

Accidental discoveries: Pacemaker

Rhythm of the heart

Sometimes, if somebody's heart doesn't beat quite right, they have a 'pacemaker' fitted. It helps to keep their heart beating at just the right rhythm.

The pacemaker was an accidental invention. An engineer called Wilson Greatbatch was building something to record the rhythm of people's heart beats. He reached into his tool box and accidentally pulled out the wrong bit of kit. He fixed it to his circuit. The circuit 'pulsed' for 1.8 milliseconds and then stopped for one second. As luck would have it, that was just the right rhythm needed to make a pacemaker.

You will need: a partner, a wrist heart monitor or timer, a calculator.

What you do

Sit down and keep calm while you read these instructions.

When your partner is feeling relaxed, follow the instructions which come with a wrist heart monitor to find their resting heart rate.

If you don't have a heart monitor, you need to find the pulse at their wrist: ask them to rest their arm on a table or desk with the palm up. Use the tips of your first two fingers to find their pulse about 2 cm below the base of their thumb. Have a look at the picture to help.

Count the number of beats in 15 seconds. Multiply by four to get the number of beats per minute.

How many beats is this per second?

How does this compare with Wilson's circuit?

