Heart rate graphs

Heart rate is a measure of the number of times the heart beats in a minute. This is usually between 50 and 100 beats per minute.

Heart rate goes down when the body needs little oxygen. It goes up when the body needs a lot of oxygen. You can try this out by running or skipping for one minute! Heart rate can also go up under stress, for example if the person is surprised or scared.

The highest number of times that a heart can beat in a minute is different for different people. For some people the maximum heart rate can be as high as 220 beats per minute.

The heart rate graphs show information about each astronaut in the ‘Astronaut trump cards’. They show the maximum heart rate recorded during each hour of an eight hour simulated space flight.

Look at the schedule below together with the heart rate graphs and the Astronaut trump cards.

1st hour launch of spaceship  
2nd hour spacewalk  
3rd hour maintenance of spaceship  
4th hour rest  
5th hour fitness class  
6th hour emergency in spaceship  
7th hour dinner  
8th hour landing on Earth

Which astronauts would you choose in your space crew based on the information in the heart rate graphs?

What do the graphs tell you about the strengths of your chosen astronauts?

Which roles might you give to each astronaut in a real space mission?

Four of the graphs do not show who they belong to. Look at those graphs together with the ‘Astronaut trump cards’. Who do you think each graph belongs to? Discuss with your group and decide.
Heart rate graphs

Hanna Happy

Geraint Great

Andrew Adventurous

Eko Energetic

Iwan Independent

Neena Nice

Cerys Creative

Ffion Fearless

Maximum heart rate each hour

Heart rate (beats per minute)

Time (hours)
Heart rate graphs

Maximum heart rate each hour

Penny Positive

Karim Cool

Carl Calm

Enlai Efficient

Heart rate (beats per minute)

Maximum heart rate each hour

Time (hours)

Heart rate (beats per minute)

Time (hours)

Heart rate (beats per minute)

Time (hours)

Heart rate (beats per minute)

Time (hours)

Heart rate (beats per minute)

Time (hours)