

Training principles

Do it now -

1. State each zone and the % of maximum HR for each zone of the training pyramid.
2. Give an example of a exercise for each zone.



GRASP IT - explain

Sammy is is 18 years old and plays football. She wants to improve her aerobic endurance so that she can last the game without getting tired. What is her target HR for this? (3 marks - show your working out)



THINK IT - Understanding (target 5/6):

Christopher is training in the gym. He wants to develop his strength so wants to work in his anaerobic zone. Work out his target HR and suggest training he should do in order to improve this (5)

Do it now answers -



1. State each zone and the % of maximum HR for each zone of the training pyramid. Aerobic – 60-85%, anaerobic zone 85-95% speed zone 95-100%
2. Give an example of a exercise for each zone. Aerobic – long distance running, anaerobic – weights, fast running, speed zone - sprinting

GRASP IT - explain

Sammy is is 18 years old and plays football. She wants to improve her aerobic endurance so that she can last the game without getting tired. What is her target HR for this? (3 marks - show your working out)

$$220-18=202\text{bpm}$$

$$0.6 \times 202 = 121.2 = \underline{121\text{bpm}} \quad 0.85 \times 202 = 171.7 = \underline{172\text{bpm}}$$



THINK IT - Understanding (target 5/6):

Christopher, 22 is training in the gym. He wants to develop his strength so wants to work in his anaerobic zone. Work out his target HR and suggest training he should do in order to improve this (5)

$$220-22 = 198\text{bpm}$$

$$0.85 \times 198 = 168.3 = 168\text{bpm}$$

$$0.95 \times 198 = 188.1 = 188\text{bpm}$$

He should do **weight training** if he wants to improve his strength. Using **heavy weights and low reps** will improve strength.

FITT FOR SPARV R&R

Intention: To know Training principles

Frequency – **how often** you train per week – E.G Tracy trains **3** times a week

Intensity – **how hard** you train – e.g. Tracy works at **140bpm** and in the **aerobic zone**.

Time – how long you train for – e.g. Tracy **spends 30 minutes**

Type – what training method you chose to do (e.g. continuous, interval, speed etc) e.g. Tracy does **circuit training**

Training principles – exam questions

Know it – state (1 mark questions)

1. Which training principle means how hard you train? (1)
2. Johnny does circuit and weight training. Which training principle does this refer to? (1)
3. Megan spends 30 minutes running without stopping. She does this 4 times a week. Which training principles does this refer to? (2)

GRASP IT – explain

Gregg does circuit training twice a week, consisting of 10 stations doing a mixture of weights and cardio exercise. He spends 40 seconds on each station and has a 20 second rest between stations. EXPLAIN the training principles Gregg uses to improve his aerobic fitness (4)

THINK IT - Understanding (target 5/6):

Tim plays tennis at a high level. He currently trains 3 times a week. He does continuous training and will run for 30 minutes without stopping. After 3 weeks he finds this too easy. He wants to improve his aerobic endurance so that he can last longer in the game without tiring. Using the FITT principles explain what Tim could do to ensure he makes progress. (8 marks)

Training principles – exam questions – ANSWERS – Self assess your work

Know it – state (1 mark questions)

1. Which training principle means how hard you train? (1) **INTENSITY**
2. Johnny does circuit and weight training. Which training principle does this refer to? (1) **TYPE**
3. Megan spends 30 minutes running without stopping. She does this 4 times a week. Which training principles does this refer to? (2) **TIME AND FREQUENCY**

GRASP IT - explain

Gregg does circuit training twice a week, consisting of 10 stations doing a mixture of weights and cardio exercise. He spends 40 seconds on each station and has a 20 second rest between stations. EXPLAIN the training principles Gregg uses to improve his aerobic fitness (4)

Gregg does circuit training – this is the **type** of training (1). He does it **twice** in the week which is his **frequency** (1).

The **time** he spends on the stations is **40 seconds** (1)

He uses **weights and has a 20 second rest** which is **intensity** because it refers to **how hard he is working**. (1)

Training principles – exam questions

THINK IT - Understanding (target 5/6):

Tim plays tennis at a high level. He currently trains 3 times a week. He does continuous training and will run for 30 minutes without stopping on a treadmill. After 3 weeks he finds this too easy. He wants to improve his aerobic endurance so that he can last longer in the game without tiring. Using the FITT principles explain what Tim could do to ensure he makes progress. (8 marks)

Tim currently trains 3 times a week. He could increase the **frequency** of training (1) to 4 or 5 times a week to improve fitness (1).

He could increase the **time** of his sessions (1) to 40 minutes each time (1)

Tim currently does continuous training, he could change the **type** of training (1) and do some different training such as weight training, circuit training or he could run outside instead of on a treadmill (1)

Finally Tim could increase his **intensity** (1) by running with weights or running on incline (1)



Additional training principles



Do it now

Activity:

What is FITT?

Can you give an example of each letter? (4)

Key Words

Specific, Progressive Overload,
Adaptation, Reversibility,
Variation, Individual Needs
Rest and Recovery

Stretch it:

Tia is a badminton player and wants to improve her muscular strength through weight training. She trains twice a week using 4-10kg weights. Her training sessions usually lasts 40 minutes and she rests for 3 minutes between each exercise.

