AFL resource development – Stage 5 Physical Activity and Sports Studies

Learning sequence 1: Nutritional planning

Outcomes addressed:	Evidence of learning:
Discusses factors that limit and enhance the capacity to move and perform PASS5-1	• Identify and describe factors related to nutritional intake that can limit or enhance movement and performance, such as caloric intake, nutritional value of food, types of food consumed, time of consuming food. • Explain the interplay between these factors and their impact on an AFL player's ability to move and perform effectively.
Displays management and planning skills to achieve personal and group goals PASS5-8	1. Describe factors to consider when planning healthy nutritional intake for physical activity 2. Design a basic nutritional plan which outlines food and hydration intake required before, during and after an AFL game.
Analyses and appraises information, opinions and observations to inform physical activity and sport decisions PASS5-10	• Provide examples and evidence to support the nutritional considerations and nutritional plan from credible information sources.

Content covered:

Students:

- Investigate examples of nutritional plans to assess reasons for the inclusion of particular food and nutrients for different types of physical activity, for example: intake before, during and after physical activity
- Describe factors to consider when planning healthy nutritional intake for physical activity
- Design a basic nutritional plan which outlines energy intake required before, during and after physical activity, for example: outdoor expedition, fun run or triathlon

Learning sequence

Activity 1: Nutritional planning - Factors to consider when planning healthy nutritional intake for physical activity

Discuss as a class the importance of nutrition for athletes. Ask them to share their knowledge about the role of food in athletic performance.

Explain that pre-event meals are crucial for providing energy and optimising performance. Discuss the following factors to consider when planning pre-event meals:

- **Timing:** The meal should be consumed 2-3 hours before the event to allow for digestion.
- **Macronutrients:** Emphasise the importance of carbohydrates for energy, moderate amounts of protein for muscle repair, and limited fat to avoid discomfort during exercise.
- **Hydration:** Adequate fluid intake is necessary to prevent dehydration.

Provide students with pre-event meal plans and considerations for different sports, and discuss some of the reasoning behind the similarities and differences between each sport/activity. Suggested links provided below.

- Pre-fight nutrition for boxers: https://boxingscience.co.uk/pre-fight-nutrition-refuel
- What to eat before cycling: https://www.sportsdietitians.com.au/factsheets/food-for-your-sport/food-for-your-sport-road-cycling/ (scroll to relevant section)
- Nutrition for soccer players: https://www.soccertoday.com/nutrition-for-soccer-players-the-right-time-to-fuel-up/?cn-reloaded=1 (scroll to relevant section)
- Nutrition for shot put and discus throwers: https://aretethrowsnation.com/shot-put-and-discus-nutrition-pre-comp-nutrition/
- Nutrition for dancers: https://blog.thelineup.com/nutrition-for-dancers

Explain that some athletes may require additional nutrition during prolonged events or intense training sessions. Discuss the following factors to consider for during-event nutrition:

- **Hydration:** Emphasise the need for regular fluid intake during exercise to maintain performance and prevent dehydration.
- **Quick energy sources:** Discuss the benefits of easily digestible carbohydrates, such as sports drinks, gels, or small snacks, to maintain blood sugar levels.
- **Electrolyte balance:** Explain the importance of replacing electrolytes lost through sweat to avoid cramping and fatigue.
- **Individual needs:** Highlight that nutritional requirements during exercise may vary depending on factors such as duration, intensity, and individual preferences.

Ask students to brainstorm activities and sports where athletes would require additional food intake during their event or performance. Discuss the types of food and drinks different athletes might access to re-fuel and the reasons why they may make these choices.

Explain that post-event meals are essential for replenishing energy stores, promoting muscle recovery, and reducing fatigue. Discuss the following factors to consider when planning post-event recovery meals:

- **Carbohydrate replenishment:** Emphasise the importance of consuming carbohydrates to replenish glycogen stores which are the body's fuel source.
- **Protein Intake:** Discuss the role of protein in muscle repair and growth and the need for adequate amounts after exercise.
- **Fluid and Electrolyte Restoration:** Explain the importance of rehydrating and replacing electrolytes lost during exercise.
- **Timing:** Discuss the "recovery window" and the benefits of consuming a post-event meal within 30-60 minutes after exercise.

Divide students into small groups and ask them to find examples of nutritional plans for a specified sport or activity. For each plan ask groups to assess reasons for the inclusion and timing of particular food and nutrients for intake before, during and after physical activity.

Extension activity: Impact of energy deficiencies on athletes.

