



For The Teacher

Upper Primary Years 5 & 6

Week 14

Title: Fuelling the Tank!

Theme: Hydration

Overview

Students will explore the importance of hydration and the amount of fluid they require each day. They will compare their fluids needs with those of an elite sportsperson. They will recognise the importance of developing a fluid intake plan for athletes to meet their daily fluid needs for good health and training/competition needs. They will also identify and examine the different types of drinks available to them and what are the best choices to consume for good health.

Time Required

50 minutes

Background information and possible discussion points

The human body contains an abundance of water. It is present in every cell in the body including skin, muscles, the brain and other organs. Water is a vital component of the cellular processes that occur to ensure the body functions at its best.

Every day, we lose water from our body when we breathe, go to the toilet, and sweat. Bleeding and vomiting can also cause fluid loss, but are much less common.

We need to replace our fluid losses with fluid intake. It is important to drink enough fluid each day to maintain the body's hydration level. If we don't drink enough, the body can become dehydrated. Dehydration can lead to headaches, dizziness, illness and poor concentration.

Athletes and people who are very active need lots more fluids because they sweat a lot. On average an adult athlete will need to drink at least 500ml of fluid every hour when they are exercising to maintain their hydration. However, if they are training or competing in hot weather, they will need to drink more than this. We all need to drink more fluid when it's hot, compared to cooler weather, as we sweat more in the heat.

Fluid intake in children is variable. Many children do not recognise the need to consume fluid until they feel thirsty. Quite often children must be reminded to consume fluid. Research shows that children voluntarily drink more fluid when the drink is palatable, such as flavoured drinks compared to water.



The Nutrient Reference Values for Australia and New Zealand (2005) recommends:

Children aged 4-8 years require **1.6L water/day of which 1.2L should come directly from drinking fluids**

Boys aged 9-13 years require **2.2L water/day of which 1.6L should come directly from drinking fluids**

Girls aged 9-13 years require **1.9L water/day of which 1.4L should come directly from drinking fluids**

Adult males aged 19-30 years require **3.4L water/day of which 2.6L should come directly from drinking fluids**

Adult females aged 19-30 years require **2.8L water/day of which 2.1L should come directly from drinking fluids**

(NHMRC, 2005)

Learning Activity – Introduction

Discuss with students the concept of hydration including;

- the ways they lose water from their bodies
- the importance of drinking more in hot weather and when exercising
- how much fluid they should consume in a day (based on NHMRC recommendations)

Learning Activity 1 – How Much is Enough?

Using the NHMRC guidelines, have the students work out the fluid intake requirements of their favourite athlete. Have the students devise a basic training program for their athlete, focussing on the intensity and duration of the session. The students should work out how much fluid their athlete needs to drink during their training session based on how long the session goes for; using the assumption of 500ml/hour of activity. The students should then calculate the entire fluid intake that their athlete needs for the day (daily fluid intake + training fluid intake). Have students complete the table 1 on their student worksheet.

Learning Activity 2 – Have a Plan

Discuss the results of learning task 1 as a group. Ask the students to devise a hydration plan to help the athletes to meet their total needs. For example, 4.5L (4500ml) fluid is a lot to consume all at once, and drinking large quantities of fluid all at once can lead to gastrointestinal upset, bloating, and frequent urination, which is not favourable for athletes to experience. The students may consider using a 500ml bottle, drinking and emptying it 9 times during the day to achieve a 4500ml fluid intake. This would involve carrying a drink bottle around during the day and sipping consistently to empty it every hour between 8am and 7pm at night.





Learning Activity 3 – Best Fluids to Drink

Ask students to name and list as many different types of fluid that they can think of. Examples include water, milk, juice, cordial, soft drinks, energy drinks.

Discuss the pros and cons of the fluids for their favourite athletes, keeping in mind that athletes have very high energy and carbohydrate needs and compared to children, they should include some high energy drinks in their diet to meet their energy needs:

- **Water** is very hydrating and is the body's preferred fluid type;
- **Milk** is also hydrating and contains calcium to help strong bones and might be a good fluid to include at breakfast or in a milkshake as a snack;
- **Juice** is good but only a small glass occasionally, and 100% juice and with no added sugar (juice might be a good alternative to plain water, and a great fluid to have a small glass of at breakfast time);
- **Cordial and Soft Drinks** contain too much sugar and no beneficial nutrients. They are not appropriate fluids for good hydration or good health;
- **Sports Drinks** are appropriate to assist with hydration in elite athletes or those who participate in high intensity, long duration activity.
- **Energy Drinks** also contain too much sugar, additives, and caffeine, and can be very unhealthy and potentially dangerous for both children and adults. Energy drinks can cause nervous system complications and anxiety, increased heart rate, increased blood pressure, poor concentration, and the potential long term complications associated with consuming high sugar drinks, like obesity and diabetes. Athletes should not consume energy drinks as they do not contain the right types of nutrients to be beneficial for optimal performance or good health.

Learning Activity 4 – Shake it up!

Students create a shake or smoothie recipe for their athlete to consume. The students should document the ingredients, including volumes and the method to follow. They can use fluids like fruit juice, milk, yoghurt, and include other ingredients for flavouring such as fruit, or honey. They should work out the total amount of fluid this recipe will contribute to the athletes fluid needs, and also identify the other nutrients that will be beneficial for the athletes health and performance (eg calcium for bones and protein, fruit for vitamins and energy).

Students write a procedural text describing how to make their shake, including; ingredients, volumes and method.

They then explain why they have chosen each ingredient.



Support materials and references

For Kids

- 1Seven article: [Top up your tanks](#)
- 1Seven article: [Soft drinks and Sugar](#)
- 1Seven article: [Healthy Snacks](#)

For Teachers & Parents

- 1Seven article: [Steer clear of soft drinks](#)
- 1Seven article: [Time to put the squeeze on juice](#)
- 1Seven article: [Soft drinks and sugar](#)

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The Australian Guide to Healthy Eating (AGHE) can be found at:

<http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publth-strateg-food-guide-index.htm>

Thinking Strategies

Bloom's Taxonomy

Remember	Understand	Apply	Analyse	Create	Evaluate
•	•	•	•	•	•

Gardner's Multiple Intelligences

Verbal/ Linguistic	Bodily/ Kinesthetic	Musical	Logical/ Mathematical	Interpersonal	Visual/Spatial	Intrapersonal	Naturalist
•			•			•	

Edward De Bono's Six Thinking Hats

White Hat Information	Red Hat Feelings	Black Hat Judgement	Yellow Hat Benefits	Blue Hat Thinking	Green Hat Creativity
•		•	•	•	•

