

**Curricular Area:** **Mathematics**

CfE Level(s): Third and Fourth

CfE Experiences & Outcomes: MTH 3 – 21a, MTH 4 – 21a  
HWB 4 – 43c

**Objectives:** Data analysis and display using technology.  
Increase awareness of the effects of alcohol on our society and challenge attitudes to alcohol.

### **Background**

Scotland's alcohol problem is significantly worse than the rest of the UK. Figures suggest that as many as half of men and a third of women in Scotland regularly drink above sensible drinking guidelines.

Alcohol consumption across the country has increased by 19 per cent since 1980, driven by an increase in affordability of 70 per cent over the same period.

As consumption has increased, so has alcohol related harm. The annual cost of alcohol misuse of alcohol to Scottish business, the NHS, social services, police and courts is between £2.48 billion and £4.64 billion. The mid-range estimate of £3.56 billion for the total cost equates to around one tenth of Scotland's annual budget and £900 for every adult in our country.

### **Suggested Activity:**

**Analyse the data contained in statements below relating alcohol.**

**Display this data using technology in the most appropriate form i.e. pie charts, graphs, tables & diagrams.**

#### **Cost of alcohol to society**

In Scotland in 2006/07 alcohol misuse cost society £2,250m, including £405m cost to NHS Scotland, £385m to criminal justice and emergency services and £820m loss of productivity.

#### **Adult consumption**

In Scotland in 2008/2009, 26% of men and 17% of women reported drinking more than twice the recommended daily unit guidelines on at least one day in the week before interview.

The average weekly alcohol consumption was 17.5 units for men and 7.8 for women in 2009.

#### **Alcohol-related deaths**

In Scotland in 2010 there were 1,318 alcohol-related deaths, an increase of 3% compared to 2009.

### **Minimum Pricing**

The Scottish Government passed the Alcohol Minimum Pricing Bill on 24<sup>th</sup> of May 2012. The bill will increase the price of drinks such as own-brand spirits and white cider, which have high alcohol content but are usually very inexpensive. Minimum pricing will simply set a floor price for a unit of alcohol, meaning it can't be sold for lower than that. The more units a drink contains, the stronger it is and therefore the more expensive it will be. A pint of beer contains about two units, while a bottle of wine contains about 10.

### **Suggested Activity:**

For the following drinks calculate the cost in relation to minimum pricing, if the minimum price was set at 50p per unit.

Pint of Lager =	2.8units
Pint of Cider =	2.3 units
Standard Glass of champagne=	2.1 units
Standard Glass of Red Wine=	1.9 units
Standard Glass of White Wine=	1.9 units
25 ml Light spirit with energy drink=	0.90 units
Standard Bottle Alco-pop=	1.1 units

### **Alcohol & Calories**

Pint of Lager =	227 Calories
Pint of Cider =	205 Calories
Standard Glass of champagne=	133 Calories
Standard Glass of Red Wine=	119 Calories
Standard Glass of White Wine=	130 Calories
25 ml Light spirit with energy drink=	118 Calories

Standard Bottle Alco-pop=

184 Calories

Calculate the percentage of a person's recommended daily calorie intake (2,000 for an adult female and 2,500 for an adult male) in relation to consumption of one of each of the drinks above.

### **Glasgow Schools Health & Well Being Survey**

The Schools Health and Well Being Survey was carried out in 2010 with 50% of all S1 to S4 pupils (8,282) in mainstream secondary schools in the Glasgow Area. Pupils

were asked to complete a questionnaire focusing on a variety of health issues, including Alcohol and Drugs.

### **Suggested Activity:**

**Analyse the data contained in statements below relating alcohol.**

**Display this data using technology in the most appropriate form i.e; pie charts, graphs, tables & diagrams.**

Three in five (61%, 4,868 pupils) said that they never drank alcohol. Seven percent (563 pupils) of pupils said that they drank alcohol once a week or more.

**Gender:** Boys were more likely than girls to say that they never drank alcohol (63%, 2,451 boys; 59%, 2,407 girls).

**Stage:** Lower school pupils were more likely than upper school pupils to say that they never drank alcohol (76%, 2,996 lower school; 46%, 1,872 upper school). Upper school pupils were more likely than lower school pupils to drink alcohol at least once a week (11%, 463 upper school; 3%, 127 lower school).

**Ethnicity:** Those from Asian, Black and 'other' groups were more likely than those from a White British or 'other White' group to say that they never drank alcohol (93%, 502 Asian; 78%, 124 Black; 71%, 160 'other'; 58%, 3,835 White British; 52%, 140 'other White').

Those who ever drank alcohol were asked what types they drank. Responses are shown in Figure 4.3. The most common types of alcohol drink consumed were alcopops (47%, 1,438 pupils), cider (46%, 1,405 pupils) and spirits (40%, 1,228 pupils).

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 23)

**Gender:** Of those who ever drank alcohol, boys were more likely than girls to drink beer/lager (50%, 681 boys; 12%, 200 girls) and fortified wine/sherry (27%, 373 boys; 18%, 293 girls). Girls were more likely than boys to drink alcopops (59%, 988 girls; 33%, 448 boys) and spirits (45%, 754 girls; 34%, 474 boys).

