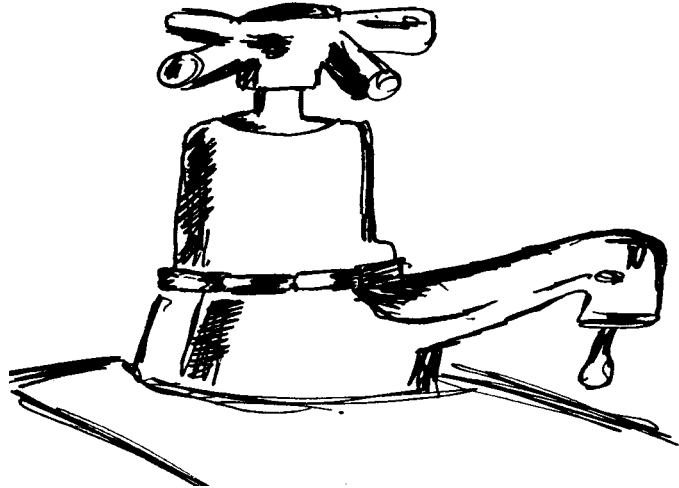


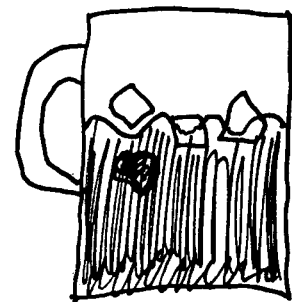
H₂O That's The



Way To Go

A teaching resource for encouraging water and fluid consumption in primary school students.

A SNACK's (School / Home Nutrition and Canterbury





H₂O That's The Way To Go

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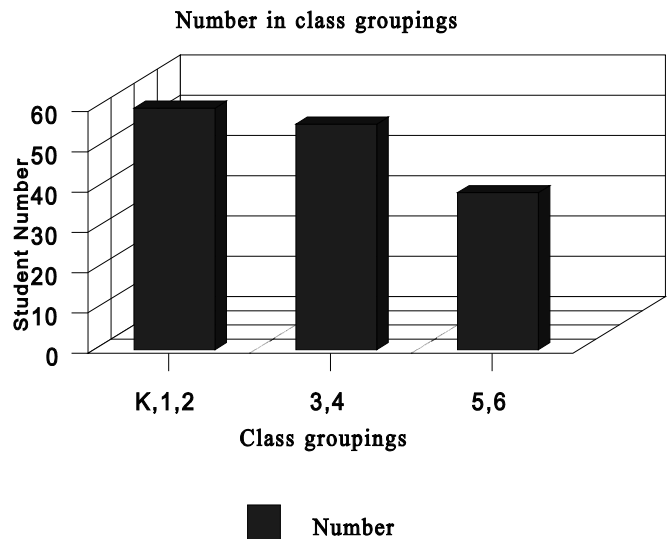
Introduction

This manual was developed as a result of our research and desire to act on the issue of children not drinking fluids and water. In 1996, 560 students (61% response rate) from five schools in the Canterbury local government area participated in a nutritional study. We found one child in every eight, did not drink **ANY** fluids, from the time they got up in the morning to when they finished school. Milk on cereal was not included as a drink for this study, even though some people considered milk on breakfast cereal as a drink. Usually only a small amount of milk would be used, but it would look like a lot.

Figure 1: Number of children not drinking any fluids.

For students who **did** drink fluids, two out of three of these children did not drink water

Children not drinking fluid



during the period, from when they woke up to when they finished school. This led us to ask: what are children drinking?

The Canterbury Nutrition working party for primary school-aged children looked at these, and other results and were so concerned that we included children and their drinking as one of five priorities for action.

Why is it important for schools to think about water?

When we are active we sweat to keep our bodies cool. To avoid becoming dehydrated we need to drink fluid to replace the sweat. Avoiding dehydration will help children to maintain their mental functioning and skill co-ordination. As mental functioning and skill co-ordination are reduced by dehydration.⁽¹⁾ Because we get thirsty, **after** we have lost the fluid,

it is important to promote drinking water before we get thirsty. Children do not sweat as much as adults, and because their bodies don't cool as efficiently as an adult's,⁽²⁾ it is important children drink more water, before, during and after activity.⁽³⁾

Water is a fundamental part of life and is something we can't live without. Adult bodies are made up of 50-60%⁽⁴⁾ water and children have sixty percent.⁽⁵⁾ This 60% of water has many roles in the body and when we do not drink enough water during the day we are at risk of developing constipation, dehydration and renal stones. So where does the 60% of water go? Water is part of our saliva, blood, tears and perspiration. It is a lubricant for our food and joints; carries body wastes for disposal; and carries food, chemicals and electrolytes to our cells via our blood stream. Water does this and much more.

Schools play an important role in helping children to discover the importance of water to their health and society.

How can schools help to promote water?

Using the health promoting schools model, the school can look at water in terms of the curriculum, the school ethos and the school/home/community interface.

Curriculum

This manual focuses on two areas of the curriculum; PDHPE (Personal Development Health Physical Education); and Science and Technology. Although teachers include nutrition in their curriculum, there are few resources for teaching water in primary schools and water tends to be overlooked in nutrition. The manual contains learning outcomes for each of the two curriculum areas and activities for each stage of learning. Some of the activities are based on materials from nutrition manuals and put together into a comprehensive water unit. See the resources for schools section at the end of the manual for a complete list.

School Ethos

It is important that schools provide an environment that supports children to drink water. Children can concentrate better if they are not dehydrated. The manual provides suggestions for strategies that schools could put into place to help encourage children to drink water.

School/Home/Community Interface

Schools can play an important role in helping parents to understand the importance of water. Children can be encouraged to share their activities with parents and sample information sheets for parents are included in the manual.

Teaching about water is only one part of promoting water. We hope that schools will find the information and activities in this manual useful.

Strategies for the School

There are three key areas that the school can look at to determine whether it is a water encouraging school:

Accessibility:

- < Is water freely available?
- < Is water sold in the school canteen?
- < Do the bubblers work?

Physical Environment:

Many children do not want to drink at school because they do not want to go to the toilet or because drinking facilities are not clean, so the school needs to ask:

- < How clean are the toilets?
- < Is there a bullying problem in the toilets?
- < Is there a privacy problem in the toilets?
- < Do birds use the bubblers as a bird bath?
- < Are the bubblers poorly designed?

