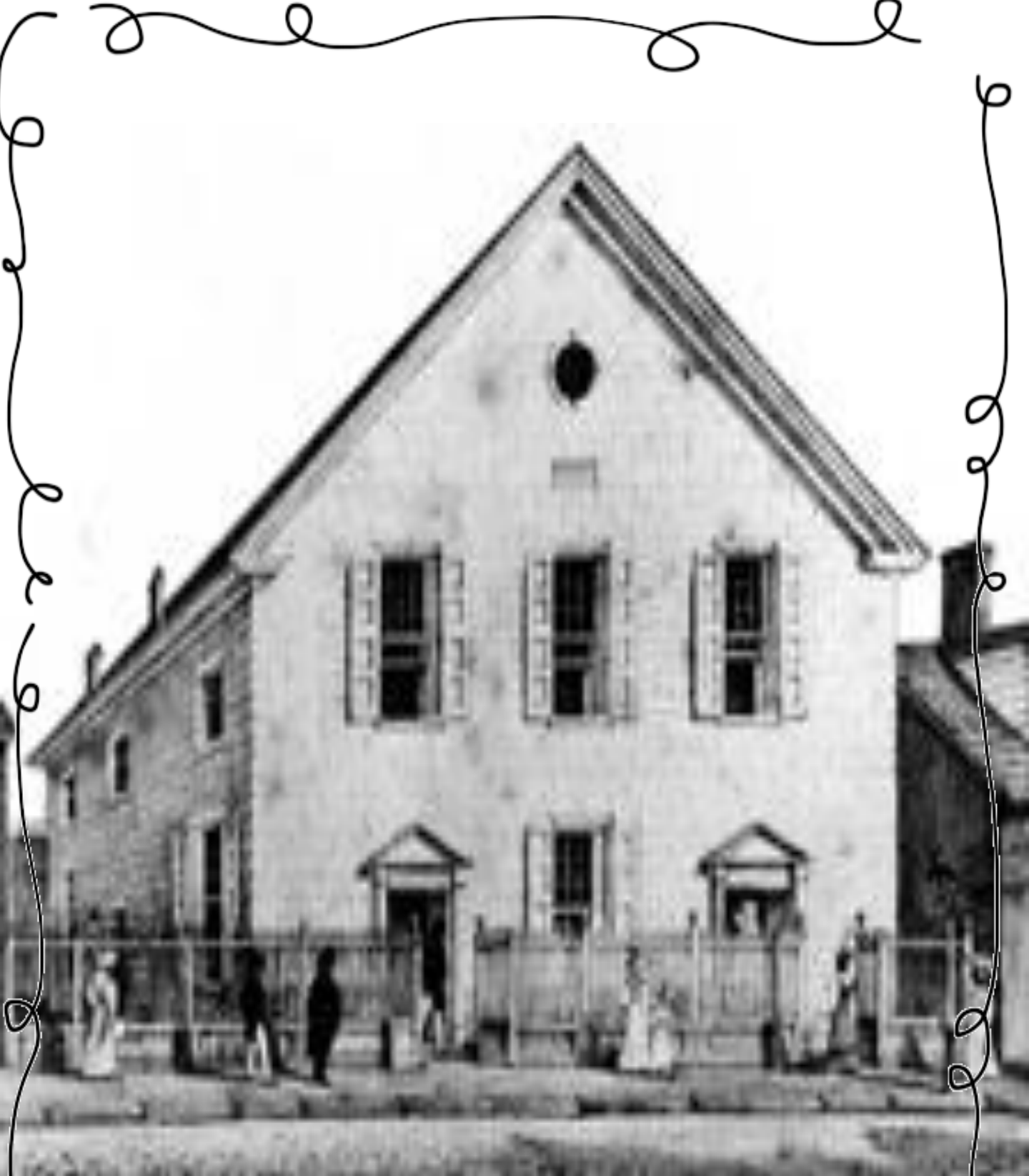
In 1816 Allen helped establish the African Methodist Episcopal Church, and he was elected as its first bishop.

Name _____

Richard Allen



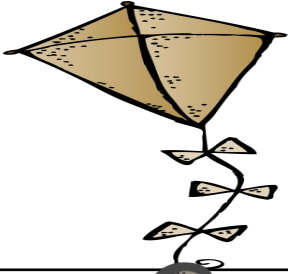
A large, rounded rectangular area containing 18 horizontal lines for writing.



