

SECTION 2

UNITS AND GUIDELINES – RESPONSIBLE DRINKING

Understanding that similar drinks contain different concentrations of alcohol can be hard to grasp and boring. We suggest that you collect empty bottles, cans and glasses and use a coloured liquid to allow pupils to estimate the number of units in different drinks. It may be wise to start with an explanatory film clip such as alcoholeducationtrust.org/teacher-area/units-and-guidelines/drinkaware_what_is_a_unit/

The **Alcohol Clock Game** in our Online Learning Zone talkaboutalcohol.com can be used to check understanding and to reinforce how long it takes for alcohol to be broken down by the body after your demonstration. Other resources in the zone that may be useful include **Match Numbers game**, **How much is too much?** and **Test your knowledge**.

This section looks at pour sizes, units, alcoholic strength, the importance of reading back labels and understanding the guidelines that apply to adults. It discusses why young people under 18 are advised not to drink and what blood alcohol concentration (BAC) is. It should be noted that low risk guidelines are for those over 18 of good health. The following advice for parents from the UK Chief Medical Officers applies to those under the legal drinking age:

- o *An alcohol-free childhood is the healthiest and best option.*
- o *If children do drink alcohol, they should not do so until they are at least 15 years old.*
- o *Drinking alcohol can damage a child's health, even if they're 15 or older.*
- o *If 15 to 17 year-olds drink alcohol, it should be rarely, and never more than once a week. They should always be supervised by a parent or carer.*
- o *If 15 to 17 year-olds drink alcohol, they should never exceed the recommended adult weekly limits (14 units of alcohol for both men and women). One unit of alcohol is about half a pint of beer or ordinary lager or a single measure of spirits (25ml).*



The Alcohol Clock Game on talkaboutalcohol.com



What Is A Unit And How Much Is Too Much? on talkaboutalcohol.com

MODEL LESSON PLAN 2

UNITS AND GUIDELINES



This selection of activities is important to help students to understand that similar drinks can contain different concentrations of alcohol. The aim is to give them a better understanding of units and UK government guidelines for responsible drinking for adults. The session also outlines how the body processes alcohol and the effects it can have both physically and on behaviour and risk.

The PowerPoint offers the facilitator a choice of activities in this lesson. Slides/activities can be taken out of the PowerPoint when the activities have been selected.

AGE RANGE: 12-14

LESSON LENGTH: 50 mins



alcoholeducationtrust.org/pilot_lp2_units_and_guidelines_final/

LEARNING OBJECTIVES:

Students will

- Learn about units of alcohol and how alcohol is processed by the body
- Learn about the health and safety risks in binge drinking

INTENDED LEARNING OUTCOMES:

Students will be able to

- Explain what a unit of alcohol is and identify the units in different drinks
- Describe how adults can reduce the risks associated with alcohol
- Explain how alcohol can build up in the body and how it is broken down
- Assess the risks of binge drinking.

PREPARATION:

See [Getting started notes](#), [Facts and figures](#) and [Commonly asked questions](#).

Look at instances in the lesson plan that offer options for alternative activities and select the ones that are most appropriate for the age and abilities of your class.

RESOURCES REFERENCED WITHIN THE POWERPOINT:

How Many Units worksheets - [blank](#) and [completed](#) or [Simplified](#) version

Talk About Alcohol - What is a unit and how much is too much? (accessed via the Fact Zone)

talkaboutalcohol.com/how-much-is-too-much/

Talk About Alcohol - Alcohol Clock (accessed via the Challenge Zone)

talkaboutalcohol.com/alcohol-clock/

Full guidance on the alcohol clock game

alcoholeducationtrust.org/wp-content/uploads/2019/08/alcohol_clock_game.pdf

RESOURCES:

- Details of where students can go for support for alcohol-related concerns both within school and locally.
- An empty box for students to leave confidential questions in (the 'ask it basket') see 'Getting Started'.

If doing Option A, you will need

- Empty bottles cans and containers of differing alcoholic drinks such as a can and bottle of beer, a spirits bottle, cider and wine
- An empty measuring jug that can measure 25ml- 250ml
- A bottle of squash (diluted)
- A wine glass and glass for spirits
- Pens and scrap paper
- Print outs of the 'How many units' blank worksheet and one of the completed answer sheets, appropriate for your class.

The alcohol clock game

You will need:

12 pieces of paper numbered 1- 12 representing the numbers on a clock face

If you play the version of this game with children standing around the clock, then you will need a clear big space in the classroom. Alternatively, for smaller groups, you can do a table-top version of the game, but you will need counters or sweets such as jelly babies to use instead of the students physically standing up and representing units.