Encouragement:

- < Are the children encouraged to drink at school?
- < Can children drink water in the classroom?
- < Are children reminded to have a drink?
- < Are school bags left out in the sun all day so that drinks become hot?
- < Are children encouraged to drink fluids during sport?

The school could conduct a survey and find out why students aren't drinking at school.

When promoting water it is important to remember that children shouldn't share drink bottles. This can lead to serious illnesses being passed on.

To promote water in the broader community the information sheets on the following two pages were designed to slip into school newsletters for parents.

When is your child drinking?

This resource sheet has been written as recent community research in the Canterbury area found:

* One in eight children did not drink anything for breakfast **and** when at school. This meant they did not drink any fluids from when they got up in the morning to when they left school.

* For children drinking fluids during the school day, two in three children did not drink water.

* Water is also found in fruit and vegetables, however, local research found children were not eating many fruit & vegetables during the school day.

After reading this resource sheet we hope you will know how important it is for your children to drink water during the day.

Why is it important to drink?

For a child's good health it is important they drink fluids during the day.

Drinking water during the day, instead of just at night helps:

- * their body cool during exercise
- * reduce their chance of getting constipated
- * reduce the chance of forming kidney stones
- * reduce their chance of getting dehydrated, especially in Summer when we lose water through sweat

Children need to drink all day to replace the water they use. Their bodies use water when, eating, sweating, forming new blood, being active, going to the toilet, being ill and being hot.

When children are active they need water. Drinking water helps their body cool down. Because children are smaller and do not sweat as much as adults, their bodies do not cool as efficiently as an adult's does. Children should drink water before, during and after being active.

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Choosing drinks for your children.

After reading this resource sheet we hope you will know the best drink for your children.

Water: is the best choice and should be drunk every day. It provides fluoride that helps prevent tooth decay. There are no alternatives to water.

Milk: provides calcium, which is needed every day for growth of bones and teeth. Other choices for calcium can be cheese and yoghurt.

Flavoured milk & yoghurt drinks: these drinks have sugar added to them so when drinking these, have them with meals.

Fruit juice: provides vitamin C and a small glass is enough in a day. Fruit juice contains sugar and acid that come from the fruit. Bacteria on the teeth eat this sugar and produce an acid that attacks the teeth. The acid in the juice can also erode the teeth. You can help protect the teeth when drinking juice, by having it with a meal. For Vitamin C, other choices are fresh and canned fruit.

Sports drinks: have sugar and food acid that cause tooth decay, so extreme care is needed when drinking them. They are useful for intense sports going longer than one hour, e.g. marathon running and tri athletics.

Cordial and bottled flavoured water: contain sugars like fructose and sucrose. So if using these, they should be given in small amounts, not very often and with meals.

Soft drinks: and flavoured mineral waters when drunk, should be given in small amounts and not very often. This is because of their food acid and high sugar content.

Diet Drinks: are not recommended for children as they contain food acid, which can erode the teeth.

Tea, coffee: and iced coffee drinks when drunk should be given in small amounts and not very often. This is because of the caffeine content.

Only drink fruit juice, soft drinks, diet drinks, cordial, sports drinks and bottled flavoured water in small amounts and not very often. If these fluids are drunk too often there is more risk of getting tooth decay because of their sugar and acid content. To minimise the risk, do not frequently sip them, and rinse the mouth with water immediately after having these drinks. This also applies when using a mouth guard for sport. If these drinks are consumed before using a mouth guard, it is important to rinse the mouth with water before putting in the mouth guard.

Date March 1999

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Reference Materials For Teachers

What is in Drinks?

Water:

When water is clean and safe to drink, its use does not need to be restricted. Water ideally, does not contain bacteria, viruses, and protozoa that can cause illness when consumed. This is because there are a series of barriers to prevent contamination of our drinking water in Sydney. These include protection of the water catchment, storage protection, and water treatment by filtration or chlorine to remove or kill contaminants. Between July and September 1998, Sydney water was found to be contaminated with two parasites, giardia and cryptosporidium and people were advised to boil their drinking water.⁽⁶⁾ When Sydney water is unsafe to drink, people are advised of this. Like many Australian capital cities, Sydney water has fluoride added to it. Fluoride is a mineral that helps prevent tooth decay.⁽⁷⁾

Milk:

Milk is the main source of calcium in our diet. Milk and some foods made from milk such as cheese, yoghurt, and yoghurt drinks also provide calcium, riboflavin and protein. Some people may have a lactose intolerance as more than half the adults in the world are lactose intolerant.⁽⁸⁾ Lactose intolerance usually starts in teenage years or adulthood. Which means the body does not have enough of the lactase enzyme to digest the sugar in milk called lactose. For some people lactose intolerance causes upset tummy, bloating and diarrhoea.

An individual's level of lactose intolerance will determine how much milk they can have before they feel ill. For example some people with lactose intolerance can cope with milk while others cope well with cheese and yoghurt.

Lactose intolerance is diagnosed by a local doctor or medical specialist.

Fruit Juice:

Fruit juice contains sugar and acid that come from the fruit. Bacteria on the teeth eat the sugar in juice and produce an acid that attacks the teeth. The acid in the juice can also erode the teeth. Because the sugar and acid in juice can cause tooth decay it is important to limit fruit juice. Another reason to limit fruit juice is the natural sugars in juice such as sorbitol and fructose that can cause a type of diarrhoea called osmotic diarrhoea in young children. What happens is, when the fructose and sorbitol are in the bowel they hold onto more water causing the diarrhoea.

How much fruit juice is enough? When considering the amount of Vitamin C in fruit juice, generally a small glass of 200mls is enough to drink. Because fruit juice has natural sugars in it and because the fibre of fruit is removed in fruit juice, nutritionists

recommend that fruit juice is limited in our diet and is only drunk during meals. Too much fruit juice can contribute to tooth decay, osmotic diarrhoea and overweight.

Sports Drinks:

Sports drinks are like an expensive soft drink with extra salt and minerals added. They were developed for athletes and are not considered useful for the general **non-exercising** public.

For exercise longer than one hour the presence of flavour and salt in these drinks is useful in helping the athlete drink more fluid than when they drink plain water. One glass (250mls) of a sports drink contains two to five teaspoons of carbohydrate.⁽⁹⁾ This carbohydrate is called sucrose and glucose and assists the athlete doing long intense exercise, by helping delay their fatigue.⁽¹⁰⁾

As these drinks combine a food acid that erodes the teeth and sugar that is a food for mouth bacteria, sports drinks should be limited and **extreme care** used when they are drunk.

