Name: ______________________________

H. Cecil Booth, the Vacuum Cleaner: 1901, England & the Hoover Portable, James Murray Spangler and Mr. and Mrs. Hoover, Ohio

Part One: Watch the H. Cecil Booth video and answer the questions.


Part One Questions: Based upon the video, answer the following questions:

1. Booth was an _______ by trade designing _______ , _______ , and _______ for amusement parks.

2. While visiting London’s _______ _______ in _______ , Booth watched an _______ _______ inventor demonstrate a fascinating cleaning tool.

3. The _______ cleaning system used _______ air to blow _______ and _______ into a receptacle.

4. Booth thought that wouldn’t it be easier by sucking dust rather than blowing it to the floor. He tested the idea on a _______ of a local restaurant by placing a _______ on the fabric and putting his mouth on it and inhaling.

5. After seeing all the _______ collected on his _______ , he struck on the stuff of genius.

6. Booth’s invention of the vacuum was the first _______ _______ version.

7. Booth first vacuum was driven by an _______ _______ and carried around on a _______ by _______. It also used a _______ pump to draw _______ through the machine.

8. The Royal Family asked Booth to clean the _______ _______.

9. Eventually, Booth replaced the _______ _______ engine with an _______ _______ engine.
In 1898, an aspiring young inventor, H. Cecil Booth, attended an exhibition at London’s Empire Music Hall, where an American was demonstrating a new “dust-removing” machine. A metal box topped with a bag of compressed air, the device forced air down into a carpet, causing dirt and dust to billow up into the box. Booth was unimpressed. A lot of dust missed the box and resettled on the carpet. Questioning the inventor about the possibility of sucking up dust instead, Booth was told that many people had tried but none had succeeded.

Booth thought about the suction for several days. Then, as he later wrote of his own invention, “I tried the experiment of sucking with my mouth against the back of a plush seat in a restaurant in Victoria Street”. He choked violently on dust but was inspired. The secret, Booth realized, would be to find the right kind of filtering bag to pass air and trap dust. At home, he lay on the floor and, with various kinds of fabrics over his lips, experimented. Dust seemed to be collected nicely by a tightly woven cloth handkerchief. He patented his suction cleaner in 1901.
The first commercial vacuum cleaner was huge, the size of a modern refrigerator. With a pump, a dust-collecting chamber, and the power unit, it had to be transported on a dolly, pulled along London streets from an office to a theatre to a private home. To operate the cleaner, one man steered the dolly while another manned the long, flexible hose. Even when the first home models were later constructed, two people would still be required to operate them—usually the housewife and a daughter.

Versions of H. Cecil Booth’s vacuum machine were in use in the United States during the early years of this century, some of them superior in design. They were a luxury enjoyed by the wealthy, and their operation required two servants. The idea for a small, handy portable model came to James Murray Spangler, an aging, unsuccessful inventor with a serve allergy to dust.

In 1907, debts forced Spangler to accept a position as a janitor of a department store in Canton, Ohio. The store seemed to have miles of rugs and carpeting to be cleaned, and the dust stirred up by the mechanical sweeper issued to Spangler set off paroxysms of sneezing and coughing. He could not afford to quit. With necessity motivating invention, Spangler began to experiment with devices for “dustless cleaning”.

His first makeshift vacuum used an old electric fan motor placed atop a soap box, which had its cracks sealed with adhesive tape. The dust bag was a pillow case. Spangler patented that invention in the spring of 1908 and with loans from friends formed the Electric Suction Sweeper Company. However, his finances still worsened until he sold a cleaner to Susan Hoover, the wife of a prosperous Ohio executive who manufactured leather goods and automobile accessories.

Mrs. Hoover was impressed with the machine. So, too, was her husband, William Hoover, who had been contemplating expanding his business. Before the close of 1908, William Hoover had permanently solved Spangler’s financial problems by purchasing rights to manufacture the suction sweeper. In one corner of Hoover’s leather goods factory, three technicians assembled five vacuums a day.

To market the product, Hoover placed a two-page advertisement in the December 5, 1908, issue of the *Saturday Evening Post*. The copy offered readers the chance to use an electric suction sweeper for a free ten-day home trial. Hundreds of homemakers responded, and by a letter Hoover notified each one that her trial sweeper was being delivered to a local store. He then wrote the selected store owners, offering them a *commission* for every machine a home owner purchased.

The vacuum was a landmark homeware invention. It’s most important feature was that for the first time in history of housekeeping, dust was removed from the great dust-collectors—rugs, carpets, curtains, and upholstered cushions—while the items remained in place in the house. Previously, to prevent dust from resettling on furnishings, items were hauled outdoors, hung over lines and leaned against fences,
and whipped. This annual ritual, spring cleaning, could often be a week-long chore that disrupted a family’s routine. With the arrival of the vacuum cleaner, every daily or weekly cleaning became in effect a spring cleaning.

Part 1: Based upon the reading, answer the following questions:

1. Based upon the context, what do you think would be a synonym for the word, billow?

2. H. Cecil Booth experimenting with different types of air filters by using what as a means for suction?

3. What clothe worked best as a filter and collector of dust and dirt?

4. The size of Booth’s vacuum was the equivalent size to what?

5. Two men had to operate Booth’s vacuum. Explain what each man had to do.

6. What type of consumers owned a vacuum?

7. In America, James Murray Spangler was working on creating what?

8. In 1907 because of high debts, Spangler worked where and doing what?

9. Describe the design and operation of Spangler’s makeshift vacuum.

10. Based upon the context, what do you think would be a synonym for the word, contemplating?

11. Who purchased the rights to Spangler’s vacuum?

12. How was the Suction Sweeper marketed?
13. Based upon the context, what do you think would be a synonym for the word, 

**commission**?

14. What was the most important feature of the Suction Sweeper in regards to actually 

   cleaning?

15. Based upon the context, explain what **ritual** means.