ICEBREAKER ACTIVITY: (5 mins)

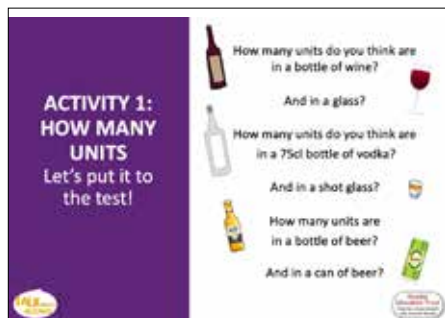
Quick fire questions - stand up sit down activity / show of hands.



ACTIVITY 1: How many units? (20 mins)

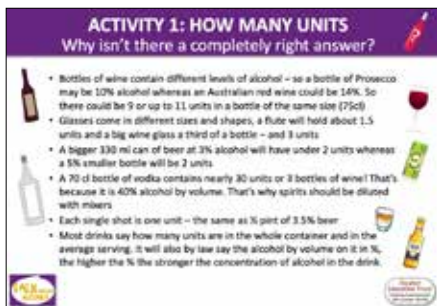
Choose to do either Option A - Whole class activity on how many units are in certain drinks, then working in pairs complete a worksheet OR Option B - use the interactive learning zone version.

A) - Whole class activity (default)

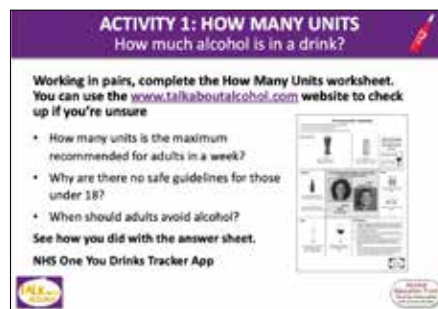


It is best to have a set of empty cans and bottles and glasses plus a jug of coloured squash to bring this activity to life. Hold up each container or glass and ask the children to put their hands up and estimate how many units are in each.

Take the opportunity to turn to the back label and show how it shows the number of units and alcoholic strength of each drink. You can ask a child to come and pour what they think a unit of vodka is for example and demonstrate how it is usually overestimated.



Work in pairs to complete a worksheet



Give out copies of the 'How many units' blank worksheets for each student.

Once the task is completed hand out copies of the answer sheet.

If you have online access students might like to use the drinkaware.co.uk/understand-your-drinking/unit-calculator

B) Pairs or small group activity



This is an alternative way for the students to look at how many units are in different drinks and what adult guidelines are.

Ask students to use the interactive learning zone talkaboutalcohol.com, to complete the 'What is a unit and how much is too much?' activity (accessed via the Fact Zone - Units and Guidelines).

Ask them to work in pairs or small groups and to find out how many units are in different drinks.

Key points

- A larger volume doesn't mean more units – a large can of beer at 3.5% has about the same amount of units (2) as a small bottle of beer e.g. Peroni or Corona at 5%
- A bottle of wine can vary from 9 units at 11% to 11 units at 14%
- A 125ml flute of champagne will have 1.5 units whereas a 250 ml glass of wine at 13% will contain 3 units
- Ask the young people to estimate a 'shot' or unit of spirits. Ask them how many are in a bottle – they are always shocked that a 75cl bottle will contain nearly 30 units, the same as 3 bottles of wine.

For both options, continue with the PowerPoint using the presenter notes.

Why do we have units and what are the weekly guidelines?

ACTIVITY 1: HOW MANY UNITS
Why do we have units and guidelines?

- Units are a simple way of expressing the quantity of pure alcohol in a drink.
- One unit equals 10ml or 8g of pure alcohol, which is around the amount of alcohol the average adult liver can process in an hour. This is a pint of beer, a glass of wine or one shot of vodka.
- This means that within an hour there should be, little or no alcohol left in the blood of an adult, although this will vary from person to person.
- The number of units in a drink is based on the size of the drink, as well as its alcohol strength.
- To help us work out how much is too much.
- To balance the benefits and risks of drinking as adults.
- To understand when not to drink.

1 unit = 10g of pure alcohol

A small alepong, a half pint of beer, half a glass of wine or one shot of spirits

ACTIVITY 1: HOW MANY UNITS
What is a drink?

Water or a soft drink = 0 units

Small alepong or 1/2 a pint of beer = 1 unit

A pint of beer or a medium glass of wine (175ml) = 2 units

A large glass of wine (250ml) or a can of strong lager = 3 units

Starting before or while drinking is better

Drinking plenty of water or soft drinks keeps people hydrated and in control. It saves money too!

