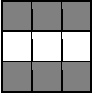


Part B

Systematic investigation in biology

12. Execution (Time 30 minutes)

You are going to carry out an investigation to find out:
How is your pulse changing when doing static and dynamic muscle work, from resting pulse to working pulse and back to resting pulse?



In your execution, you are going to:

- work according to your plan or the prepared experiment instruction.
- consider the safety instructions your teacher has informed you about.
- take notes on your measurements.

Part B

Experiment instruction for a systematic investigation in biology

You are going to carry out an investigation to find out:
How your pulse changes when doing static and dynamic muscle work, from resting pulse to working pulse and back to resting pulse.

Material:

Stopwatch or similar, ruler and calculator.

Risks with the experiment:

Consider the safety instructions your teacher has informed you about.

Method of investigation:

Resting pulse

1. Calculate your resting pulse. See instruction on pulse measurements in the planning task.

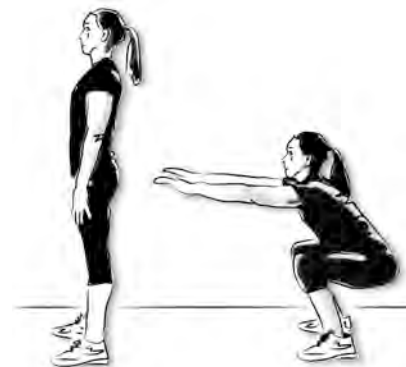
Static muscle work

1. Stand against a wall with your legs in 90° angle.
2. Start the timekeeping and stay in this position as long as you can, or maximum 5 minutes.
3. Stop the timekeeping and take notes on time.
4. Calculate your pulse after the work.
5. Repeat the pulse calculation after 1 minute, 2 minutes, 3 minutes and so on until your pulse is back to resting pulse.



Dynamic muscle work

1. Do knee-bending for as long time as the static work.
2. Calculate your pulse after the work.
3. Repeat the pulse calculation after 1 minute, 2 minutes, 3 minutes and so on until your pulse is back to resting pulse.

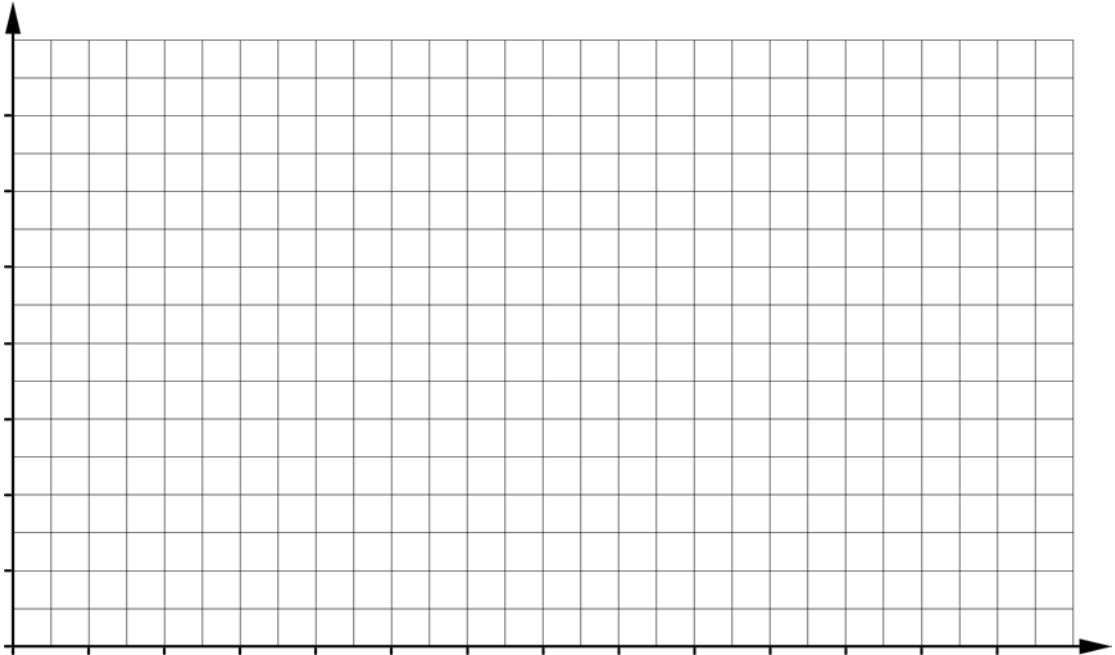
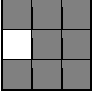


Part B

Systematic investigation in biology

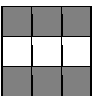
13. Evaluation (Time 30 minutes)

- a) Show the result of your pulse changes, when doing static **and** dynamic muscle work, by drawing in the diagram.



- b) From which muscle work, static or dynamic, does it take longer to regain resting pulse?

- Draw a conclusion from your result and answer the question.
- Explain the conclusion using your biology content knowledge.



Part B

Systematic investigation in biology

- c) One way to improve the investigation is to measure the pulse with a pulse meter.
- Give **one** suggestion for **another** improvement of your investigation to gain a more reliable result.
 - Explain why your improvement would give a more reliable result.