Richard Allen's first church building
for African Americans

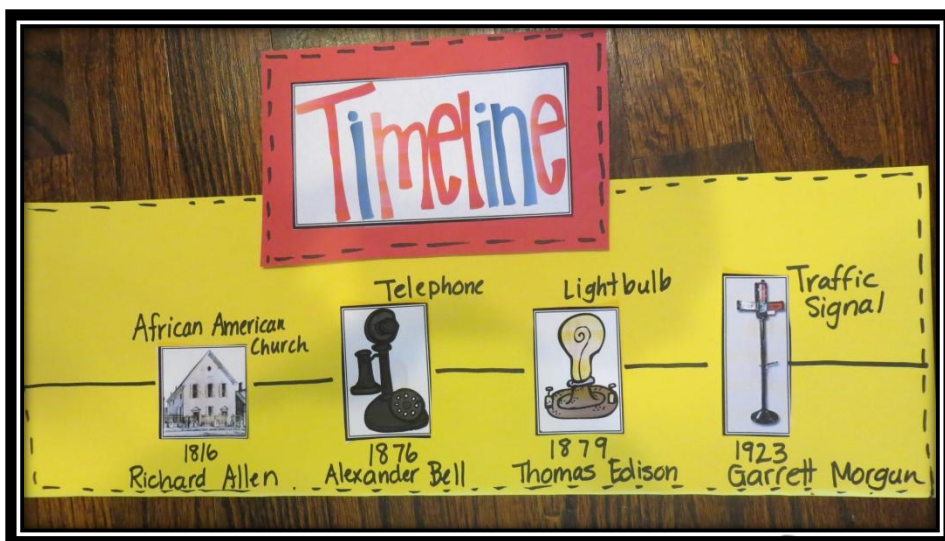
Name _____

How have inventions changed how we live?



The next Hands on Visual activity will help kids understand what a time line is and will help organize information.

Print off and have kids cut out the title and the icons for the inventions. Glue pieces to a large strip of construction paper and label.



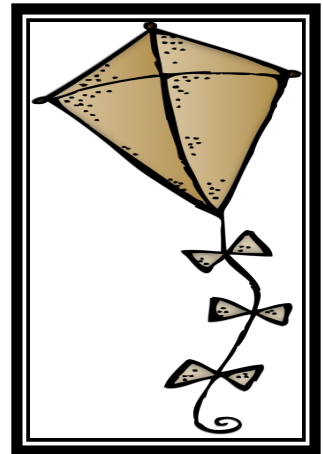
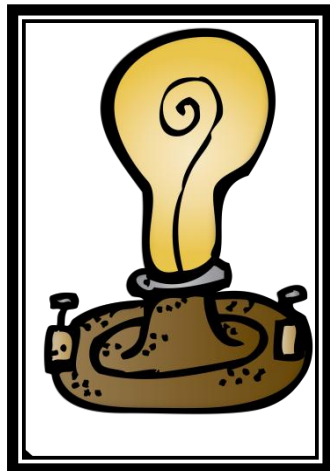
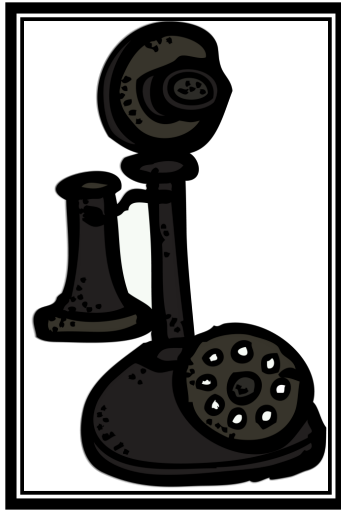


What is a timeline?

Timelines help us understand history.

They also tell us what happened when and how much time went by between events.

Timeline



Now make a timeline of your life.

Draw some pictures that show important things that happened in your life. Cut them out and glue them along a line. Label with dates and descriptions of the events.



_____ 's
Timeline



Kids can be inventors too!

Can you think of something that could make our lives better or easier? Draw a diagram. Label the parts and explain what your invention will do.

The next few pages can be used if you would like to have your students create an invention as a home project. A letter to parents is included as well as a planning book for kids to put together. This part of the unit was inspired by friend and fellow teacher Regena Bell.

Invention Homework!

We are excited about a new unit of study – INVENTIONS! We will be researching on the internet about inventors and using the inquiry process in our classroom with this fun unit of study!

First Graders are receiving a packet entitled “_____’s Invention Planning Guide.” Children are to think of a problem or a situation they might encounter, and then think what could be done to make the situation better or the problem solved. The “invention” may be a very simple solution. The internet may be helpful for ideas. This homework project is due_____. Please send the packet and “invention” to school by this date.