ACTIVITY 1: HOW MANY UNITS
Weekly guidelines/units

- Guidelines for low risk drinking are set at a level where there's little harm for adults of good health. Having one or two alcohol free days is a good habit too.
- Adults shouldn't save up units to drink on one or two nights, this is 'binge drinking'.

Men and women should not regularly drink more than 14 units a week

ACTIVITY 1: HOW MANY UNITS
Weekly guidelines/units

What does 14 units look like?

A pint of beer, lager or cider at 4% alc (3.3 units) x 6

A 330ml bottle of beer, lager or cider at 5% (1.7 units) x 8

A 50ml measure (shot) of spirits at 40% alc (1.0 units) x 7

A 125ml glass of sparkling wine at 11% (1.4 units) x 10

A 175ml glass of wine @ 12% alc (2.1 units) x 6

Men and women should not regularly exceed 14 units a week, spread over a few days

M T W T F S S

How is alcohol broken down in the body?

ACTIVITY 1: HOW MANY UNITS
How is alcohol broken down by our bodies?

Alcohol is absorbed into your body through the stomach and small intestines. Food slows this down.

Alcohol then flows into the bloodstream throughout the body.

This happens quickly - within a few minutes on an empty stomach, more slowly after food

Absorption of Alcohol

In the small intestine, alcohol passes rapidly into the bloodstream

In the large intestine, alcohol passes more slowly into the bloodstream

ACTIVITY 1: HOW MANY UNITS
How is alcohol broken down by our bodies?

The role of the liver

- 90-95% of alcohol is broken down by the liver into CO₂ and water.
- Different people will process alcohol at different speeds due to size and metabolism.
- Your body breaks down alcohol at a rate of roughly one standard drink per hour, so drinking more than one unit of alcohol an hour will build up your blood alcohol concentration (BAC) and it may be many hours before it is safe to drive.
- In women BAC rises more quickly due to less body water and less of the enzyme ADH in the liver which breaks down alcohol.

Stress that most adults who drink do so responsibly and find it a sociable and relaxing thing to do. In England, 82% of adults drink alcohol and 78% of all adults (including 18 – 24 year olds) drink within the low risk guidelines of 14 units or less a week. For Scotland the figures are 84% and 76% respectively. If these approximately 7 drinks are spread over the week with one or two alcohol free days, then this fits in with a healthy diet and lifestyle. However, there are times when drinking any alcohol should be avoided. Follow bullets on the PowerPoint slide.

ACTIVITY 1: HOW MANY UNITS
.. and when not to drink

There are times when drinking too much - or at all - can cause problems. For example:

Don't:

- Drink and drive
- Operate machinery, use electrical equipment or work at heights after drinking
- Drink heavily before playing sport
- Drink while on certain medications - ask the doctor if unsure
- Binge drink - it can lead to health and other problems
- Drink regularly over the low risk guidelines

The same amount of alcohol has a much greater effect on the body and organs of a young person than on an adult, because your body (especially brains and liver) are still growing and developing. That's why there's no safe level of drinking for under 18s.

Highlight the short term risks of excess drinking, including a hangover, possible alcoholic poisoning, passing out and loss of memory, increased risk of unprotected sex and being vulnerable to injury or crime.

Prolonged abuse of alcohol can lead to addiction and causes many life threatening conditions including heart disease, haemorrhagic stroke, cancers of the liver, breast, mouth and throat, as well as cirrhosis of the liver and addiction.

Note

- The guidelines do not apply to under 18s as young people's liver and brains are not fully developed and so alcohol has more of an effect.
- Young people who drink regularly or get drunk before the age of 16 are at greater risk of having problems with drinking later in life. Short-term, they have an increased likelihood of accidents and anti-social behaviour or other risky behaviour such as unprotected sex, taking drugs and also of experiencing gambling-related harms.

ACTIVITY 2: The Alcohol Clock Game (15 mins)



Choose to do either Option A - Group activity OR Option B - use the version of the game online.

Option A) Group activity (default)

Divide the class into groups to plan an 18th Birthday party. They should create a plan with the time next to each activity. E.g. 7 - 8pm 4 friends get ready at Emma's house and share a bottle of prosecco.

If possible, give them access to a unit calculator or unit information.

They should think about:

- Where they meet and get ready
- How much and what they drink
- When and what would they eat
- How many people are involved
- Where they go at what time
- How they plan to get home.



Play the Alcohol Clock Game as a group:

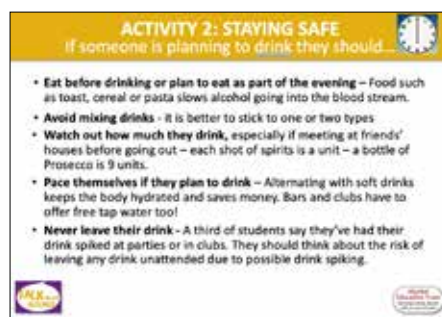
Layout the numbers of the clock and ask each group to nominate a spokesperson for their scenario. Get all the students to estimate how many units are being consumed.

