

# EXCITING INVENTIONS

## UNIT OVERVIEW

What toy was invented by a baker who liked to throw around empty pie tins? (frisbee) What tasty treat was invented by an eleven-year-old boy who left his soda pop and water concoction on the back porch one winter? (popsicle) Exciting inventions is the topic for this thematic unit which is sure to motivate and maximize student learning. **Part I - Core Teaching Lessons** is a compilation of lessons presented in a structured, direct instruction format. Each core lesson has related student activities to demonstrate knowledge of the topic and to address key questions that will later be revisited by students (individually) in the major project. **Part II - Student Handbook** consists of activities and reproducible work sheets that go with the core lessons. **Part III - Optional Lessons** builds flexibility into the unit with a range of activities that can be used to enrich the unit. In **Part IV - Major Project**, students demonstrate how much they have learned in this unit by creating and displaying original inventions at an Invention Convention. Structured yet fun!

## PART I: CORE TEACHING LESSONS

In this section, five lessons are outlined in detail - providing a structured setting for learning about inventions. They each focus on key questions about the topic. The questions will be revisited later for the major project, when students will answer them individually instead of as a class. Each lesson includes detailed teacher instructions followed by a student assignment(s) relating to the key questions.

- |    |  |  |
|----|--|--|
| 1) | <i><b>Introduction: <u>WHAT</u> is an invention? <u>WHAT</u> is in a name?</b></i>                           | Invention Identification<br>Crossword Puzzle   |
| 2) | <i><b><u>WHO</u> can invent? <u>WHO</u> benefits from inventions?<br/><u>WHO</u> are past inventors?</b></i> | Philo Farnsworth Bio<br>Inventor Bingo         |
| 3) | <i><b><u>WHY</u> are inventions necessary?<br/><u>WHY</u> do inventions succeed or fail?</b></i>             | Worksheet<br>Advertising Techniques            |
| 4) | <i><b><u>WHEN</u> have inventions been created?<br/><u>WHEN</u> is the right time for an invention?</b></i>  | Invention Survivor<br>When Were They Invented? |
| 5) | <i><b><u>HOW</u> are inventions made?<br/><u>WHERE</u> do materials come from for an invention?</b></i>      | Invent An Invention<br>Wordsmith               |

## PART II: STUDENT HANDBOOK

This section contains information/worksheet pages and activities relating to the Core Lessons in Part I. It may be copied in booklet form for each student to use during the lessons.

## PART III: OPTIONAL LESSONS

- |    |                         |     |  |
|----|-------------------------|-----|--|
| 1) | Invention Alphabet Game | 7)  | Guest Speaker                                |
| 2) | Invention Center        | 8)  | Guess the Invention/Name that Invention Game |
| 3) | Bulletin Board          | 9)  | Persuasive Writing and/or Public Speaking    |
| 4) | Invention Wordsearch    | 10) | Invention Contests                           |
| 5) | Patent Lesson           | 11) | Inventions from the Kitchen                  |
| 6) | Invention Club          | 12) | Internet Sites                               |
|    |                         | 13) | Class Invention Book                         |

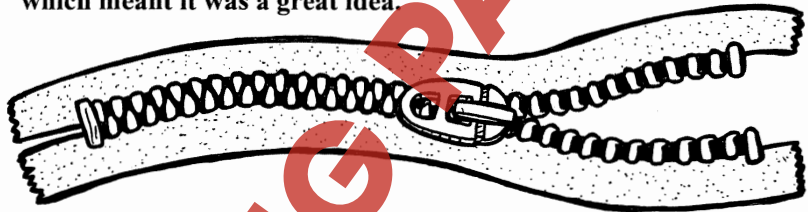
## PART IV: MAJOR PROJECT - INVENTION CONVENTION

This section of the unit is designed to be a culmination project. Students will demonstrate what they have learned from the unit by individually creating their own inventions. In so doing, they will revisit the key questions from **Part I - Core Teaching Lessons** and answer them relative to their own inventions. Ultimately, their inventions (along with advertisements) will be displayed at an **Invention Convention**. Detailed instructions and a grading scale are provided.

