

How William Harvey explained circulation

Name: _____ Date: _____

Read about how William Harvey's observations and experiments led him to understand and explain how the circulatory system works.

William Harvey was an English doctor who lived 400 years ago. At that time, doctors and scientists thought that the lungs moved the blood around the body and that the body used up the blood for energy as it flowed to the different organs. They also thought the heart's job was to control our feelings. Harvey observed water pumps in London which gave him the idea that the heart pumped blood around the body. He studied the heart and blood vessels and carried out experiments. He was very thorough in his work and spent many hours repeating experiments and going over every detail. He also read the work of early doctors to help him build up his own ideas.

Harvey's results showed him that the heart works by muscle contraction to pump blood to body organs and that blood is carried away from the heart by arteries and returns to the heart through veins. He observed that in one hour the heart pumps more than the body's weight in blood. This showed him that the body did not use up the blood that flowed to body organs. Harvey explained how blood flows in one direction throughout the body and that gases enter and leave the blood in the lungs.

William Harvey's work became so admired that he became the court physician to King Charles I, who took a great interest in his work on circulation.

1 What incorrect ideas did doctors and scientists have about circulation 400 years ago?

2 What observation made William Harvey start to think about how the heart works?

3 a How did Harvey obtain evidence about how the circulatory system works?

b Why did he repeat his experiments?

4 a How did Harvey show that the body does not use up the blood that flows to the organs?

b Name **three** other discoveries that William Harvey made about the circulatory system.