If these fluids are drunk too often there is more risk of getting tooth decay because of their sugar and food acid content. To minimise the risk, do not frequently sip them, and rinse the mouth with water immediately after having these drinks. This also applies when using a mouth guard for sport. If these drinks are consumed before using a mouth guard, it is important to rinse the mouth with water before putting in the mouth guard.

These rules also apply to soft drinks, diet drinks and flavoured mineral and still waters.

Soft drinks:

These have a high sugar and food acid content. The food acid erodes the teeth and the sugar is used as food by the mouth bacteria. Cola drinks also contain caffeine. There is no safe limit for caffeine consumption in Australia.⁽¹¹⁾ Caffeine is a concern for some people who are either not used to it or are sensitive to caffeine. It can also over stimulate some children. Because of the high level of calories or kilojoules in soft drinks, nutritionists recommend that if soft drinks are used, they are only used occasionally, for example at celebrations. Soft drinks are not an every day drink.

Flavoured mineral waters:

Flavoured mineral waters and flavoured still-water drinks can contain sucrose, and fructose. They have a similar sugar content and food acid level as soft drinks. The only difference is the type of water used, tap water compared to spring/mineral water.

To reduce the risk of developing tooth decay, follow the same rules as for sports drinks when using soft drinks.

Diet Drinks:

These contain food acids, which can erode teeth. They are not recommended for children.

Tea/Coffee/Iced coffee:

If children use these drinks they should only drink them in small amounts and not very often, because of the caffeine content.

Fluids in the body

Why do our bodies need so much water?

Adult bodies contain 50-60% ⁽¹²⁾ water and children's bodies contain 60%. ⁽¹³⁾

Water is a fundamental part of life that we can't live without. This 60% of water has many roles in the body and when we do not drink enough water during the day we are at risk of developing constipation, dehydration and renal stones.

So where does the 60% of water go? Water has many functions. It is part of our saliva, blood, tears, urine and perspiration. It regulates our body temperature. It is a lubricant for our food and joints; it carries wastes for disposal; as well as chemicals to our cells via the blood stream. Water does this and much more.

We need to drink before we are thirsty as well as when we are thirsty. Because, our body tells us we are thirsty, after we have lost the fluid. Our thirst instinct is not a good indicator of how much to drink. We need to drink more than what our thirst tells us. ⁽¹⁴⁾

What happens if we do not get enough water?

As people become dehydrated there is an increase in their heart rate and body temperature. Sporting performance, mental functioning and co-ordination are reduced during dehydration.

At higher levels of dehydration there is more risk of nausea, vomiting, diarrhoea and heat stress. ⁽¹⁵⁾

Fluid Requirements

Where do children get fluids?

All drinks and most of our foods contain water. Most fruit and vegetables contain 80-90% of water, except for dried fruit and vegetables, and most other solid foods, contain 40-70%.⁽¹⁶⁾

How much fluid does a child need?

Because children get their fluid from both food and drinks it is not possible to say how many glasses of water a child needs to drink. Generally children's fluid needs are based on their age and the energy or calorie/kilojoule value of what they eat and drink in relation to their weight. See Table 1 for examples. Their fluid requirements, will also vary with exercise, illness and climate.

Table 1 is **NOT TO BE USED** to calculate the glasses of water a child needs to drink in a day. No one can work this out unless a full diet history has been recorded. Fluid requirements include the fluid obtained from fruit, vegetables and other food and drinks.

Table 1: Example of fluid requirements for 6 children.

Age	Fluid requirement ⁽¹⁷⁾	Example for a Girl's weight	Example for a Boy's weight
4 years	70-80mls/kilogram/day	16 kilograms need 1.1 – 1.3 litres	17 kilograms need 1.2 – 1.4 litres
8 years	60-70mls/kilogram/day	25 kilograms need 1.5 -1.8 litres	25 kilograms need 1.5 litres-1.8litres
12 years	50-60mls/kilogram/day	42 kilograms need 2.1 -2.5 litres	40 kilograms need 2 – 2.4 litres

Fluid needs change with the weather, activity level and children's weight. We lose water when we breathe out, perspire, and go to the toilet. We also lose fluids when we are experiencing hot weather, hyperventilate, have diarrhoea, have a fever or very high temperature, sweat, and exercise, including swimming. This loss of fluid needs to be continually replaced.

Drinking enough fluid to prevent dehydration helps children's skills in mental functioning and co-ordination.⁽¹⁸⁾

Because children are smaller and do not sweat as much as adults, their bodies don't cool as efficiently as an adult's ⁽¹⁹⁾, so it is important children drink water before, during and after being active. ⁽²⁰⁾

For most children water should be the preferred drink. When children drink flavoured drinks, they tend to consume more fluid, than when drinking unflavoured drinks. However, these drinks have a higher sugar and acid content. Only for sports of long duration, e.g. more than one hour, would sports drinks be an advantage as they contain carbohydrates which can delay fatigue. ⁽²¹⁾

Water collection and treatment in Sydney.

Valleys collect rainwater. This water flows into streams and rivers.

A large river in a valley is dammed.

Dam water is either pumped or flows to a treatment plant.

Water is treated at the treatment plant.

Treated water is pumped and piped to homes, factories, schools and sports fields.

How does the treatment plant treat the water?

