Assignment 2b: Identify literacy and numeracy demands in a topic and developing teaching strategies to address these

EXC425: Literacy and Numeracy Across the Curriculum

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Assignment 2b: Identify literacy and numeracy demands in a topic and developing teaching strategies to address these
Topic: Lifelong fitness Year 8

Strand: Movement and Physical Activity
Content Description: Understanding movement
Standard: Participate in physical activities that develop health-related and skill-related fitness components, and create and monitor personal fitness plans
(Australian Curriculum Assessment and Reporting Authority [ACARA] 2014a)

Table 1: Lifelong Fitness unit plan

	Key Ideas	Teaching & Learning strategies/activities	Numeracy & /Literacy demands	References /Resources
Week 1	• The relevance of fitness • Health and Skill related components of fitness • Fitness test items • Practical: Fitness testing (ACARA 2014a)	• Brainstorm • Ppt presentation • Definition matchup • Group work: fitness component poster • Practical: group work	L: Introduction to specific physiological terminology L: Comprehending fitness test protocols N: Measuring/recording fitness tests N: Calculating results of fitness tests L: Understand language of movement and movement sciences (ACARA 2014b)	• Student Fitness workbook (SFWB) • Ppt presentation • Computer/laptop /ipad • Poster paper/textas • Practical: Fitness test materials
Week 2	• Fitness test results • National Physical Activity Guidelines (NPAGS) & F.I.T.T principles • Fitness Program • Practical: Cardiorespiratory fitness and heart rate (ACARA 2014a)	• Computer (Microsoft Xcel): analysis of individual and class fitness test results • Ppt presentation • Self assessment (NPAGS) • Table: NPAGS and F.I.T.T principles • Plan and design fitness program • Practical: group work	N: Graph results against class mean N: Interpret and analyse health and physical activity information to evaluate overall fitness L: Analysing NPAGS N: Categorising NPAGS F.I.T.T principles L&N: planning and designing an individual and fitness program N: Undertaking calculations (HR, breathing rate) N: Using spacial reasoning during activities	• Computer/laptops • Microsoft Xcel • Fitness test normative data • Fitness test results class data • Ppt presentation • SFWB • Self assessment survey • Materials for practical

			L: Comprehend and compose texts related to health and Physical Education **(ACARA 2014b)**	
Week 3	• Community organisations that cater to developing fitness • Barriers to PA and overcoming them • Monitoring fitness program • Practical: circuit training **(ACARA 2014a)**	• Internet task: community organisations • Physical activity barrier cards • Assess and reflect on fitness program • Practical: muscular strength and endurance circuit	**L: Understand language used to describe products information and services** **L: Evaluate and challenge influences on health and physical education** **N: Calculate BMI** **L&N: Analyse and interpret results** **L: Understand language of movement and movement sciences** **L: Comprehend and compose texts related to health and Physical Education** **(ACARA 2014b)**	• Computer/laptops/ipads • SFWB • PA barrier cards • Measuring tape • Scales • Materials for circuit practical
Week 4	• Assessing results of fitness program • Review of fitness unit • Practical: flexibility **(ACARA 2014a)**	• Post program fitness tests (2-3 tests only) • Computer (Microsoft Xcel): analysis of individual and class fitness test results • Evaluate, reflect and discuss fitness program • Unit revision quiz • Practical: Pilates class at local gym	**N: Measuring/Recording results** **N: Calculating results of fitness tests** **N: Interpret and analyse health and physical activity information to evaluate overall fitness** **N: Graph results against class mean** **L: Revisiting specific terminology** **N: Reviewing methods of**	• SFWB • Fitness test materials • Computer/laptops • Computer software • Microsoft Xcel • Fitness test normative data • Fitness test class data • Ppt presentation (quiz) • Student indemnity forms (Pilates)

			calculation e.g. HR L &N: review understanding and display developed skills L: Understand language of movement and movement sciences L: Comprehend and compose texts related to health and Physical Education (ACARA 2014b)	

L= Literacy Demand, N= Numeracy Demand

Table 2: Lifelong fitness Weekly plan (Week 2)