Option B) Online version

If you prefer the class to work individually or in pairs in order to create and follow their own plans for an evening with friends, ask the class to complete the interactive virtual night club activity on talkaboutalcohol.com. This allows students to see how the units might add up depending on the choices made!



For both options, conclude this activity by running through the slide on tips to stay safe for those who plan to drink.



Discuss the concept of 'pacing' by alternating drinks with water or alcohol free alternatives, the importance of eating (as it helps slow alcohol metabolism) and that drinking on an empty stomach increases the rate that alcohol is absorbed into the bloodstream.

Raise awareness of the alcohol content of different drinks and why to avoid mixing drinks. Mention the dangers of drink spiking - there is more information on our [drink spiking sheet](#) with [additional information for teachers](#).

Stress the importance of leaving their mobile on and to call a parent or trusted adult if there are any problems.

PLENARY: (5 mins)

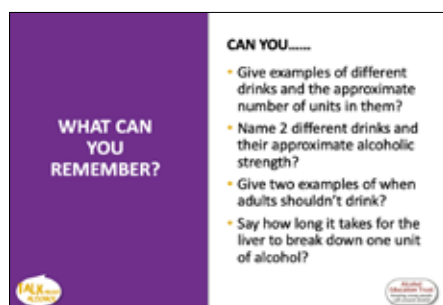


Briefly recap what has been covered in the lesson using the Learning Objectives.

Signpost students to staff in school and external agencies where they can go for additional support around alcohol issues.

Promote talkaboutalcohol.com as a source of further information, resources and activities.

ASSESSMENT FOR LEARNING: (5 mins)



Ask students to:

- Give examples of different drinks and the approximate number of units in them.
- Name 2 different drinks and their approximate alcoholic strength.
- Give two examples of when adults shouldn't drink
- Say how long it takes for the liver to break down one unit of alcohol.
- List 2 things to think about in order to stay safe, for those who choose to drink.

EXTENDED PROJECTS:



If you haven't used the online version of the alcohol clock game in class, show students the online version of the alcohol clock game. Encourage them to look at it as homework and to have a go at the interactive virtual night club to see how choosing different drinks and activities gives different outcomes! talkaboutalcohol.com/alcohol-clock/

HOW MANY UNITS IN A DRINK? - WORKSHEET

1. Fill in how many units you think are in each drink
2. How many units are adults allowed?
3. Why are there no safe guidelines for those under 18?

Beer and Cider



A pint
of lower strength (4%)
lager, beer or cider



A 500ml can
of higher strength (7.5-9%)
lager or beer or cider

CHECK THE LABEL

Most drinks tell you
how many units are
in them

Know your limits

Units of alcohol
per 125ml glass



Alcopops



A small bottle (275ml) of
lower strength (4%) alcopop

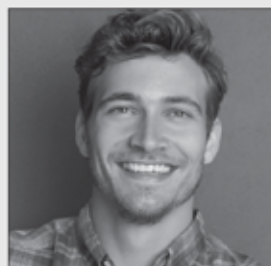
A large bottle (700ml) of
higher strength (5%) alcopop

**The UK Chief Medical Officers recommend that
adults do not regularly exceed:**



_____ units a
week
for women

_____ units a
week for men



Spirits



A single measure of spirit
(40%)



A double measure of spirit
(40%)

Wine



A standard glass (175ml) of
lower strength (12%)
wine or champagne



A small glass (125ml) of
higher strength (14.5%)
wine

CMO Guidance:

- (1) Children and their parents and carers are advised that an alcohol-free childhood is the healthiest and best option. However, if children drink alcohol, it should not be until at least the age of 15 years.
 - (2) If young people aged 15 to 17 years consume alcohol it should always be with the guidance of a parent or carer or in a supervised environment.
 - (3) Parents and young people should be aware that drinking, even at age 15 or older, can be hazardous to health and that not drinking is the healthiest option for young people.
- If 15 to 17 year-olds do consume alcohol they should do so infrequently and certainly on no more than one day a week. Young people aged 15 to 17 years should never exceed recommended Government guidelines.

HOW MANY UNITS IN A DRINK?