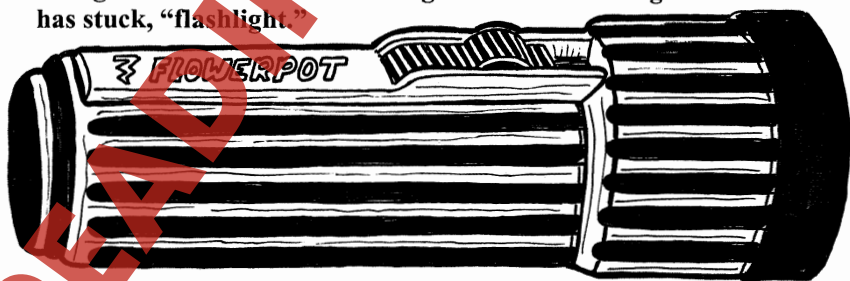
### WHAT'S IN A NAME?

There are many valuable lessons in the history of inventions that teach us the importance of a name. The name an inventor chooses can determine the success or failure of the invention. It is interesting to learn just how and why some of the most popular inventions were named. The following are a few examples that provide interesting facts about the origin and evolution of the names of some of them:

- The typewriter was first called "An Artificial Machine or Method for the Impressing or Transcribing of Letters, Singly or Progressively one after another, as in Writing, whereby all Writing whatsoever may be Engrossed in Paper or Parchment so Neat and Exact as not to be distinguished from Print." WHEW? Needless to say, when its name was shortened to "typewriter," it sold much more (probably partly because people could remember it much better).
- The zipper was first called "The Clasp Locker and Unlocker." It was renamed when someone exclaimed that it was a "zipper" of an idea - which meant it was a great idea.

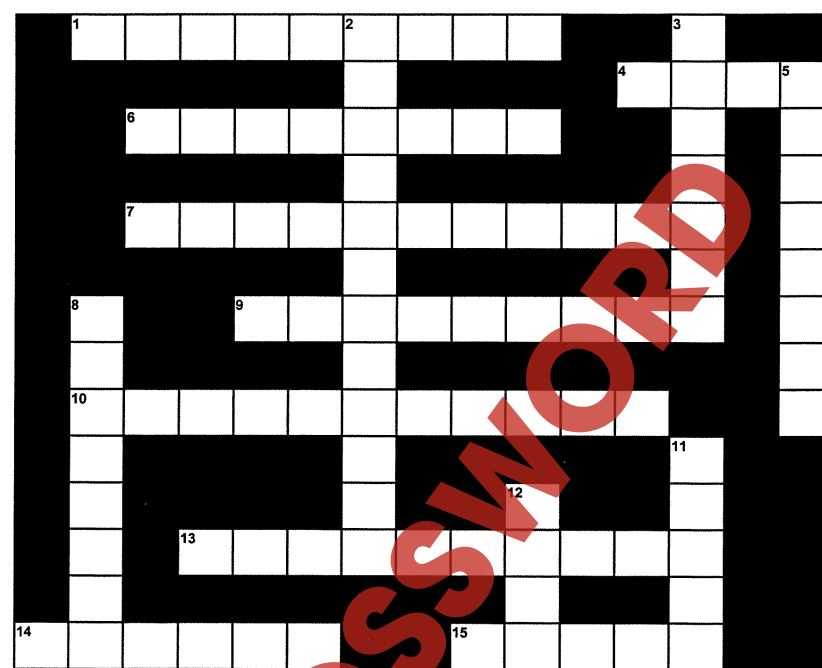


- The flashlight was originally called the "Electric Flowerpot." It was changed to "Portable Electric Light" before evolving into the name that has stuck, "flashlight."



"Twinkies" were first called "Little Shortcake Fingers" until the inventor saw a sign one day selling "Twinkle Toe Shoes." He liked the name so much that he shortened it to "Twinkies" and renamed his invention.

