Intermediate Coaching General Principles

Worksheet 8 – Introduction to physiology

1. **List the fitness component (ie speed, strength, power, endurance, flexibility) of each of the following activities:**

Lifting heavy weights at the gym	
Riding a push bike for 45 minutes at an easy pace	
Carrying a large heavy log	
Taking a stretching class	
Swimming as fast as you can for 25 metres, then jumping out and walking back. Repeat 8 times.	
Going for a 30 minute, slow continuous jog	
Jumping explosively	
Doing track session of 6 x 20 metre sprints with a slow walk back between each one	

2. Categorise each of the following activities as *predominantly* aerobic, lactic anaerobic or alactic anaerobic (i.e. select the MOST CORRECT for each activity):

Long, slow easy rowing	☐ Aerobic	☐ Anaerobic
Sprinting fast up a short, steep hill	☐ Aerobic	☐ Lactic anaerobic
Lifting a heavy weight overhead four times	☐ Aerobic	☐ Alactic anaerobic
Enjoying a leisurely 20 minute walk around your local area	☐ Aerobic	☐ Anaerobic
Doing a light warm up with your soccer team	☐ Aerobic	☐ Anaerobic
Seeing how far you can run at maximum speed in 30 seconds	☐ Aerobic	☐ Lactic anaerobic
Doing a basketball free throw	☐ Aerobic	☐ Alactic anaerobic
A tennis serve	☐ Aerobic	☐ Alactic anaerobic

3. Using the H.E.L.P.P. system for monitoring the intensity of exercise, categorise each of the following activities *(note: the first column is completed for you as an example)*:

H.E.L.P.P.	Slow jog	Swimming 100 metres sprint	Team drills / skills work in training
Heart rate	Low to moderate		
Energy system	Aerobic		
Lactate	Low		
Power output	Low		
Perceived exertion	Level 1 or 2		

4. A 13 year old netballer has asked you for a strength and conditioning program to help her improve her strength, speed and power. What are the issues you need to consider in this situation?

5. Alex is a 14 year old hockey player who wants to make the state junior team. Using the RUFIT system, outline some important training considerations for him:

Recovery	

Unique	
Frequency	
Intensity	
Time	

6. Read through this self monitoring report card for Hayden, an 18 year old triathlete in his first year of full training. What "messages" is this information telling you about his training and competition program?

Fatigue factor	1	2	3	4	5
What's my attitude to training and life like today?		X			
How do I feel today?	X				
How did I sleep last night?	X				
How do my muscles feel today?	X				
How positive do I feel today?	X				
How's my appetite today?		X			

7. Following on from question 6 above, what type of recovery activities would you consider introducing to help Hayden deal with his current situation?

8. Match the following "feedback comments" from athletes to a training principle (ie. individuality, reversibility, overload, specificity, variety, recovery, progression). Note that you can identify more than one training principle for each example.

a) "I find that if I don't keep up my long run in the morning, my endurance ability seems to decrease"
b) "You know, last year I was struggling to lift 50 kilograms in my bench press. Now 110 kgs is no problem"
c) "I love training hard, but I need to have Friday off every week. It makes me feel so much stronger and faster the next day"
d) "Swimming is great but I race much better if I do a yoga session every week and some circuits each Wednesday"
e) "I can't believe it. Genevieve and I are both training for the same event, we are the same age, we have been in the sport for the same time, but she can do so much more training than I can"
f) "I am so sore. The coach has really increased our sprint work this week"
g) "How come the forwards have to work so much harder than the backs? We seem to be lifting more weights and doing more work on techniques like scrums, lineouts and set plays while the backs just do ball work and speed training"
h) "Training around the city is great but I love it when we do our long Sunday ride out in the country"

i) “I have had a few weeks off my gym work. I did a session yesterday and I am really tired, tight and sore today”
j) “Training with the team is great but I really love to stay behind for 15 minutes and do some additional agility work to keep sharp”

9. What is the MOST appropriate type of training to improve the following performance activities?

A single double legged vertical jump	
Ability of an AFL mid fielder to run well for a full game	
Ability of a swimmer to explode of the blocks at the beginning of a race	
Ability of a rower to sustain high intensity rowing for a full race distance	
Ability of a wrestler to better handle larger opponents	
Ability of a gymnast to get into important positions easily and without strain or stress	
Ability of a soccer player to sprint over 10 metres to get to a ball or opponent	
Ability of a rugby league player to deal with collisions and impacts	

10. One of the great challenges for any team coach is how to optimise the training of individuals within the team training environment. Outline some strategies you could use to ensure each player in your team is getting the appropriate training load and optimal training and preparation program.