1 =



A small bottle (275ml)
of lower strength (4%)
alcopop



A half pint
of lower strength (4%)
lager, beer or cider



A single
measure of
spirit (40%)

CHECK THE LABEL

Most drinks tell you
how many units are
in them

Know your limits

Units of alcohol
per 125ml glass



2 =



A standard glass (175ml)
of lower strength (12%)
wine or champagne



A pint
of lower strength (4%)
lager, beer or cider



A 440ml can
of medium strength (4.5%)
lager, beer or cider



A double measure of
spirit (40%)

3 =



A pint of
medium strength (5%)
lager, beer or cider



A large glass (250ml)
of lower strength
(12%) wine



A large bottle (700ml)
of lower strength (4%)
alcopop

The UK Chief Medical
Officers recommend
that adults do not
regularly exceed:



**14 units a week
for both men and
women.**

4 =



A large bottle (700ml)
of higher strength (5.5%)
alcopop



A 500ml can
of higher strength (7.5%)
lager, beer or cider



Drinks should be
spread over a number
of days. There are no
safe limits for under
18 years of age.

HOW MANY UNITS IN A DRINK?

NHS and UK Chief Medical Officers' advice on units and drinking guidelines

What is a unit and how much is too much?

Beer and Cider



A pint
of lower strength (4%)
lager, beer or cider
2 UNITS



A pint
of medium strength (5%)
lager, beer or cider
3 UNITS



A 440ml can
of medium strength (5%)
lager or beer or cider
2 UNITS



A 500ml can
of high strength (7.5-9%)
lager or beer or cider
4 UNITS

Alcopops

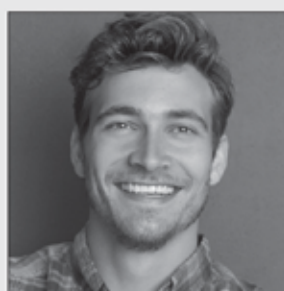


A small bottle (275ml) of
lower strength (4%) alcopop
1 UNIT

A large bottle (700ml) of
higher strength (5%) alco-
pop
3.5 UNITS

**The UK Chief Medical Officers recommend
that adults do not regularly exceed**

**14 units a week
for both men and women**



Spirits



A single measure of spirit
(40%)
1 UNIT



A double measure of spirit
(40%)
2 UNITS

Wine



A standard glass (175ml) of
lower strength (12%)
wine or champagne
2 UNITS



A small glass (125ml) of
higher strength (14.5%)
wine
2 UNITS



A large glass (250ml) of
lower strength (12%)
wine
3 UNITS

CHECK THE LABEL
Most drinks tell you
how many units are
in them

Know your limits

Units of alcohol
per 125ml glass



CMO Guidance :

- (1) Children and their parents and carers are advised that an alcohol-free childhood is the healthiest and best option. However, if children drink alcohol, it should not be until at least the age of 15 years.
- (2) If young people aged 15 to 17 years consume alcohol it should always be with the guidance of a parent or carer or in a supervised environment.
- (3) Parents and young people should be aware that drinking, even at age 15 or older, can be hazardous to health and that not drinking is the healthiest option for young people.
If 15 to 17 year-olds do consume alcohol they should do so infrequently and certainly on no more than one day a week. Young people aged 15 to 17 years should never exceed recommended Government guidelines.

TEACHERS NOTES

How much alcohol is in a drink? (Science/environmental studies worksheet 7 or How many units? pictorial worksheet)

Target age group: 12 - 16 year-olds

Structure: 1 written lesson

Preparation:

EITHER Download/photocopy the blank pictorial worksheet [How many units?](#) and a completed answer sheet - You can choose between the [simple](#) or more [complex](#) sheets.

The worksheet prompts students to work out how many units are in different types of drink. Ensure that you also make copies of the answer sheet, at least one between 2, so that they have the right information at the end of the lesson.

OR Download/photocopy [How much alcohol is in a drink](#) sheet (at least 1 between 2).

Objectives

- o To show that alcoholic drinks may contain different amounts of alcohol.

Notes

The calculations and graph could be finished for homework.

Why are young people advised not to drink? PSHE/PSD 14 - 16 worksheet 2

Target age group: 14 - 16 year-olds

Structure: 1 lesson

Preparation: Download/photocopy [Why are young people advised not to drink?](#) sheet.

Access to the Internet for research if possible.

Objectives

- o To establish why alcohol is more dangerous for young people than for adults.
- o To encourage students to explore a range of reasons.
- o To encourage them to consider the merits of each reason.

Notes

This is a simple activity that could be done individually, in small groups or as a class. If it is done in groups or individually, the results could be collated for the class. This is best done by students awarding their top reason 8 points, second top 7 points, etc., then adding up all the points for each reason from among the groups. The reason with the largest number of points overall is, on average, the most important reason. This process is very likely to encourage debate and disagreement which will help the students consider the issues.