### INVENTION CROSSWORD PUZZLE



#### Across

- This invention began as a vacuum cleaner and then was transformed into a hand-held device connected to a pink bonnet that fit over a person's head.
- This invention was created at the World's Fair in 1904 when an ice cream vendor ran out of paper bowls. He searched for more, but in the end purchased several thin, waffle-like pastries from another vendor in which to serve his ice cream inside. Now, more than one-third of ice cream eaten is inside this invention.
- This invention was derived from "roots" of the sarsaparilla plant and was originally used as cough syrup. Charles Hires liked the taste and experimented with it until he created the popular beverage that we enjoy today.
- This very popular cartoon character began as a black and white rabbit named "Oswald" until legal complications caused him to change to a mouse - who lives in his own Magic Kingdom.



### THUMBS UP - THUMBS DOWN



Name: \_\_\_\_\_

Directions: With permission, watch 30 minutes of television - paying close attention to the commercials. Complete the following questions and chart during the 30 minutes:

Date: \_\_\_\_\_

Time Started: \_\_\_\_\_ Time Ended: \_\_\_\_\_

Total Number of Commercials: \_\_\_\_\_

Identify the following information for five of the commercials you watched: (Don't forget to rate how effective you think the commercial is in selling the product - 10 is the best and 0 is the worst.)

#### Commercial Advertising Chart

#	Product Name	Technique(s) Used	Target Market	Music (yes/no)	Rating
1					
2					
3					
4					
5					

What do you think is the most effective technique a company can use to sell their product?

### WHEN WERE THEY INVENTED?

Name: \_\_\_\_\_

#### I Circle the invention that was invented first.

- |                  |            |            |              |
|------------------|------------|------------|--------------|
| 1. ball          | dishwasher | seatbelt   | calculator   |
| 2. robot         | skateboard | rope       | map          |
| 3. tractor       | diaper     | fireworks  | soap         |
| 4. brick         | satellite  | clock      | helicopter   |
| 5. escalator     | submarine  | battery    | paint        |
| 6. traffic light | aspirin    | tools      | refrigerator |
| 7. stapler       | mirror     | sunglasses | horseshoe    |

#### II Draw a line through the invention that was not invented at the same time as the others.

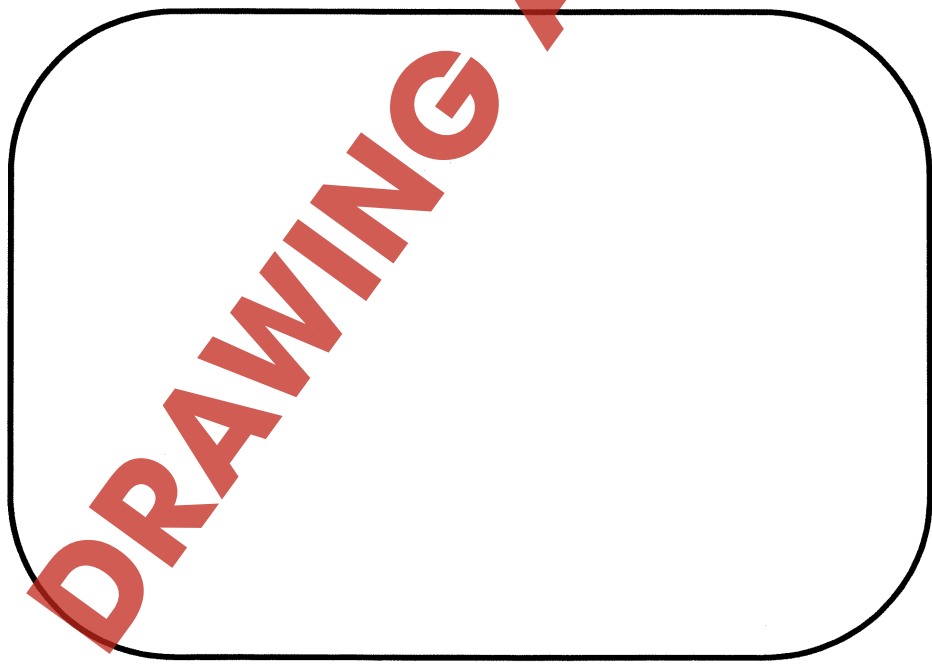
- |                     |               |                    |
|---------------------|---------------|--------------------|
| 8. television       | 9. calculator | 10. wheelbarrow    |
| toaster             | video game    | battery            |
| yo-yo               | chess         | saddle             |
| shoe                | computer disk | magnifying lens    |
| 11. washing machine | 12. wig       | 13. sewing machine |
| fork                | dam           | microwave oven     |
| compass             | button        | lawn mower         |
| playing cards       | Coca-Cola     | bicycle            |