Explain to students that the hard training undertaken by athletes day in day out ensures they have increased energy needs. Well-planned eating practices help athletes to train hard, stay healthy and injury-free, and compete at their best. Athletes who do not eat enough food (or the right sort of food) to fuel their increased energy requirements can become at risk of developing energy deficiencies ***(RED-S)***, which can have a negative impact on not only their performance but also their overall health.

Relative Energy Deficiency in Sport (RED-S), is a syndrome which can adversely affect the health and performance of athletes. It exists when under-fueling is sustained for extended periods of time i.e. there is a negative balance between dietary energy intake and the energy expenditure required to support optimal health, daily living activities, growth, and sport. In the simplest terms the underlying cause of RED-S is low energy availability. That is the amount of dietary energy remaining for the body to function properly after accounting for exercise expenditure.

Ask students to go find out more information on RED-S from the AIS website and present back to the rest of the class.

Activity 2: Nutritional programs for elite performance – Case studies of AFL players

Watch the player video interview where Isaac and Cooper discuss their eating plans by

Discuss as a class reflecting on the following questions:

- How do their food choices change from pre-season to in-season?
- How can food choices change for different players?
- How is weight gain / loss managed?
- What was their go-to pre-game meal? Do you think this is a good choice? Why? Why not?
- What are some key considerations they think about when planning their meals throughout the week?
- What is their typical post-game meal and drink? Do you think this is a good choice? Why? Why not?

Activity 3: Design a basic nutritional plan which outlines energy intake required before, during and after an AFL game

Divide the class into pairs or small groups and allocate each group a specific Swans or Giants AFL player. Students need to research the player's position, playing role in their team, and nutritional requirements to pre-, during and post-game eating plan, including drinks. The nutritional plan should include recipes (ingredients and method) so that the nutritional content of the meal can be assessed.

Share the following links with your class to get their research off on the right track:

Sample meal plan from the West Coast Eagles:
https://s.afl.com.au/staticfile/AFL%20Tenant/WestCoastEagles/Corporate/HBF11800%20Sample%20Meal%20Plan_Health_E.PDF

Australian Institute of Sport – Recipes for athletes
https://www.ais.gov.au/nutrition/recipes

Sports Dietitians Australia – Food for AFL Players
https://www.sportsdietitians.com.au/factsheets/food-for-your-sport/food-for-your-sport-afl/

Game Day Nutrition – Top End Sports
https://www.topendsports.com/sport/afl/nutrition-game-day.htm

Students present their nutritional plan to another pair/group and explain the reasoning behind their choices of meals and drinks.

Learning sequence 2 – Planning training programs

Outcomes addressed:	Evidence of learning:
Demonstrates actions and strategies that contribute to active participation and skilful performance PASS5-5	• Identify and describe factors to be considered when planning pre-season, in-season and post-season training plans • Explain the interplay between these factors and their impact on an AFL team's ability to perform effectively and consistently across a season.
Displays management and planning skills to achieve personal and group goals PASS5-8	3. Describe factors to consider when planning coaching sessions and training plans 4. Design a yearly training plan which outlines pre-season, in-season and post-season considerations for an AFL team.
Analyses and appraises information, opinions and observations to inform physical activity and sport decisions PASS5-10	• Provide examples and evidence to support the considerations and training plan from credible information sources.

Content covered:

Students:

- Consider and discuss aspects of long-term planning for coaching in a variety of sports, for example: pre-season, in season and post-season
- Research and evaluate a training plan from a selected sport
- Participate in and/or evaluate a session conducted by an accredited coach
- Design and conduct a coaching session for a selected physical activity or sport that includes the following components:
    - introduction/demonstration
    - safety considerations, eg water safety, protective clothing and equipment
    - warm up and cool down
    - skill development and practice
    - evaluation
- Rehearse appropriate treatment for injuries and conditions which have the potential to occur in a specific physical activity, sport or recreation context, for example:
    - injury rehabilitation

Learning sequence

Activity 1: Planning a yearly training program

Explain to students that planning a yearly training plan for an AFL team involves several key steps to ensure the team's optimal performance and development throughout the season.

Provide students with this high level explanation of the steps in the planning process:

1. **Assess the team's current state:** Begin by evaluating the team's strengths, weaknesses, and areas for improvement. Consider factors like player fitness levels, skills, tactical understanding, and team dynamics. This assessment will help you identify the team's goals and areas that need emphasis during training.

2. **Set specific and measurable objectives:** Establish clear objectives for the team based on the assessment. These objectives should be specific, measurable, attainable, relevant, and time-bound (SMART goals). For example, improving endurance by 20% in three months or reducing turnovers by 15% in the upcoming season.