Using the FITT principle explain how Tia can make progress with her fitness (4)



Additional training principles



Do it now

Activity:

What is FITT? **FREQUENCY, INTENSITY, TIME, TYPE**

Give examples (4)

Frequency – how often you train per week e.g. 3 times a week

Intensity – how hard you train – e.g using heavier weights

Time – How long, e.g training for 30 minutes

Type – The type of training you do – e.g. weight training

Stretch it:

Tia is a badminton player and wants to improve her muscular strength through free weight training. She trains twice a week using free weight weighing 4-10kg. Her training sessions usually lasts 40 minutes and she rests for 3 minutes between each exercise.

Using the FITT principle explain how Tia can make progress with her fitness (4)



Tia trains twice a week, she could increase her frequency to three times a week. She could increase the intensity by increasing the weights she is using.

She currently trains for 40 minutes, she could up this to an hour and reduce her rest periods to make it harder. Finally she could change the type of exercises she does for example rather than free weights she could use resistance weights.

Additional principles of training

SPARVI R&R

Intention: To know additional Training principles

Specific – is the training **suitable to your age, gender, sport and skill ability and goals.**

Progressive Overload – **Gradually making it harder** ensuring you make progress.

Adaptation – The body **adapts to training** by getting **stronger and fitter.** Adaptation occurs during the recovery stage.

Reversibility – if training stops or if the intensity isn't sufficient then training effects are **reversed.** (lose fitness/adaptation doesn't happen)

Variation – **changing/varying the training** so that you don't get bored

Individual needs – the programme should be designed to suit individual needs and **goals.** (links to specificity)

Additional principles of training R&R

Intention: To recap and revise Training principles

Rest and Recovery

Important so that the body can **adapt and recover**. Important so that you **reduce the chance of injury** and gives the **body time to recover** from the training.

It is also important because it is during the rest and the recovery that **adaptation occurs**.



Additional Principles of Training

What specific needs/ individual needs might people have?

Age
Gender
Disabilities

Their sport or position (e.g sprinters would require more speed training whereas long distance runners would need more aerobic endurance training).
Their fitness goals (e.g – A footballer might feel their speed is good but that they want to improve their strength).



E.G – A boxer would need to choose training based around strength, power and muscular endurance so may choose to do weight training.



Additional Principles of Training

Bobby wants to take up running to improve his aerobic endurance. He starts with a 5 minute run. How might he use progressive overload to ensure he progresses?

Bobby could use progressive overload by gradually building up the time he runs for. For example next week he might try to run for ten minutes and then the week after he could build up to 15 minutes.

E.G – If you are using weights in the gym you might **gradually** increase the weight you lift.



Additional Principles of Training

True or False – Adaptation is when the body gets fitter and stronger.
Adaptation occurs during rest stages.

Give two reasons why reversibility might occur (2 marks)

Reversibility happens if you stop training. This could be due to illness, injury or lack of motivation!



Additional Principles of Training

Why is Variation important when training? (1 mark)

In circuit training how could you apply variation? (2 marks)

Variation is important so that you don't become bored.

Change the exercises
Change the equipment.

Change the amount of time spent on exercises.

Change the type of circuit – e.g. aerobic exercises – muscular exercises – skill based stations.



Additional Training principles – exam questions

Know it – state (9 marks in total)

1. When the body is getting fitter and stronger from doing weight training which additional training principle does this refer to? (1)
2. Why is rest and recovery important when training? (2)
3. Why is variation important to consider when training? (1)
4. Sally is 18 and an elite athlete in Javelin. State her specific/individual needs she will need to consider in her training (2)
5. Harry does weight training for 6 weeks. How can he apply progressive overload to his training? (1)
6. Freddie has sprained his ankle and cannot train for 3 weeks. What additional training principle will he experience? (1)

GRASP IT - explain

**Attempt the challenge exam question on the next page.
(don't worry if you find this too hard)**

Training of principles Super Challenging Question

Below is a circuit training session consisting of different exercises. Imagine you want to do this training over 6 weeks to develop your fitness. How can you apply ADDITIONAL training principles to the circuit to ensure you get fitter? (8)

squats

Sit ups

Shuttle runs

Chest press with weights

Bicep curls

Skipping

Press ups

Additional Training principles – exam questions – answers

Know it – state (9 marks in total)

1. When the body is getting fitter and stronger from doing weight training which additional training principle does this refer to? (1) **Adaptation**
2. Why is rest and recovery important when training? (2) **To reduce the chance of injury (1 mark) To allow time for adaptation (1 mark)**
3. Why is variation important to consider when training? (1) **so the athlete doesn't become bored.**
4. Sally is 18 and an elite athlete in Javelin. State her specific/individual needs she will need to consider in her training (2) **Her age and her ability is elite therefore her training can be harder/more intense**
5. Harry does weight training for 6 weeks. How can he apply progressive overload to his training? (1) **Increase the weight used**
6. Freddie has sprained his ankle and cannot train for 3 weeks. What additional training principle will he experience? (1) **Reversibility**

Answer

Below is a circuit training session consisting of different exercises. Imagine you want to do this training over 6 weeks to develop your fitness. How can you apply ADDITIONAL training principles to the circuit to ensure you get fitter? (8)

squats

Sit ups

Shuttle
runs

Chest press
with weights

Bicep curls

Skipping

Press ups

Firstly you should consider individual needs (1) by considering the age, gender and ability so that you can see how hard you need to work (1).

You should apply progressive overload (1) by gradually making the exercises harder for example using heavier weights (1) to ensure you get fitter.

You should try to use variation (1) by varying the exercises so you don't become bored (1)

Finally you should use rest and recovery (1) to allow your body time to adapt (1) and so you don't become fatigued/injured (1)