Responsible drinking (Science/environmental studies worksheet 10)

Target age group: 11 - 16 year-olds

Structure: 1 written lesson

Preparation: Download/photocopy [Responsible drinking](#) sheet (at least 1 between 2).

Objectives

- o To understand why adults should not drink in certain situations (risk groups).
- o To understand the effect of alcohol on young people.
- o To understand why there are no safe limits for alcohol consumption for young people.

Notes

The calculations and graph could be finished at home.

What is BAC? (Blood Alcohol Concentration) (Science/environmental studies worksheet 8)

Target age group: 14 - 16 year-olds

Structure: 1 written lesson

ICT opportunity: Internet research

Preparation: Download/photocopy [What is Blood Alcohol Content \(BAC\)](#) sheet (at least 1 between 2).

Optional: Internet access to talkaboutalcohol.com

Objectives

- o To explain what is meant by BAC.
- o To introduce factors which can affect the BAC.

Notes

Internet research could be done at home. The calculations and graph could be finished for homework.

Have they understood? - The Alcohol clock game

A great way to reinforce how long it takes for alcohol to be broken down by the body and how units accumulate is to play the [Alcohol clock game, page 48](#) or the interactive version in our Online Learning Zone talkaboutalcohol.com.

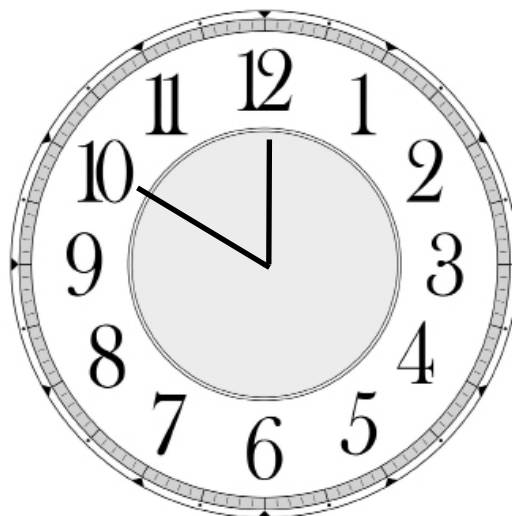
Target age group: 14 - 16 year-olds

Structure: 1 lesson to follow units and drinks demonstration and explanations.

Preparation: write the numbers of the clock one to 12, each on a separate A4 piece of paper.

Objectives

- o To demonstrate through a fun activity how units accumulate in the body and how the liver breaks down units over time.
- o To demonstrate how quickly you can drink a lot of alcohol and how this can have implications for safety in getting home and driving the next day.



HOW MUCH ALCOHOL IS IN A DRINK?**SCIENCE/ ENVIRONMENTAL STUDIES 12 - 16 WORKSHEET 7**

The alcohol content of drinks can vary enormously. It depends on the type, size and strength of the drink.

Units are the official measurement of alcohol in the UK. A 'unit' is equivalent to 8 grams of pure alcohol, but the alcohol volume in products varies a lot. It's not as simple as one drink = one unit. Some strong beers contain nearly 3 units per pint rather than the 2 units found in ordinary strength lager. The measures may vary too (a 'double' vodka will have double the units), while a medium glass of white wine (175ml) can be over 2 units.

There is a formula which can be used to work out how much alcohol is in a drink. You need to know how strong the drink is (alcohol by volume %) and how big the glass or bottle is (ml). You can work out how many grams of alcohol are in a drink using this calculation:

$$\frac{\text{volume of glass/bottle (ml)} \times \text{ABV* (\%)}}{1000}$$

(*ABV = alcohol by volume).

If you know the number of grams of alcohol, you can also work out the number of units in the drink. (There are 8g of pure alcohol in one UK unit).

ACTIVITY ONE

1. Fill in the empty columns in a table similar to the one shown. Use the formula to work out the number of grams of alcohol in each of the drinks listed. Then calculate the number of units.
2. Plot a bar chart of your results.
3. What conclusions can you draw?

Drink	Volume of glass/ bottle (ml)	ABV (%)	Grams of alcohol	Units (give to nearest 0.5 unit)
Beer, lager or cider	330 ml bottle	5		
Beer, lager or cider	440 ml can	5		
Beer, lager or cider	500 ml can	9		
Cider	1 litre bottle (1000ml)	9		
Wine	125 ml glass	12		
Wine	175 ml glass	12		
Wine	Half bottle (375 ml)	12		
Spirits	25 ml measure	40		
Spirits	35 ml measure	40		
Sherry or port	50ml measure	40		

WHY ARE YOUNG PEOPLE ADVISED NOT TO DRINK?**PSHE 14 -16 WORKSHEET 2**

Lots of adults enjoy drinking alcohol and most adults drink sensibly, but laws in the UK are designed to stop young people buying and drinking alcohol until they are 18, unless they are being supervised by their parents. But why should young people think before they drink alcohol?