**Stage:** Of those who ever drank alcohol, upper school pupils were more likely than lower school pupils to drink: beer/lager (32%, 682 upper school; 22%, 201 lower school); cider (50%, 1,077 upper school; 36%, 328 lower school); spirits (47%, 1,014 upper school; 24%, 214 lower school); and fortified wine (24%, 510 upper school; 17%, 157 lower school).

**Deprivation:** Of those who ever drank alcohol, those in the least deprived schools were more likely than those in the most deprived schools to drink beer/lager (34%, 228 least deprived; 23%, 108 most deprived) or wine (23%, 152 least deprived; 11%, 54 most deprived).

**Ethnicity:** Of those who ever drank alcohol, White British pupils were the group most likely to drink cider and Asian pupils were the least likely (47%,

1,287 White British; 41%, 14 Black; 37%, 24 'other'; 35%, 44 'other White'; 18%, 7 Asian). White British pupils were the least likely to drink wine (15%, 416 White British; 24%, 30 'other White'; 34%, 13 Asian; 35%, 12 Black; 57%, 37 'other').

Three in five (61%, 1,742 pupils) of those who ever drank alcohol said that they rarely or never got drunk, while 19% (554 pupils) said they got drunk once or twice a month and 20% (564 pupils) said they got drunk once a week or more.

**Stage:** Among those who ever drank alcohol, lower school pupils were more likely than upper school pupils to say they never got drunk (76%, 630 lower school; 55%, 1,112 upper school).

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 24)

Those who ever drank alcohol were asked how much they usually spend on alcohol per week. Three in five (59%, 1,781 pupils) said they spent nothing on alcohol. A quarter (25%, 758 pupils) spend £6 or more per week.

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 25)

**Stage:** Among those who ever drank alcohol, lower school pupils were more likely than upper school pupils to say that they spent nothing on alcohol (71%, 638 lower school; 54%, 1,143 upper school). Upper school pupils were more likely than lower school pupils to spend £6 or more per week on alcohol (30%, 638 upper school; 13%, 120 lower school).

**Deprivation:** Among those who ever drank alcohol, those in the least deprived schools were more likely than those in the most deprived schools to say they spent nothing on alcohol (64%, 424 least deprived; 51%, 243 most deprived). Those in the most deprived schools were more likely than those in the least deprived schools to spend £6 or more on alcohol per week (31%, 148 most deprived; 23%, 156 least deprived).

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 25)

Pupils who ever drank alcohol were asked where they buy alcohol. Responses are shown in Figure 4.6. Two in five (43%, 1,286 pupils) said they did not buy alcohol. The most common means of buying alcohol was asking strangers to buy it (29%, 876 pupils).

**Gender:** Among those who ever drank alcohol, girls were more likely than boys to say that: friends bought alcohol for them (26%, 425 girls; 19%, 258 boys); family bought alcohol for them (12%, 198 girls; 7%, 101 boys); and they ask strangers to buy alcohol for them (33%, 542 girls; 24%, 332 boys).

Boys were more likely than girls to say that they do not buy alcohol (48%, 658 boys; 38%, 627 girls).

**Stage:** Among those who ever drank alcohol, upper school pupils were more likely than lower school pupils to: buy alcohol from supermarkets (4%, 81 upper school; 1%, 8 lower school); say that friends bought alcohol for them (27%, 575 upper school; 12%, 110 lower school); that family bought alcohol for them (12%, 247 upper school; 6%, 54 lower school); ask strangers to buy alcohol for them (33%, 697 upper school; 20%, 179 lower school); and alcohol from a local off-license chain (5%, 117 upper school; 1%, 13 lower school).

Lower school pupils were more likely than upper school pupils to say that they do not buy alcohol (59%, 525 lower school; 36%, 761 upper school).

**Deprivation:** Among those who ever drank alcohol, those in the most deprived areas were more likely than those in the least deprived areas to ask strangers to buy alcohol for them (34%, 161 most deprived; 22%, 146 least deprived).

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 26)

Those who ever drank were asked where they usually drink alcohol. Responses are shown in Figure 4.7. Just over half (54%, 1,575 pupils) said they drink alcohol outside with friends.

**Gender:** Among those who ever drank alcohol, girls were more likely than boys to say they drank 'somewhere else' (24%, 378 girls; 18%, 241 boys).

**Stage:** Among those who ever drank alcohol, lower school pupils were more likely than upper school pupils to say they drank alcohol at home (45%, 379 lower school; 36%, 741 upper school). Upper school pupils were more likely than lower school pupils to drink alcohol outside with friends (58%, 1,206 upper school; 44%, 369 lower school) or 'somewhere else' (23%, 480 upper school; 16%, 139 lower school).

**Deprivation:** Among those who ever drank alcohol, those in the least deprived schools were less likely than those in the most deprived schools to drink alcohol at home (44%, 287 most deprived; 32%, 149 least deprived). Those in the most deprived schools were more likely than those in the least deprived

schools to drink alcohol outside with friends (61%, 279 most deprived; 48%, 310 least deprived).

(Glasgow City Schools Health and Wellbeing Survey: Glasgow City Report Page 27)

## References

<http://www.scotland.gov.uk/Topics/Health/health/Alcohol>

**Glasgow Schools Health & Well Being Survey, 2010.**

<http://www.phru.net/rande/Web%20Pages/Schools%20Survey%202010.aspx>