1. Water moving over the catchment area's soil and rocks, collects particles of clay, silt and dissolved impurities like metals, such as iron and manganese and micro organisms like bacteria.
2. To solidify these metals, potassium permanganate and ozone are added when necessary.
3. To remove the solidified metals and small particles causing water turbidity, ferric chloride and polymers are added. They form larger lumps by joining up with the metals and small particles.
4. The water then moves down through the layer of sand or sand and coal to trap and remove these larger particles (and many of the micro organisms) from the water.
5. The filtered water is then disinfected with chlorine or chlorine and ammonia. This is done to kill the remaining micro organisms like bacteria.
6. Fluoride is added, which is a mineral that helps prevent tooth decay.
7. A chemical is added to correct the pH as needed.
8. The water is then checked to see if it is good to drink. ⁽²²⁾

Learning Outcomes

PDHPE Content Strand 3 Personal Health Choices

Stage 1 – Healthy Habits

The children should be able to:

- Make simple health decisions
- Value their own health
- Identify different foods and drinks that can keep them healthy

Stage 2 - Daily Decisions

The children should be able to:

- Explain the importance of a balanced diet
- Explain the need for good health practices
- Make decisions as an individual
- Value their own health
- Recognise the need for making personal decisions that enhance health

Stage 3 - Considered Choices

The children should be able to:

- Describe the individual's responsibility for making their own health choices
- Explain possible consequences of health choices
- Discriminate between a variety of health products
- Form opinions based on an examination of relevant information
- Value their own health

Science and Technology

Stage 1

The children should be able to:

- Identify that living things need nutrients
- Interpret data and explain their observations

Stage 2

The children should be able to:

- Identify the forms and components used in the production of a design.
- Know and understand, materials and resources are used to produce goods and commodities.
- Recognise that designs are constrained by time, skills, tools and materials.
- Propose explanations using simple observations
- Show responsiveness to ideas

Stage 3

The children should be able to:

- Identify that systems are designed to provide particular services. For example systems can be transport, health, education.
- Systems are used to deliver and distribute goods

Water Activities

WATER

Teachers can use or adapt the following activities for water. These activities can be included into Water units from Science and Technology or units from the Personal Development, Health and Physical Education curriculum.

1. Ask each child to tell, draw or write:
 - What they drink in a day
 - When they drink in a day
 - Why they drink
2. Bring in a favourite drink.
 - Sort and classify drinks.
 - Graph results.
3. Sort and classify individual school drinks. Have lunch together and discuss drinks e.g. Taste, colour, drinks from home and school and bought from the school canteen.
4. Children may decide to have a class drink session. Plan the drinks. Take a photographic record. Discuss sequence of steps in planning. Write menu, relate to 2 & 3 above.
5. Small groups prepare and present drinks. Encourage children to try new drinks. Discuss drinks in terms of senses, likes and dislikes, healthy reasons. Written response activity – draw picture of new drink tasted. I liked it or I didn't like it. Collect responses for graphing, comparing likes / dislikes.

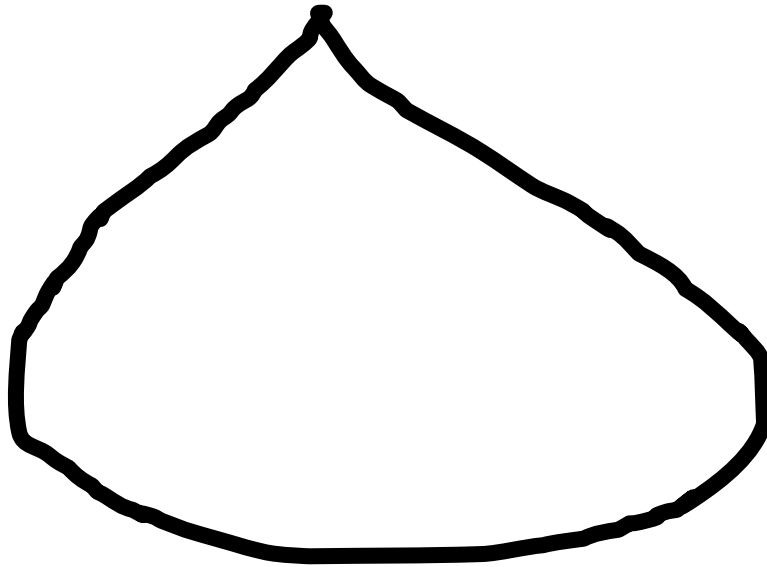
6. Reflect on drink session. Paint favourite part of drink session or use photos for illustrations. Children dictate caption. Make a big class book, children will decide to whom they will read this book to i.e. Share with buddies, peers. Small individual books can be made to take home.
7. Make a poster of the healthy eating pyramid and include drinks in it.
8. Survey school canteen to see which of the most and least preferred drinks are provided and identify the sometimes and always drinks.
9. In small groups examine different drinks. Blindfold an 'experimenter'. Collect sense vocabulary for a group book. Pages prepared for taste _____, looks _____, feels _____, smells _____, sounds _____, when I drink it. Emphasis is on hygiene and the safety aspect of drinking unknown things.
10. Investigate fluids, discuss "What I had to drink for lunch /for breakfast", give strips of paper to the children, draw each item drunk, share information, sort strips, classify.
11. Use picture, cardboard boxes, labels of fluids. Discuss where the fluids are stored. Sort by storage places. Discuss reasons for storage. Experiments: What happens to fluids out of correct storage?
12. Discuss the sequence of water production - cloud to tap. Where does water come from? Sequence activity, pictures and text to retell story.
13. Why do we need fluids? List reasons, for example toileting, dental care, hair care, washing. Discuss what fluids are best and why. Link in dental concerns re: soft drinks, sports drinks and fruit juice. Sort pictures/label cards as prepared. Paint a poster, 'Fluids I need'.

14. Sort and compare drinks from discussion into fluids we all drink and fluids some of us drink and fluids we drink often and fluids we drink sometimes. Are a variety of fluids important, why?

15. Share a book. For example *The Monster's Party*. Why have a party? What happens? What fluids are drunk? Discuss how our behaviour can affect our enjoyment of a meal (look at customs and hygiene). Write and illustrate a party with emphasis on fluids suitable for a party.

Early Stage 1

Design a drip



Here is a drip that you can make into a special character. You could make it into a 'Robot Drip' or a 'Space Drip'. Tell the other children in the class all about your drip.

Water

Draw yourself drinking at the school bubblers.