III Place the inventions in order starting with the earliest one to be invented:  
(Place numbers 1, 2, or 3 next to each invention to show their order.)

- |                       |                 |                   |
|-----------------------|-----------------|-------------------|
| 14. ___ cash register | ___ paper       | ___ laser         |
| 15. ___ carpet        | ___ jukebox     | ___ train         |
| 16. ___ typewriter    | ___ fishing net | ___ missile       |
| 17. ___ Xerox machine | ___ thermometer | ___ sailboat      |
| 18. ___ sled          | ___ pencil      | ___ ballpoint pen |
| 19. ___ scotch tape   | ___ elastic     | ___ scissors      |
| 20. ___ light bulb    | ___ plow        | ___ Game Boy      |

IV Draw a picture of the invention that *you think* was the most important.



### INVENT AN INVENTION

**Directions:**

- Part I - List the team member's name next to their jobs.
- Part II - Use the items in the bag to create an invention.
- Part III - Answer the questions about your invention.

**PART I: Assign Team Members' Jobs** (All team members help create the invention too!)

- Captain - \_\_\_\_\_ (team leader)  
 Scribe - \_\_\_\_\_ (writes the team's ideas on this paper)  
 Time & Materials Keeper - \_\_\_\_\_ (watches the time & in charge of items)  
 Presenter - \_\_\_\_\_ (presents invention to the class afterwards)

**PART II: Create the Invention**

**PART III: Answer Invention Questions**

1. What is your invention's name and function? \_\_\_\_\_
2. Who benefits from your invention? \_\_\_\_\_
3. Why is your invention necessary? \_\_\_\_\_
4. Why will your invention be a success? \_\_\_\_\_
5. When is the "right time" to share your invention with the public? \_\_\_\_\_
6. How was your invention made? \_\_\_\_\_

### INVENTION CONVENTION INSTRUCTIONS (MAJOR PROJECT)

Name: \_\_\_\_\_

**Objective**

Students will create original inventions and present them with poster advertisements at an Invention Convention.

**Directions**

To successfully complete this project, you will need to do the following:

1. Complete and turn in the following papers to your teacher (all stapled together and in order behind this "Invention Convention Instructions"):
  - "The Drawing Board" handout - This handout will guide you through the inventing process. Follow the steps carefully. Fill out all the information in complete sentences. (Use a different piece of paper for a rough draft so that your final copy is neat.)
  - "My Advertisement Strategy" - This handout will explain your strategy for selling your invention to consumers. Complete all the information - including the picture box.
2. **Working model of your invention** - Check with your teacher about size restrictions and other requirements before making your model. Be creative and neat! Many people will view your model at the Invention Convention.
3. **Poster advertisement** - Using the information on "My Advertisement Strategy" handout, create a poster advertising your invention. Remember, it will be displayed at the Invention Convention.
4. **"Things to Think About" assignment** - Your teacher will assign you an important job that will help in the preparations for the Invention Convention. Write the job and the names of the people who are sharing that job with you on the lines below:

Job: \_\_\_\_\_

People sharing my job: \_\_\_\_\_

**DUE DATES:**

1. Handouts - \_\_\_\_\_
2. Working model of your invention - \_\_\_\_\_
3. Poster advertisement - \_\_\_\_\_
4. "Things to Think About" assignment - \_\_\_\_\_