3. **Create a yearly training calendar:** Develop a calendar that outlines the training schedule for the entire year. Consider the different phases of the season, including pre-season, in-season, and off-season. Allocate time for training sessions, matches, recovery periods, and breaks. The calendar should also account for individual player development and potential external factors like holidays or competitions.

4. **Pre-season training:** The pre-season phase focuses on building the team's fitness, strength, and skills. Design training sessions that include aerobic and anaerobic conditioning, strength training, agility drills, skill development exercises, and tactical understanding. Gradually increase the intensity and volume of training to ensure progressive adaptation.

5. **In-season training:** Once the competitive season begins, the training shifts towards maintaining fitness, improving specific skills, and refining tactical strategies. Develop a balanced training plan that includes regular practice sessions, match simulations, recovery sessions, and tactical analysis. Adjust the training load based on the team's performance, injury status, and upcoming fixtures.

6. **Periodisation and rest:** Introduce periodisation principles to manage training load and avoid overtraining. Plan for regular rest and recovery periods to allow players to recharge physically and mentally. Incorporate lighter training days, active recovery sessions, and scheduled breaks to prevent fatigue and reduce the risk of injuries.

7. **Continuous assessment and adjustment:** Throughout the year, continuously assess the team's progress towards the established goals. Monitor individual and team performance, review match statistics, and collect feedback from players and coaching staff. Use this information to make necessary adjustments to the training plan, addressing weaknesses and capitalizing on strengths.

8. **Individual player development:** Consider the unique needs of each player and design personalised training programs to enhance their skills, fitness, and positional understanding. Tailor training sessions to cater to individual strengths and areas for improvement. Regularly communicate with players to ensure their development aligns with the team's overall objectives.

9. **Ongoing evaluation and adaptation:** Regularly review the effectiveness of the training plan, both during and after the season. Identify areas of success and areas that need improvement. Use these insights to refine the planning process for future seasons,

Activity 2: Considerations for individual athletes – Case studies with Isaac and Cooper

As a class, watch the ***Player video montage 1: Yearly training programs – breakdown of season*** (stop video at 6:13)

Discuss the players responses by getting students to reflect on the following questions:
- What sorts of training do they do in the off-season to maintain their fitness? Why do they focus on this sort of training in the off-season?
- What does their usual week look like in-season in terms of recovery session, training sessions, and game day preparation, strategy meetings?
- How does their training routine change when the team heads into the finals?

Share the following pre-season training plans with the class and explain these programs have been developed for players who are hoping to be selected into the AFL academy teams.

Giants Academy – Pre-season training program
https://aflsapphirecoast.com.au/wp-content/uploads/sites/13/2017/10/GIANTS-ACADEMY-OFFPRE-SEASON-PROGRAM.pdf

Gippsland Power – Pre-season training guide (scroll to relevant section for program)
https://websites.mygameday.app/get_file.cgi?id=36334633

Activity 3: Design a yearly training plan or coaching session

Take your class through the process for planning a year-long training plan by using the steps laid out in Activity 1 and/or by watching the video by Flow High Performance on Creating a Periodised Annual Training Plan.

CoachAssist: Designing an AFL pre-season training program
https://www.coachassist.com.au/pre-season-training-program.aspx

CoachAFL
https://www.play.afl/coach/become-a-coach/ (any chance of getting temporary access to the Foundation Coaching course for students to use to develop their training plans)

Activity 4: Planning training sessions and recovery for injured players

Introduce the concept of injury assessment and management in AFL.

Discuss the common types of injuries players may sustain and their potential impact on the player's performance and well-being.
Emphasise the need as a coach to always consult medical professionals and the team's sports science staff to obtain a comprehensive understanding of the player's injury.

Provide copies of AFL injury management guidelines for students to review and understand the recommended protocols for different types of injuries.

Revisit the various components of an AFL training session, including warm-up exercises, skill drills, conditioning activities, and game-related scenarios.

Explain the importance of tailoring the training program to the player's injury and fitness level, focusing on gradually reintroducing skills and building strength and endurance.

Watch the rest of the ***Player video montage 1: Yearly training programs – injury, recovery and return to play*** (from 6:14 onwards)

Discuss as a class the different training activities and techniques mentioned by Isaac and Cooper in the video.

Ask students to research the Anti-gravity treadmill and Platelet-Rich Plasma (PRP) injections and other treatments used to speed up recovery and rehabilitation of soft tissue injuries.

Ask students to work in pairs and design a 15-minute training program for their assigned injured player, incorporating appropriate exercises and skill-specific drills.