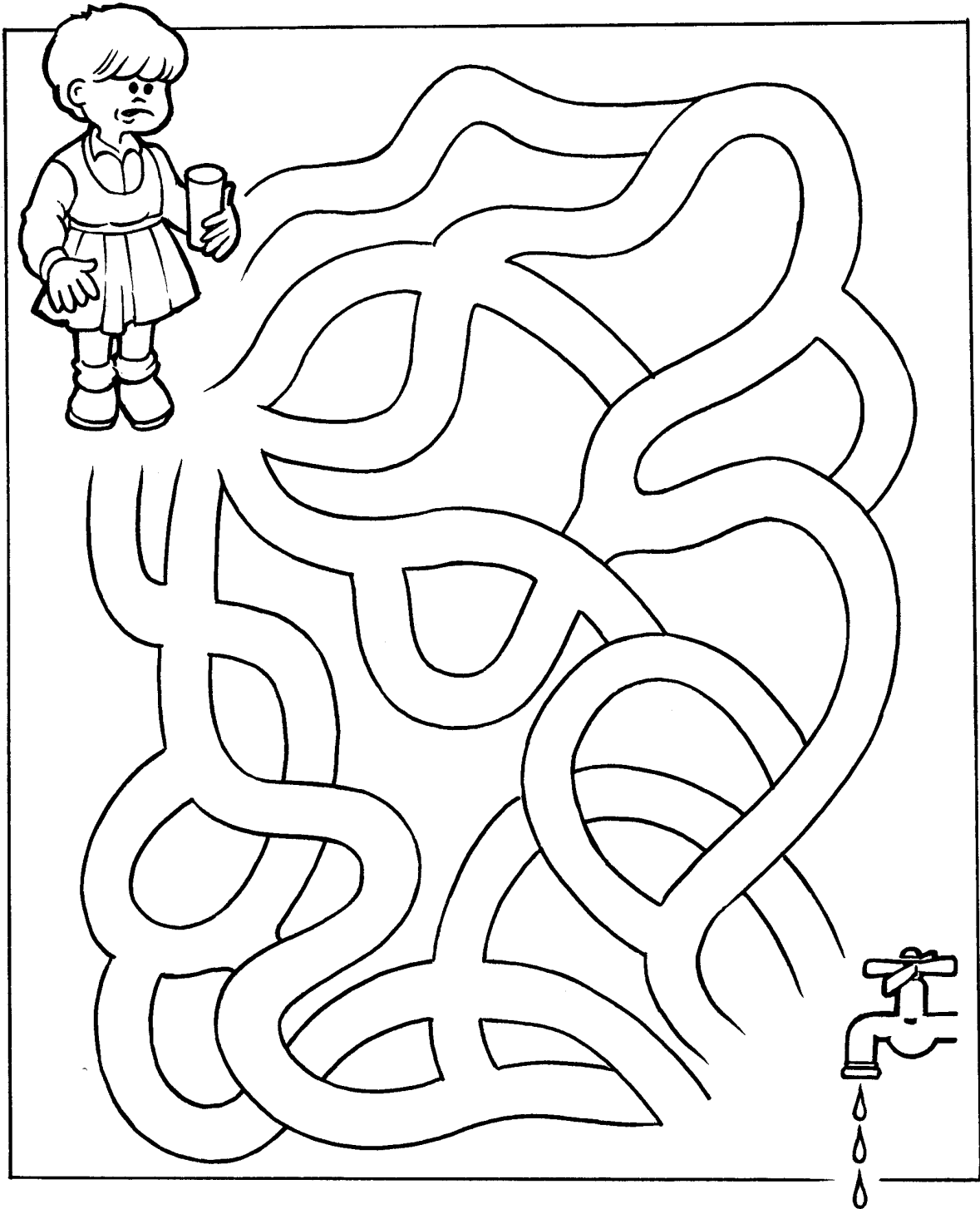
Draw yourself at home drinking from your kitchen taps.

Draw the drink bottle that you bring to school.

Draw your favourite healthy drink.

Water

Can you help the little girl? She is thirsty and needs to find a tap to get a drink of water?



Water

Unjumble this message about water.

I	drink
---	-------

If	I	water
----	---	-------

feel	thirsty
------	---------

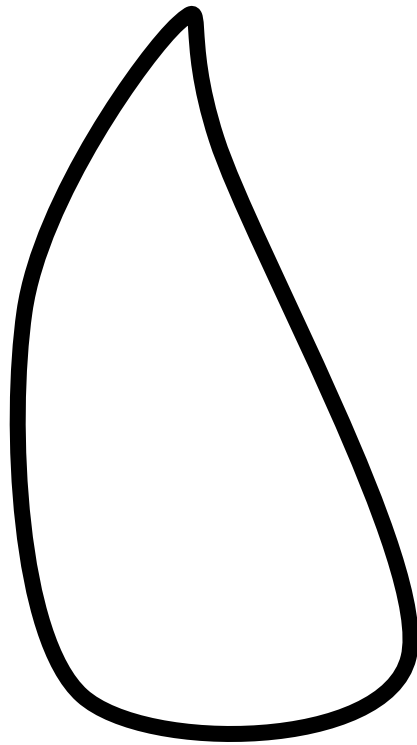
Stage 1

Key Messages for Stage 1 Activity Sheets

At the end of the lesson students will be able to:

- Make a decision to bring or buy a healthy drink for school the next day.
- Identify drinks and sources of drinks that can keep them healthy.
- Form a panel to discuss the advantages of drinking clean tap water and the disadvantages of using unclean river water.

Design a drip



Here is a drip from a healthy drink. Use your imagination to make him or her into a 'Dinosaur Water Drip' or a 'Robot Milk Drip'. Draw your drip in the place that you think they would live. Bring or buy a healthy drink for school tomorrow. Discuss the decision. Would it be easier to achieve this decision either at home or at school?

Water find - a - word

w	a	t	e	r	t	a	n	k	z
t	h	i	r	s	t	y	c	a	n
w	a	t	e	r	r	i	t	a	p
d	r	i	n	k	a	b	o	d	y
f	l	u	i	d	i	l	i	k	e
c	g	o	o	d	n	m	i	l	k
a	t	a	s	t	e	c	o	o	l
r	a	p	s	c	h	o	o	l	c
t	b	u	b	b	l	e	r	a	o
o	h	e	a	l	t	h	y	v	w
n	l	m	y	b	o	t	t	l	e

can

school

tap

healthy

drink

body

cow

thirsty

fluid

rain

good

cool

bubbler

carton

water

water tank

taste

my bottle

like

milk

In the word maze circle the words you can find. In the list tick the drinks, and the sources of drinks that can keep you healthy.

Water

Fill in the missing words.

1. One of the best drinks for to drink is water.
2. Our are made up of about 60% of water.
3. Most soft drinks have a lot of in them.
4. Water has no
5. All water starts as which goes into rivers and dams and is then sent to you through large.....
6. If all didn't have water they would become sick.

bodies

living things

rain

pipes

sugar

everyone

calories

Form a panel to discuss the advantages of drinking clean tap water and the disadvantages of using unclean river water.

