

Name: _____

Find the Inventions

Grades 5th – 8th

People often think of machines when they hear the word “invention.” An invention can also be a new method or process developed by experimenting. Sometimes inventions are just for fun, but often they solve problems or make tasks easier. Hastings Museum houses many inventions that improved life for early settlers. Other inventions on display helped create the modern world. Find the inventions below and answer the questions by reading labels and studying the exhibits.

Lower Level

Find the *Clock* exhibit.

1. When did European watchmakers begin to experiment with cut gemstones as a replacement for metal bearings? _____
2. What do watchmakers use today? _____

Find the *Firefighting Equipment* exhibit.

3. What do you think was the purpose of the Eveready Smoke and Ammonia Helmet?

4. Can you guess the reason for the metal cylinder on the back of the helmet?

5. Would the Eveready Helmet have worked well? _____ Why or why not?

Find the *Transportation* exhibit.

6. When was the Sears Motor Buggy made? _____ How much did it cost? _____
7. The 1912 Rauch and Lang car was popular with women. Give two reasons why.
1. _____ 2. _____
8. What powered the Rauch and Lang car? _____

Upper Level

Find the **Water** and the **Windmill** exhibits within the *People on the Plains* gallery.

9. An early invention for getting water from a well was the windlass well. What kind of power raised and lowered the water bucket? _____
10. Windmills harness the power of the wind to pump water from a well. When did the railroads bring windmills to Nebraska? _____ Why? _____
11. In what decade did windmills become popular with farmers? 19 __ 's.

Find the **Barbed Wire** exhibit.

12. In the early days of settlement, pasturelands were open range. Cattle owners did not build fences to keep animals penned; instead, the farmers built fences to keep cattle out. Why was barbed wire an ideal form of fencing? _____

13. When was barbed wire patented? _____ What was the first successful barbed wire called? _____

Find the **Tractor Farming Then and Now** exhibit.

14. In the 1890's, a steam tractor could plow _____ acres per day. Today, a modern tractor can plow _____ acres per day.

15. What was the purpose of the grasshopper plow? _____

16. How is a grasshopper plow different from a regular plow? _____

Find **The Railroad** exhibit.

17. One of the most important inventions for the settlement of Nebraska was the railroad. By 1866, the Union Pacific railroad carried goods and passengers as far west as the town of _____, Nebraska.

Find the exhibit called **The Open Road**.

18. The automobile changed the way people lived, especially farmers who could travel to town and markets much more easily. It also created a need for all kinds of other car-related inventions. Name two of the car-related items in this case.

1. _____ 2. _____

Find the **Communications** exhibits.

19. The invention of the telegraph, telephone, radio and television made it possible for communication over long distances. When was the first transcontinental telegraph line completed? _____ What was the name of the company?

20. When did telephone service come to Hastings? _____ How many households had telephones? _____

21. What was the name of Hastings' first radio station? _____ When did it begin?

22. When did television station KHAS in Hastings begin broadcasting? _____

23. Give the brand name _____ and the date _____ of one of the TV sets on display.

Answer Key

1. Late 1600s
2. Corundum
3. To protect a firefighter from smoke and toxic ammonia fumes (Prior to modern refrigeration, ice-making plants used ammonia to chill huge vats of water. In case of fire, the ammonia often escaped into the air as poisonous fumes that could be fatal when inhaled.)
4. The metal cylinder contained an air filter to help clean the air the firefighter breathed.
5. No; the filter tank was too small to work for more than a few minutes, and the helmet design did not fit well enough to keep out much of the poisonous fumes or smoke.
6. 1909; price on ad is \$395, and price range on label is \$325 - \$495
7. The car started with a switch rather than cranking, had expensive upholstery and details that looked nice and it was easy to drive.
8. Electric batteries (weighing 1000 pounds)
9. Hand-power (assisted by a rope and pulley system)
10. 1860's; to supply water for the steam locomotives
11. 1870's
12. The plains lacked natural fencing materials, barbed points stopped cattle from breaking through the fences, and it was fairly easy and inexpensive to use.
13. 1867; Diamond Point of Thorny Fence
14. 34-45; 50-80
15. Grasshopper plows cut sod strips for building sod houses.
16. A regular plow cuts a furrow or groove through the soil for planting, whereas a grasshopper plow cuts horizontally underneath a layer of sod (grass, roots and soil) and turns it over.
17. Kearney
18. Clark car heater, gasoline stations, car heaters, auto jacks, tires, spark plugs, tire patch kits, highway maps, license plates, etc.
19. 1861; Western Union
20. January 1881; 35
21. KFKX; 1923
22. 1956
23. Panasonic, 1986; Delco, 1948; RCA Victor, 1947; RCA Victor, undated color TV