Here are the views of some people. All the facts that are included are correct, but some of the comments are just people's opinions. Put them in order to show which you think is the best, most persuasive reason through to the least persuasive. (Write 1 beside the best reason, 2 beside the next best reason, etc.)

Fact/ Opinion	Rank 1= most important 8 = least important
"You can drink a lot of alcohol in a short time but only start to feel the effects later, by which time it may be too late. Young people don't have the maturity to know when to stop."	
"Young people's bodies are still growing. They're affected by alcohol more than adults and alcohol can be dangerous."	
"There's enough to cope with when growing up without having to deal with alcohol as well. If teenagers are struggling with problems, alcohol isn't going to help."	
20% of all admissions to hospital Accident and Emergency departments are linked to alcohol and 22% of accidental deaths are alcohol related, many are young men.	
"You have to learn to drink alcohol sensibly - to know how it affects you, when to stop, and when it changes your judgement. Until you're a young adult, it's too risky because you may make really serious errors. We're talking about injury and even death."	
"Alcohol is absorbed quickly into the bloodstream and travels to the brain. Here it acts as a depressant, slowing down the way in which the brain and body works. It affects thinking and actions and that's when accidents happen."	
"There's a lot of pressure on young people to do the same as everyone else so they can end up drinking a lot just to look cool, even if they don't want to."	
"Alcohol can make you uninhibited. This can make you say or do things you regret later."	

RESPONSIBLE DRINKING**SCIENCE/ ENVIRONMENTAL STUDIES 11 - 16 WORKSHEET 10****Responsible Drinking**

There are guidelines for the maximum amount of alcohol an average adult can drink without risking their health. But adults can't just drink whenever they like - there are times when they shouldn't drink alcohol at all. There are laws which restrict the purchase and consumption of alcohol by young people under the age of 18.

Read the information about responsible drinking and risk groups below, then answer the questions.

How much can adults drink?

In the UK, guidelines for adults who choose to drink alcohol are based on the number of 'units' of alcohol. One UK unit contains 8 grammes of pure alcohol. The UK government recommends that adult men and women don't drink more than 14 units a week. Consistently drinking more than this amount can mean serious health risks.

But there are times when adults should not drink at all.

Adults should avoid drinking alcohol:

- Before driving
- Before
 - operating machinery
 - working at a height
 - doing sports or swimming.
- When taking certain drugs and medicines: it's not safe to use some drugs and medicines and drink alcohol (information is usually given on the label of the medicine).
- When pregnant: drinking alcohol during pregnancy can harm the developing baby.

Under 18s

Laws regulate purchase and consumption of alcohol by young people under the age of 18. That's because they are less equipped to cope with the effects of alcohol, physically and emotionally. The same amount of alcohol will have a much greater effect on the body of a child or young person than on an adult, because their body is still growing and developing. Also a young person doesn't have the experience needed to deal with the effects of alcohol on judgement and perception.

In the short term, drinking and getting drunk can be dangerous for young people. They may do or say something they regret later, and they're much more likely to have an accident or get into trouble. In the longer term, drinking can affect their school work, social life and friendships as well as their general health. They'll also be in trouble if they break the laws about buying and drinking alcohol.

RESPONSIBLE DRINKING**SCIENCE/ ENVIRONMENTAL STUDIES 11 - 16 WORKSHEET 10****ACTIVITY ONE**

Answer these questions in pairs or small groups. There is information to help you in the Fact Zone of our Online Learning Zone talkaboutalcohol.com.

1. Referring to the short term effects of alcohol, explain why adults should not drink alcohol before operating machinery or working at height.
2. Give three examples of 'serious health risks' which may result if an adult regularly drinks more than the maximum recommended by government guidelines.
3. During pregnancy, alcohol crosses the placenta to the foetus and can affect the developing baby. Research and describe what is meant by Foetal Alcohol syndrome (FAS). The following websites may be useful:

nhs.uk/livewell/alcohol/pages/alcoholhome.aspx

rcog.org.uk

nofas.org

ACTIVITY TWO

Discuss in pairs or small groups: Why are there NO safe limits for alcohol consumption for under age drinkers

WHAT IS BAC (BLOOD ALCOHOL CONCENTRATION) ?**SCIENCE/ ENVIRONMENTAL STUDIES 14 - 16 WORKSHEET 8**

When someone drinks alcohol it is absorbed into the bloodstream from the stomach and small intestine. The amount of alcohol in someone's blood is measured by their BAC (blood alcohol concentration).