Stage 2

Key Messages for Stage 2 Activity Sheets

At the end of the lesson students will be able to:

- Explain why drinking water is a good health practice.
- Make a decision to have a healthy drink at home or at school and list the decision making steps.
- Identify the forms and components used to design a water container.
- Know and understand the materials and resources used to produce clean drinking water in the city or on a farm.
- Explain the need for drinking water before, during and after being active.

Water

Fill in the missing words

1. We need to..... water every day.
2. Our are made up of 50 - 60% of water.
3. We need water to enable us to..... and to..... our food.
4. If we do not get enough water then we will become.....
5. If wewe need more fluids in our bodies.
6. It isto drink water from Sydney taps.
7. Soft drinks tend to have a lot ofin most of them, which is not good for our
8. All food we eat.....water.
9. Pure water has no taste or.....
10. Sydney water comes mainly from
11. There has beenput into our water supply.
12. Fluoride is used to prevent tooth.....

swallow	fluoride	contains	bodies	health
dehydrated	digest	sugar	exercise	decay
Warragamba Dam	smell	teeth	safe	drink

On the back of this page, write down why it is important to drink water.

Can you crack the code?

How to crack the code.

A-1	B-2	C-3	H-8	T-20	Q-17
K-11	R-18	S-19	V-22	J-10	E-5
D-4	G-7	N-14	W-23	X-24	Z-26
O-15	F-6	I-9	P-16	L-12	Y-25
M-13	U- 21				

1. Clue: You should drink this every day.

.....
23,1,20,5,18.

2. Clue: This drink has lots of sugar in it.

.....
19,15,6,20. 4,18,9,14,11.

3. Clue: This tells you who should drink water.

.....
5,22,5,18,25,15,14,5. 19,8,15,21,12,4. 4,18,9,14,11.

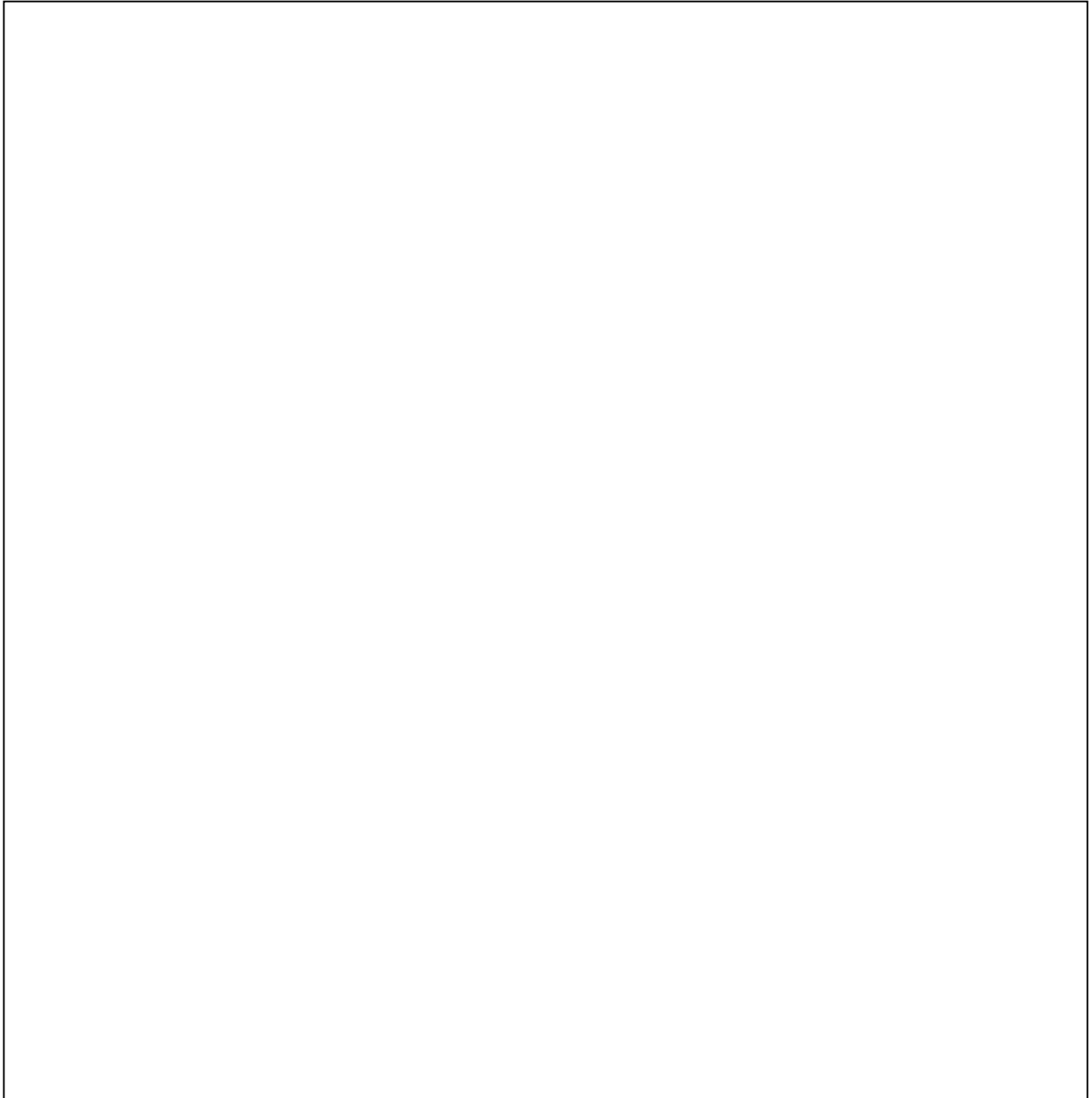
.....
23,1,20,5,18. 5,22,5,18,25. 4,1,25.

4.
23,8,1,20. 8,5,1,12,20,8,25. 4,18,9,14,11. 3,1,14. 9. 8,1,22,5?

Answer:

Design Task

Design a water container that you can use in the classroom. Remember that you have to be able to use it. Label the container and explain how it will work to the other children in your class.