### MY ADVERTISEMENT STRATEGY

Name: \_\_\_\_\_

**Directions:**

1. Review the many strategies that are used to advertise inventions/products.
2. Choose at least one strategy to effectively sell your invention to consumers. List the strategy(s) you have chosen on the line below. \_\_\_\_\_
3. Create a poster advertising your invention that could be placed in a store window, making sure it:
  - Provides a slogan
  - Lists the inventor's and invention's name
  - Describes briefly the invention's purpose
  - Shows a picture or drawing of the invention
  - Presents the invention in an overall eye-catching way
4. Draw a small-scale version of your poster in the box below.



## INVENTION WORDSEARCH

Name: \_\_\_\_\_

PATENT  
ADVERTISE  
INVENTION  
INVENTOR  
PROBLEM-SOLVING  
CONTEST  
ACCIDENT  
NOBEL PRIZE  
TRANSPORTATION  
COMMUNICATION

MEDIA  
TOOLS  
FOOD  
CLOTHING  
FURNITURE  
MEDICAL  
AGRICULTURE  
MATERIALS  
CREATE  
PRODUCT

P	U	W	H	E	R	U	T	L	U	C	I	R	G	A
R	R	B	G	L	G	N	I	H	T	O	L	C	F	G
O	U	F	O	G	D	O	O	F	S	M	B	Z	A	B
B	U	I	E	R	U	W	O	I	K	M	E	E	C	F
L	Q	E	B	F	U	R	N	I	T	U	R	E	C	P
E	V	S	B	W	Q	R	Z	S	N	N	S	I	I	M
M	E	D	I	C	A	L	E	O	L	I	E	N	D	S
S	R	E	O	A	T	T	B	X	T	C	R	V	E	L
O	S	M	Q	L	N	E	C	R	E	A	T	E	N	A
L	R	T	O	O	L	S	E	P	A	T	E	N	T	I
V	E	Z	C	P	E	V	L	E	M	I	P	T	C	R
I	U	P	R	O	D	U	C	T	L	O	V	O	C	E
N	O	I	T	A	T	R	O	P	S	N	A	R	T	T
G	Z	U	U	H	X	V	G	R	D	V	D	G	P	A
E	M	H	V	X	H	R	T	O	E	A	I	D	E	M

ANSWER KEY

## INVENTION WORDSEARCH

Name: Answer

PATENT  
ADVERTISE  
INVENTION  
INVENTOR  
PROBLEM-SOLVING  
CONTEST  
ACCIDENT  
NOBEL PRIZE  
TRANSPORTATION  
COMMUNICATION

MEDIA  
TOOLS  
FOOD  
CLOTHING  
FURNITURE  
MEDICAL  
AGRICULTURE  
MATERIALS  
CREATE  
PRODUCT

U	W	H	E	R	U	T	L	U	C	I	R	G	A
R	B	G	L	G	N	I	H	T	O	L	C	F	G
U	F	O	G	D	O	O	F	S	M	B	Z	A	B
I	E	R	U	W	O	I	K	M	E	E	C	F	
Q	E	B	F	U	R	N	I	T	U	R	E	C	P
V	S	B	W	Q	R	Z	S	N	N	S	I	I	M
E	D	I	C	A	L	E	O	L	I	E	N	D	S
R	E	O	A	T	T	B	X	T	C	R	V	E	L
S	M	Q	L	N	E	C	R	E	A	T	E	N	A
R	T	O	O	L	S	E	P	A	T	E	N	T	I
E	Z	C	P	E	V	L	E	M	I	P	T	C	R
U	P	R	O	D	U	C	T	L	O	V	O	C	E
O	I	T	A	T	R	O	P	S	N	A	R	T	T
Z	U	U	H	X	V	G	R	D	V	D	G	P	A
M	H	V	X	H	R	T	O	E	A	I	D	E	M