

HANDS-ON HISTORY

LIFE WITHOUT LIGHTS, ELECTRIC LIGHTS

Objectives:

1. The students will be able to generate a list of ways that electricity and electric lights are used in homes, schools, and at play.
2. The students will be able to list and discuss sources of energy used today and in those used by early Americas.
3. The students will be able to select from a group of artifacts those that were used by early Americans, name the object, and discuss how it differs from contemporary light and heat creating objects.
4. The students will be able to discuss the implications of conservation today and in 18th century America.

Artifacts for exhibit and discussion:

Candles	light bulb
Candlestick	electric light switch
Candle mould	flash light
Candle suffers	led light
Lantern	solar light
Flint and striker	electric candlestick
Toaster, 20 th century	
Toaster, 18 th century	
Flat iron	
Spider skillet	
Mirror	
Hand fan	

Questions:

1. List some of the ways our environment at home, school, and play is illuminated. Sun, moon, lamps, light fixtures, computers, cell phones, electric toothbrush, stoves, ovens, street lights, stop lights, athletic fields, big windows to let in the sun light, lighting bugs
2. Do we live in a bright environment?
3. Where do we get the energy, or fuel for these lights? Coal, oil, solar, wind, water power.

Questions:

4. Be a time traveler back to 1795 when Raleigh was just being developed and Joel Lane was living. We use light bulbs for light. What would Joel Lane have used? Candle and had small windows since glass was expensive.
5. What is Lane's candle made of? Bees wax.
6. Where did he get the wax? What else could a candle be made of? Why didn't he go to Walmart and buy a candle? Wax or fats that will burn giving off heat and light. Benjamin Franklin's father was a "tallow chandler." Candle making machine invented in 1834.
7. Select an object that was used for making candles. Candle mould, dipping.
8. A lamp holds my light bulb, what holds Lane's candle? Candle stick.
9. Does your mother say, "turn out the lights when you leave a room?" How do you turn out a candle? Candle snuffer.
10. Now turn the candle back on. What would you use? No matches then, used flint and striker.
11. What kind of stove does your mother cook on? What would Joel Lane's cook have used? Wood in a fireplace.
12. How did Joel Lane's cook toast bread?
13. What disadvantages would cooking over an open fire have presented?
14. If you lived in Joel Lane's time, how would you have ironed your clothes? Flat iron
15. Would a cold iron press wrinkles well? How did they make it hot? Put in the fire in the fireplace.
16. Many of the artifacts used in this time period gave off a lot of heat. How did they keep cool? Opened windows and used hand fans.
17. Halloween is coming soon, but children in the 18th century didn't go trick or treating. What would it have been like to go from house to house in early Raleigh? No street lights, houses far apart, no cars.

18. What would you have taken to see your way in the dark? Lantern.
19. Select a toy an early American child would have played with. How is it different from one of your toys? No batteries, human energy, probably of wood .
20. Early Americans conserved energy and had less light in their lives because candles cost a lot. What can we learn from how they lived to help use conserve energy today?

HISTORICAL FACTS ABOUT LIUMINATION

1. Whale oil is a liquid wax.
2. Wax is found in plants and animals.
3. Paraffin wax is made from petroleum.
4. Whaling began in the late 18th century.
5. Whale oil lamps were an American invention.
6. The Romans were the first to use tallow, hard fat from cattle and sheep, with a wick, making the first candle.
7. Benjamin Franklin's father was a "chandler maker." He made and sold tallow candles.
8. Beeswax was first used for candles in the late middle ages.
9. The first candle making machine was invented in 1834.
10. Paraffin wax, made from coal and oil, was first produced in 1850.
11. The first light bulb was made in 1879.
12. Coal was mined in colonial times in Midlothian, VA.
13. Kerosene was developed in 1860 from coal and oil.
14. The Whitehouse was heated with coal during the administration of Thomas Jefferson.
15. Led bulbs have no filament and act as a semiconductor.