Water find - a - word

s	p	e	c	i	a	l	w	e	a	t	h	e	r	d
p	l	j	k	a	k	t	s	w	a	l	l	o	w	e
o	c	i	d	d	l	v	h	s	u	p	p	l	y	h
r	c	o	k	d	b	o	i	l	w	a	t	e	r	y
t	o	d	t	e	c	d	r	f	e	r	a	i	n	d
g	n	e	e	d	s	o	d	i	g	t	s	f	c	r
s	w	e	a	t	y	u	g	r	e	f	e	h	h	a
s	t	r	e	a	m	r	g	h	i	s	y	s	l	t
t	b	o	t	t	l	e	d	d	d	n	e	h	o	e
d	h	u	m	a	n	t	a	s	t	e	k	o	r	d
c	v	i	f	a	v	o	u	r	i	t	e	t	i	a
d	r	y	r	e	x	e	r	c	i	s	e	u	n	f
s	o	f	t	s	u	g	a	r	f	h	l	e	e	s
t	a	n	k	s	t	c	o	o	l	f	b	o	d	y
s	p	r	i	n	g	n	u	t	r	i	t	i	o	n

sweat

human

drink

swallow

stream

exercise

chlorine

calories

needs

added

hot

supply

athletes

favourite

water

fluid

taste

tank

cool

bottled

dehydrate

dry

sport

weather

spring

odour

rain

body

like

sugar

good

nutrition

thirst

What should you do before, during and after being active? _____

Write why you need to do this? _____

Design Treatment for Water

Draw the sequence of materials and resources used to change rainwater into clean tap water for a home on a farm or a home in the city. Label the materials and resources, and explain how they work to the other children in your class.

Stage 3

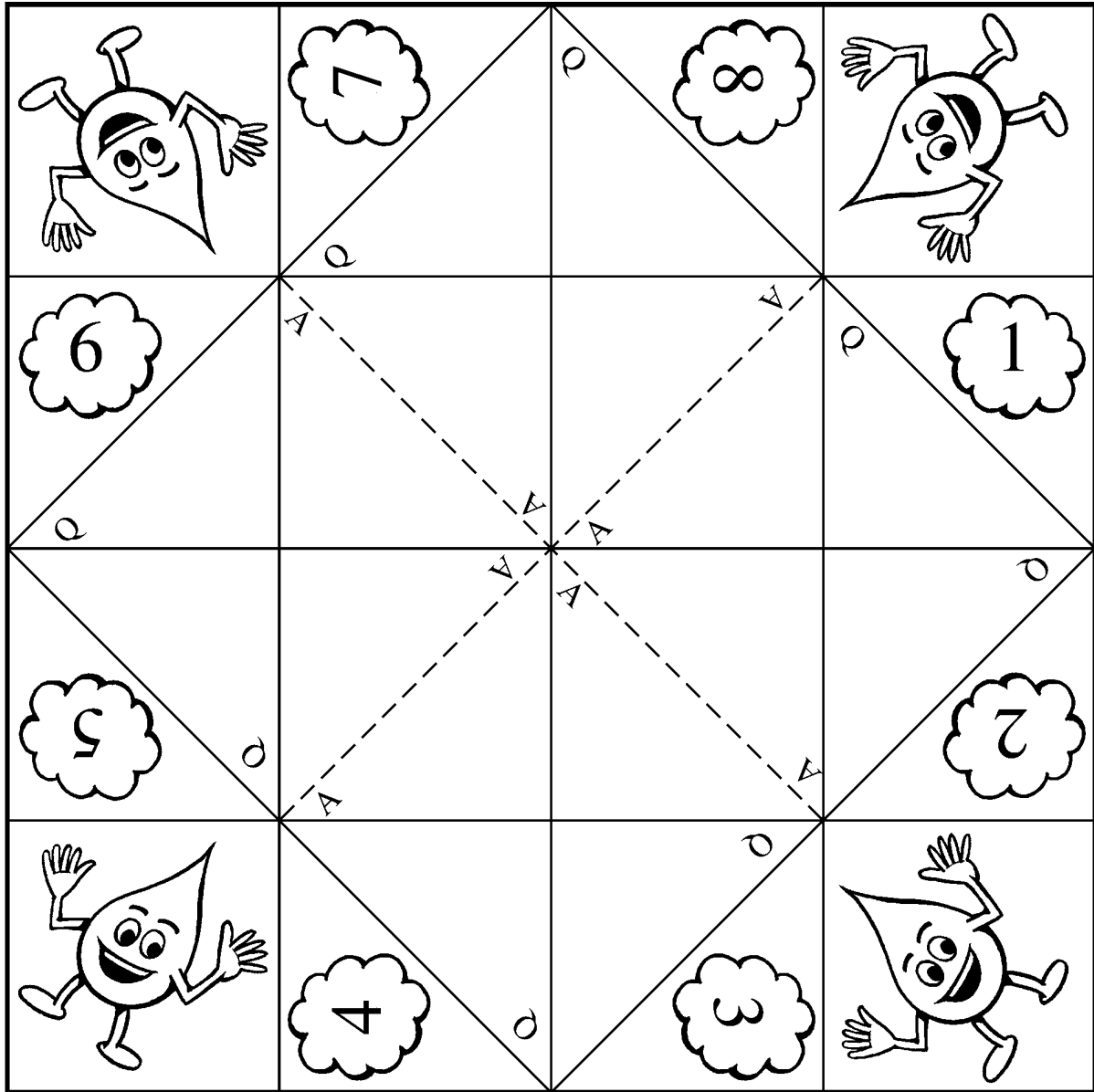
Key Messages for Stage 3 Activity Sheets

At the end of the lesson students will be able to:

- Know and understand that the water system is designed to provide tap water.
- Form an opinion based on examination of relevant information.
- Discriminate between a variety of drinks that meet a similar need.
- Know and understand the transport system used to deliver and distribute bottled water to home and school.

Water

Here is something for you to make. Try to fool your friends by asking them questions about water. Have fun!



1. Find the triangles with Q.
2. In each Q triangle, write a different question about what our water supplier does to provide water.
3. Cut out the large square.
4. Turn square over to blank side.
5. Fold the 4 corners to the centre.
6. Turn paper over.

7. Fold the 4 corners to the centre
8. Fold in half (Drips on outside).
9. Open, fold in half other way (Drips on outside)
10. Hold with thumbs on Drips, push 2 together.
11. Put fingers behind Drips.
12. Open up each question, and read it. In the triangle beside each question write the correct answer.

Drinks

Research and survey two of the following: the school canteen, a favourite fast food outlet and a shop your family buys drinks from. Write down the type and variety of drinks offered by these shops.

Survey students as to the type and variety of drinks used at school and at home.

