



Rolls-Royce

Cub Scout Scientist Badge

Investigating pulse rates



Leader's notes

Investigate what happens to your pulse rate before, during and after exercise

You will need:

- A stop watch (or a watch with a second hand)
- Pencil
- Paper.

Safety:

None.

How to take your pulse:

The easiest place to find your pulse is on your wrist. With your arm bent at the elbow, hold your hand out with the palm up. Using your other hand, place your first two fingers together lightly on the inside of your wrist, over the vein (about where you would wear your watch). If you can't feel your pulse, move your fingers around gently as you might not be quite over the vein.

Once you have found your pulse, you need to count how many times it beats in one minute. Get a friend to use the stop watch and time 30 seconds, whilst you concentrate on counting the beats. Then times the number of beats by two to find out how many beats there are in one minute.

Investigating your pulse rate

1. Sit quietly and relax for five minutes. Then find your pulse, start the clock and count the number of beats in thirty seconds. Times by two to find the number of beats in one minute and write this down. This is your resting pulse rate.
2. Next, run around for five or ten minutes. You need to exercise quite hard until you start to breathe more heavily. Skipping is a good way of doing this.
3. Take your pulse again straight away and write down the number of beats in one minute (the same way as before).
4. Sit down and relax for two minutes and then take your pulse again, writing down the number of beats in one minute. You could do a wordsearch!
5. Rest again for two more minutes and take your pulse again and write it down.

You should now have four numbers written down.

What do your results look like?

Compare your pulse rates with the others in your group.

Do they look the same?

What is similar?

How does it work?

- Taking your pulse measures how fast your heart is beating. Each time your heart beats it pushes blood through the arteries which you can feel as a pulse in your wrist.
- You should find that the first time you took your pulse (resting pulse) it was quite low. The second time (after you had been exercising) your pulse rate should have been much higher. This is because your body needs more oxygen when you exercise. Oxygen is carried around the body in your blood, so the heart works harder to pump your blood around when you exercise.
- The third time, you will probably find your pulse was lower than just after exercising, but not as low as your resting rate.
- The fourth pulse should have come down a bit more, nearer to your resting pulse rate.

Pulse rate varies from person to person and also depends on your age and how fit you are. Doctors use your pulse rate to help find out how fit and well you are.

Investigate what happens to your pulse rate before, during and after exercise

Name	
Cub Pack	
Write down your pulse in the spaces. My resting pulse was: 97 My pulse after exercise was: 120 My pulse after resting for two minutes was: 110 My pulse after resting for another two minutes was: 97	
Extras: When was your pulse the fastest? <i>When I exercised</i> Why do you think it was faster? <i>My heart needed to pump blood faster to give me energy/oxygen</i> If you have time try out different types of exercise and see which ones make your pulse the fastest. The exercise that made my pulse the fastest is: <i>Star jumps</i>	

Darwin's scientific wordsearch

Solutions

Name: Date:

S	I	C	U	H	K	V	D	H	R	S	Z	A	I	O
Y	Z	L	E	H	H	L	K	R	N	U	A	H	F	J
S	E	E	D	C	Z	C	Q	Y	C	O	P	T	B	B
S	U	O	N	O	S	I	O	P	S	R	B	I	R	E
R	V	I	L	T	P	A	D	A	C	O	H	I	J	L
P	F	L	A	M	M	A	M	R	I	V	R	R	S	P
B	P	O	K	A	I	P	J	S	E	I	A	X	L	P
I	I	L	F	T	A	Q	U	G	N	N	I	G	O	A
V	N	N	A	V	L	P	X	T	T	R	N	D	T	E
C	T	V	O	T	E	B	L	F	I	A	F	Y	H	N
N	L	M	E	I	Y	A	N	B	S	C	O	R	U	I
A	I	L	I	R	T	P	R	Y	T	C	R	O	P	P
F	T	W	O	A	T	U	U	T	G	R	E	E	X	O
O	O	A	R	M	M	E	L	S	H	W	S	H	F	L
S	M	F	T	A	T	A	B	O	P	Q	T	T	L	I
S	X	U	F	I	D	V	L	R	V	O	U	O	Z	J
I	C	A	K	S	B	Y	U	L	A	E	I	A	H	V
L	I	E	Y	X	F	A	Z	N	X	T	Z	T	K	S
C	S	U	G	W	H	P	H	W	E	L	E	F	A	E
E	S	I	O	T	R	O	T	K	G	V	A	U	C	C

ADAPT

CARNIVOROUS

DARWIN

EARTHQUAKE

EVOLUTION

FINCH

FOSSIL

HABITAT

INVERTEBRATE

LLAMA

MAMMAL

PINEAPPLE

PLATYPUS

POISONOUS

RAINFOREST

SCIENTIST

SEED

SLOTH

THEORY

TORTOISE