Development of cameras

Daguerreotypes
Early cameras, *daguerreotypes*, formed images on silvered copper plates that were to be developed with mercury vapour, but the double box produced by Giroux in 1839 required very long exposure times. Soon, improvements were introduced, and new cameras invented, for example by Chevalier, Gaudin Nouvel and Voigtländer.

Calotypes
In the same period, English scientist Talbot published the first description of photography. He developed a two-step process for creating photographs on paper using *calotypes*, negative prints that allowed the image to be re-touched and to create many duplicates, which daguerrotypes didn't allow. That was the basis of modern photography.

American mass production of plates
In the mid-19th new photographic materials and the use of a bellows• for focusing made the previous models obsolete. In the last decade of the 19th century, however, the Americans started a mass production of plates, whose sizes became internationally standardised.

Films for exposures
In the 1880's the first paper and celluloid films were produced by G. Eastman, whose first camera, the *Kodak*, was sold with films for 100 exposures, and then other new models, like the *Brownie*, which introduced the concept of the *snapshot*.•• Despite the popularity of film cameras, plate ones continued to be used, as their prints were higher in quality. Films were crucial for the birth of cinematography, as they made the capture of motion possible.

Instant-picture cameras
Technological improvements continued, but a really new camera only appeared in 1948, the Polaroid instant-picture camera, Model 95, which also printed photos in less than a minute.

Other innovations were automatic exposure in the 1960's and analogue electronic cameras in the 1980's. They never became very popular, though, because images were poor, and printing required expensive equipment.

Digital cameras
A real difference was made recently by digital cameras which saved photos on digital memory cards or internal storage, and admitted wireless communication means, such as Wi-Fi or Bluetooth, to transfer, print, or share photos, also available on smartphones.

• A *bellows* is part of a camera, which is similar to an accordion and can be expanded to make the lens move for focusing.

•• Snapshots are photographs that are shot quickly, often with unprofessional cameras, and often imperfect. They are usually taken to fix images of everyday life, family, friends, etc.

1 Write the main idea contained in each of the paragraphs of the passage about cameras.

1. 1st .....
2. 2nd .....
3. 3rd .....
4. 4th .....
5. 5th .....
6. 6th .....

2 Using your knowledge and the Internet, match the first part of the sentences to the second one.

1. In a pinhole camera light… ☐
2. Gaudin's *Nouvel Appareil* was the first to use… ☐
3. Voigtländer's camera used a lens specifically… ☐
4. By 1837 Daguerrote was able to fix… ☐
5. Negatives reverse all values in the photograph: … ☐
6. The first permanent photograph of a camera image was made in 1825 by J.N. Niépce using… ☐
7. The first camera to be commercially produced… ☐
8. The collodion wet plate process that required sensitising thin plates and exposing them in the still wet camera… ☐
9. One of the three daguerreotype cameras produced in America in the 1850's, … ☐
10. Mechanical shutter mechanisms incorporated in cameras… ☐
11. The first camera featuring automatic exposure was the… ☐
12. Fuji sold the first portable digital camera, the DS-X, … ☐

a. a rotating metal disc allowing different quantities of light to enter.
b. black shows up as white and vice versa.
c. designed for portraits.
d. the Lewis-type, utilized bellows for focusing.
e. allowed much shorter and accurately timed exposures times.
f. in Japan in December 1989.
g. automatic Super Kodak Six-20 pack of 1938.
h. was the Giroux daguerreotype camera.
i. the images with a common salt solution.
j. a sliding wooden box camera made by Ch. and V. Chevalier in Paris.
k. gradually replaced the daguerreotype during the 1850s.
l. enters a dark box through a small hole and creates an inverted image on the opposite wall.