For both surveys, place the drinks on the Australian Guide To Healthy Eating. Where do these drinks belong? Which food group are they in? Are they in the choose sometimes or in small amounts group? Are they in the drink plenty of water group?

Decoding drink labels

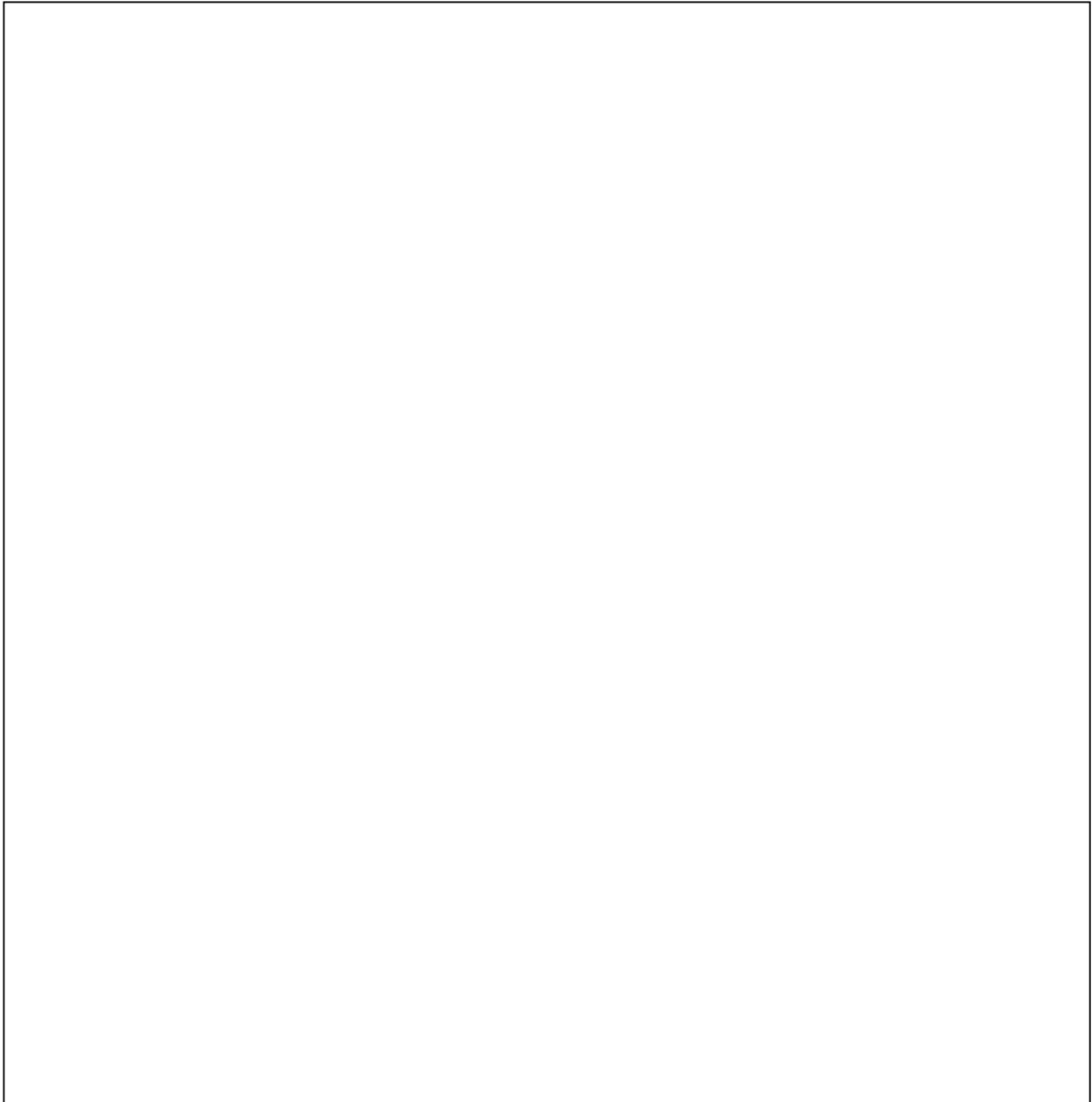
1. Collect a variety of packaged drinks and write down their cost.
2. Check the labels for the name of the product, net weight, name of the manufacturer, major ingredient, any sugar, any salt, artificial colouring or flavouring and preservatives and how these are registered on the label.
3. Decide from this information whether the food product is healthy or not.

Lifting the Lid on Advertising

1. Cut out advertisements for drinks from one or two of the following: promotional and advertising mail, local papers, weekend papers and magazines.
2. Sort them into groups.
3. Identify which advertisements are health related.
4. How many advertisements are health related?
5. What are they promoting?
6. Discuss how affective the advertisement is.

Design Task

How does a bottle of mountain spring water reach your home and school? Draw the stages of who carries the water and how they carry the water. Label the carriers and explain how they carry the water, to the other children in your class.



Discover the kilojoules

Step 1. Examine the following table.

Step 2. Drinks are shown in volumes people use. The 2nd column beside them shows the grams of sugar in these drinks.

Step 3. Find the number of teaspoons of sugar in these drinks by dividing the *Sugar in grams* column by 5. Write the answers in the *Teaspoons of sugar* column.

Step 4. What drinks have sugar as the main source of kilojoules? To find out, multiply the *Sugar in grams* column by 16 and write the answer in the *Kilojoules from sugar* column.

Step 5. Is the *Kilojoules from sugar* column the same or different to the *Kilojoules in drink* column.

Step 6. Why are some of them different?

Step 7. What other nutrients do these drinks have that provide the extra kilojoules?

Drink and size of drink	Teaspoons of sugar	Sugar in grams	Kilojoules from sugar	Kilojoules in drink
Tap water 1 glass 250mls	0	0	0	0
Mineral water with juice 1 can 375 mls		36		576
Natural mineral water 1 can 375mls		0		0
Packet orange juice drink 1 glass 250mls		29		513
Packet orange juice no added sugar 1 glass 250 mls		19		355
Soft drink 1 can 375 mls		45		720
Full cream plain milk 1 glass 250 mls		12		678

Resources for Schools

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For more information contact:

For The Australian Guide To Healthy Eating, NSW Better Health Centre, 02 9816 0452

Department of Land and Water Conservation

Local supplier of water e.g. Sydney Water

Public Health Unit in your health area/region/district

State Environmental Protection Authority

Streamwatch

Sydney water web site www.sydneywater.com.au

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