

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 bbc.co.uk/news/health-15501779.

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

How many units? 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



Alcops



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 or beer



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 high strength (7.5%) lager, beer or cider



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%) alcopop
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 34](#) or the interactive version in our Online Learning Zone talkaboutalcohol.com.

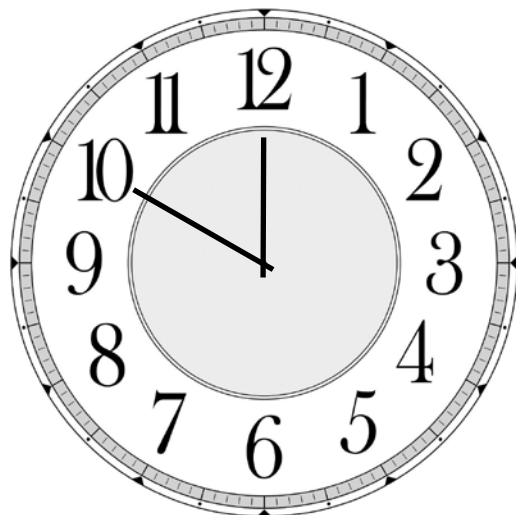
Target age group: 14 - 16 year-olds

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:

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

(*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).

HOW MUCH ALCOHOL IS IN A DRINK?

SCIENCE/ ENVIRONMENTAL STUDIES 12 -16 WORKSHEET 7

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.

When should adults drink?

Adults should avoid drinking alcohol:

Before driving (See worksheet 9)

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.

RESPONSIBLE DRINKING

SCIENCE/ ENVIRONMENTAL STUDIES 11 - 16 WORKSHEET 10

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.

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.

WHAT IS BAC (BLOOD ALCOHOL CONCENTRATION) ?

SCIENCE/ ENVIRONMENTAL STUDIES 14 - 16 WORKSHEET 8

ACTIVITY ONE

- 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 |

- 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.
- Plot a line graph of your results. What conclusion can you draw?
- 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?
- Why is it difficult for a person to estimate their BAC?

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?