Parents may be a guide with the invention; however, first graders are to fill out the packet in their own handwriting. The invention can be a real working model or a futuristic model that does not have to work. Have fun inventing!

Examples from past years:

A boy cannot reach his stuffed animal on the top shelf in his closet - invented a stick with a glove on the end to push the stuffed animal off the shelf

Some people who forget their manners at the dinner table - invented place mats with manner reminders - "Please pass the _____. Thank you." and Excuse me, etc.

Someone had a problem getting the popcorn out of the microwave because it was too hot - they put a string on the popcorn bag and pulled the bag out of the oven with the string that did not become hot

A boy invented a make believe machine that would clean up his room - he made a model of a robot - he would push a paper button for picking up toys, another button for making his bed

A girl invented a diary box - she put a stick- up light in a box with holes for her eyes and hand- she could write in her diary without anyone seeing what she was writing

A boy invented a container with a long tube on the end with a strap handle. He was able to fill his dog's food bowl without bending over - the dog food went through the tube into the bowl

A girl invented a burglar alarm for her room - it was a bike horn taped to a piece of wood - if someone stepped on it - she could hear the horn and know someone was in her room

A girl invented the buddy bear - she gets scared at night and fixed a bear that could sleep with her - it had cards with it that she would read that would tell her that her bear would be with her all night and not to be frightened.

We can't wait to see what your first grader will share! Happy inventing!



_____s

INVENTION PLANNING GUIDE



STEPS TO INVENTING

1. Brainstorm ideas

2. Plan and design

Breadboard

Design

Sketch

Model

3. Name it

4. Market it



MY INVENTION BRAINSTORMING PAGE

A problem or a situation I know about is:

What I think could be done to make the situation better or the problem solved:

MY INVENTION BREADBOARD PAGE

When planning an invention, you need to have an idea of what it will look like. As an inventor, you need to show that your invention can work. This is called a breadboard. Below draw a picture of what your invention will look like.

MY INVENTION MODEL

Once you have made the breadboard, you are ready for the next step- the model. An inventor needs to know who might want to buy the invention, how big it should be, what it should be made of, etc. Inventors ask themselves a lot of questions.

Who might want to buy this invention?

What will be special about your invention that will make people want to buy it?

How big will your invention be?

What will it be made out of?

Where could you sell your invention?

Now make a model of your invention.

MY INVENTION NAME

Now that you have created a model of your invention, it is time to choose a name for it. The name of your invention is important when selling it. You can't use a name someone else has already used. Think about how you would like people to remember your invention.

Brainstorm 3 different possible names for your invention..

1. _____
2. _____
3. _____

Now decide which one you like best
and write it in the box below.

MY INVENTION

ADVERTISE- MARKET!

Bring your packet and invention to school. Be ready to share your idea with the class! You might make a little poster to show your advertisement.

Or you can just tell about it. We hope you had fun working on your invention!!

Name _____

Find all the "Inventor" words in the puzzle.

t	e	l	e	p	h	o	n	e	i	t	i
n	m	e	l	a	l	i	o	n	e	t	i
e	f	m	a	s	e	l	w	i	b	n	e
v	u	s	n	t	h	e	n	e	e	d	e
n	t	a	g	t	i	m	a	l	l	e	n
i	u	f	i	l	r	i	n	e	l	t	c
p	r	e	s	e	n	t	i	m	i	e	i
b	e	t	t	e	r	l	i	n	g	e	f
e	t	y	c	h	u	r	c	h	h	m	f
m	o	r	g	a	n	i	m	e	t	i	a
e	d	i	s	o	n	t	i	i	t	r	
e	l	e	c	t	r	i	c	i	t	y	t

INVENT PAST PRESENT FUTURE NOW
THEN NEED SAFETY
MORGAN EDISON BELL ALLEN
LIGHT SIGNAL TRAFFIC CHURCH
TELEPHONE BETTER ELECTRICITY TIME

Inventions and Inventors Memory Match Game

The following page is a memory game where students have cards of the inventors and inventions. Cards are turned face down in front of players. Take turns turning over two cards at a time. If the cards match (inventor and invention), player gets to keep the cards. If they don't match, player turns cards back over and the next player takes a turn. Extra cards are included for teacher or students to program own cards.

Teacher- print cards on cardstock so players can not see through the paper.



Alexander Bell



Richard Allen



Thomas Edison



Garrett Morgan



Inventors
and Their
Inventions
Memory
Match



Ben Franklin