BAC is usually measured as the number of milligrams (mg) of alcohol in 100 millilitres (ml) of blood. That's because a person's BAC depends on many different factors, for example:

- how many grammes of alcohol they have drunk (not how many drinks they have had)
- size and weight: a smaller person will have a higher BAC than a larger person drinking the same amount of alcohol.
- metabolic rate: which may change for the same person during the day, month or year
- general fitness
- emotional state
- the type of drink, e.g. alcohol in fizzy drinks tends to be absorbed more quickly
- the speed at which they drink
- whether they have eaten before they drink.

Gender is important too. Alcohol is distributed around the body in water, and females have less body water (and more body fat) than males. This means that, given the same amount of alcohol, and proportional to body weight, women will generally have a higher BAC than men.

ACTIVITY ONE

1. Using the formula given in the Worksheet 7, calculate the amount of alcohol (in grams) in each of the drinks below.

$$\frac{8 \times \text{volume of glass/bottle (ml)} \times \text{ABV* (\%)}}{1000}$$

(*ABV = alcohol by volume).

Drink	Volume of glass/ bottle (ml)	ABV (%)
Lager	330 ml bottle	5
Cider	1/2 litre bottle (500 ml)	9
Wine	Half bottle (375 ml)	12
Spirits	25 ml measure	40

2. Assume that a healthy adult's liver can break down an average of 10g of alcohol per hour, all the alcohol consumed is absorbed into the bloodstream, and there are 4 litres of blood in the body. For each drink in the table, calculate how many grams of alcohol would be left in the bloodstream after 1, 2, 3, and 4 hours if an average healthy adult had drunk this drink. Record your results in a table.
3. Plot a line graph of your results. What conclusion can you draw?

WHAT IS BAC (BLOOD ALCOHOL CONCENTRATION) ?**SCIENCE/ ENVIRONMENTAL STUDIES 14 - 16 WORKSHEET 8**

4. Now calculate the BAC after one hour for each of the drinks. Give your answer as the number of milligrams of alcohol in 100 millilitres (ml) of blood. Which drink results in the highest BAC?
5. Why is it difficult for a person to estimate their BAC?
6. Identify times when a person shouldn't drink - where an elevated BAC would affect their ability to carry out tasks accurately or could have other outcomes that make drinking unsafe.

Recommended Activity

Have they understood? - The Alcohol clock game

1. Lay cards with numbers (1 - 12) out on the floor to make a large clock.
2. Explain to the group
 - o When you drink you put units of alcohol into your body, different drinks give you different units of alcohol.
 - o For the first hour you do not lose any units of alcohol. Every hour after this you lose one unit per hour.
3. Choose someone in the class to pretend to be a young person (John or Jane) out on a night's drinking – get them to stand at 7 o'clock on the clock.
4. Start to make up a story about someone out on a night of drinking. Make up the drinks they are having – every time they have a drink, get another pupil in the class to go and stand behind the drinker.
 e.g. John is getting ready to go out with his mates, as he is getting ready he has a beer to get him in the mood (one unit = one person gets up and stands behind John). He decides to have a stiff whisky before he leaves the house (2 units = 2 more people get up and stand behind John).
 John gets to the pub and he has a pint of beer (2 units – 2 more people get up and stand behind John). He downs that quickly and has another (2 units = 2 more people get up and stand behind John). As the story goes on, move John around the clock.
5. Stop the action and ask the pupils
 - o Could John legally drive a car at this point?
 - o How do you think John's behaviour may be affected?
6. When John gets to 9 o'clock, John loses one unit of alcohol from his body (one person behind John sits down).
7. John goes on drinking (repeat the process every time he has a drink and for every hour now he loses one unit).

8. If you make your 'drinker' have a really heavy night drinking, he will still be over the limit to drive the next morning.
9. Various ideas to introduce into the 'story'
 - o John is playing on a pinball machine – would his judgement be affected?
 - o John meets a girl he wants to impress. If John had eaten before he went out or was eating while he was drinking, would this affect how he was feeling?
 - o How would mixing his drinks make John feel?
 - o What if someone slipped him some extra alcohol in a drink and he didn't realise?
 - o What if someone tried to steal his wallet/money while he was heavily under the influence of alcohol?
 - o In certain situations you could introduce the idea of
 - o unprotected sex
 - o getting into an argument/fight with other people.
 - o Trying to get a taxi home – some taxi drivers may refuse the fare. (If you are sick in a taxi, taxi drivers could charge £50).
 - o If someone passed out under the influence of alcohol, what would the dangers be?
 - o If drugs were also taken, what problems could they introduce?
 - o How will John be feeling the next morning?