	Content	T & L Activity	Numeracy / Literacy demands	References/Resources
Lesson 1 (100 mins)	• Individual and class fitness test results • National Physical Activity Guidelines (NPAGS) and F.I.T.T principles • Determining overall fitness level • Designing a fitness program ➢ Goal setting ➢ Assignment explanation (ACARA 2014a)	• Class discussion: Review fitness testing practical • Computer tasks (Microsoft Xcel): ➢ Graph personal results with class mean ➢ Analyse class and individual fitness test results • Ppt presentation: NPAGS and F.I.T.T principles • Table: organise NPAGS in accordance with F.I.T.T principles • Self assessment survey (NPAGS) • Overall fitness assessment • Ppt presentation: Designing a fitness program and goal setting • Goal setting worksheet • Assignment: Design and implement 2-week fitness program	N: Use Microsoft Xcel to graph results against class mean N: Students interpret and analyse data from test results, normative data, trends in their graph and self assessment data to evaluate their overall fitness L: Students analyse information from health and government agencies to determine the physical activity that needs to be undertaken for their age group N: Categorising NPAGS F.I.T.T principles L&N: Students use available information in order to plan and design a fitness program that takes into consideration factors such as barriers, time and goals.	• Computer/laptops • Fitness test results class data • Fitness test normative data (ExRx.net 2014; BrianMac Sports Coach 2014) • Microsoft Xcel • Ppt presentation • SFWB • Self assessment survey (Adapted from: Australian Institute of Health and Welfare [AIWH] 2003)

			(ACARA 2014b)	
Lesson 2 (100 mins)	• Exploring cardiorespiratory fitness and heart rate through practical application (ACARA 2014a)	50 minutes: Cardiorespiratory fitness • Ultimate Frisbee • Worksheet: Rate fitness level, answer questions • Class Discussion 50 minutes: Hear rate and exercise • Physically measure and calculate resting heart rate (HR) • Group work: stations involving light, moderate and high intensity activities • Students take HR after each station and record results • Worksheet and Discussion of results	N: Undertaking calculations (HR, breathing rate) N: Using spacial reasoning during activities L: Students will communicate their ideas and opinions in regards to cardiorespiratory fitness and heart rate and how these effect and/or benefit exercise. They will also need to take their peer's views into consideration. (ACARA 2014b)	• Practical materials • SFWB (Practical classes adapted from: TSL Education Australia 2014a; TSL Education Australia 2014b

L= Literacy Demand, N= Numeracy Demand

Justification of Literacy Demand

In order to address the literacy demand of "comprehending and composing texts", students undertake a practical during their fitness unit allowing them to become "active learners" and undertake problem-posing education (ACARA 2014b; Moll et al. 1992; Freire 2000).

Students undertake a practical lesson focusing on cardiorespiratory fitness and heart rate, requiring them to reflect on how these effect and/or benefit exercise. By physically undertaking exercise and drawing on knowledge that has been obtained from their theory lessons and the outside world, students are required to become "active learners" as they are using experiences outside the classroom in order to develop a new understanding and apply their knowledge to real life scenarios such as a team sport (Moll et al. 1992 pp. 138-139). In turn, the use of answering questions and class discussion demands students to communicate their ideas and opinions related to heart rate and cardiorespiratory fitness, therefore expressing how they feel (ACARA 2014b). Students also need to evaluate the viewpoint of others, allowing them to continue reshaping their own ideas and understanding (ACARA 2014b). Through this use of class dialogue, students are undertaking problem-posing education allowing them to reject the concept of "deposit making" and "reflect upon the world" in order to learn and grow together with their peers and teacher (Freire 2000, pp. 79-80). As students are increasingly presented with these practical experiences and related questioning and discussion they can continue to be challenged and will respond to the challenge, allowing the continued development of these literacy skills (Freire 2000, p. 81).

Justification of Numeracy Demand

During their fitness unit students are required to analyse health and physical activity information (ACARA 2014b). In order to undertake this numeracy demand, students are provided with a set of generic questions in order to take a logical approach when integrating numeracy into health and physical education (Lake and Kemp 2001, p. 12).

To aid them in developing their own personal fitness program, students are required to use statistical reasoning to identify trends and relationships in a graph and compare their fitness test results to normative and self-assessment data in order to make predictions about their overall level of fitness (ACARA 2014b). Having an understanding of how to construct and interpret graphs allows students to work scientifically, investigate and communicate while developing further learning, personal independence and responsibility by making it relevant to their personal health and wellbeing (Lake and Kemp 2001; Australian Association of Mathematics Teachers (AAMT) 1997).

Furthermore the collection of data, construction and interpretation of graphs allows students to develop one aspect of numeracy known as "data sense"(Reys et al. 2001; AAMT 1997). In order to assist in this development, a 5-step approach involving generic questions can be established in order to understand what the graph entails, analyse the material itself, identify the trends of individuals lines in the graph, make comparisons between lines and use this material in conjunction with other information in order to draw conclusions (Lake and Kemp 2001 pp. 8-11). By using this scaffolding like process, students are able to learn how to read and evaluate statistical information, use statistical language and develop conceptual knowledge (Lake and Kemp 2001; Reys et al. 2001).

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