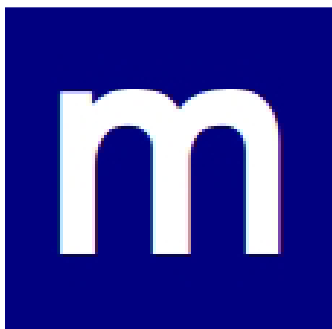


Still a mess

The continuing failure of UK measurement policy

A report by the UK Metric Association



"Every country needs a system of measurement: nobody needs two systems"

Chris Howell (1944-2007, Fellow of the Trading Standards Institute)

Still a mess

The continuing failure of UK measurement policy

A report for the UK Metric Association

by Robin Paice

www.ukma.org.uk

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1. Introduction

1.1. The purpose of this report is to demonstrate, based on the results of a recent public opinion survey (and other evidence), that :

- Government policy on metrication has failed and is continuing to fail, and
- Unless the Government changes policy, the present dysfunctional muddle of two incompatible systems of measurement will continue indefinitely.

1.2. The report concludes with recommendations for resolving this "mess".

2. Executive summary

2.1. Government policy on metrication has failed. This is because it is based on the false assumption that, as children receive some metric education in maths lessons at school, they will grow up using metric units. Therefore, as the population ages, acceptance and adoption of metric units will grow until eventually the metric system will be the default system for all purposes.

2.2. Unfortunately, experience has not borne out this assumption.

2.3. Based on this false assumption, and having achieved partial metrication in most fields of activity, successive governments have given up on trying to complete the conversion of the UK to primary use of metric units. No further action is planned.

2.4. The UK Metric Association (UKMA) commissioned YouGov to carry out a survey of public understanding and use of metric and imperial units and of public support for completing the metric changeover. A follow-up survey also examined the salience of metrication as a political issue. Key results were as follows:

- Half of respondents were opposed to completing metrication, with a quarter supportive and a fifth indifferent or noncommittal.
- Although younger generations were more supportive than the older, still 36% of the 18-24 age group were opposed.
- Where there are specific practical reasons for using metric units, the majority of the population prefer to use them
- However, where parental, peer and media pressures are strongly in favour of imperial units, all age groups continue to use imperial - including for personal weighing
- Although there was a definite association between age and acceptance/use of metric units, there was still either a majority or a large minority of younger people who habitually use imperial rather than metric units for various everyday functions

2.5. Thus the basic assumption that underlies Government policy - that metric education in school will lead naturally to a general acceptance of metric units for all purposes - is shown to be incorrect.

2.6. It is concluded that, without Government action to complete metrication, the present dysfunctional muddle of two incompatible measurement systems - the "very British mess"¹ - will continue indefinitely.

¹ See Paice, R.B. (2004) *A very British mess* UKMA, ISBN 0750310146, available at <http://www.ukma.org.uk/sites/default/files/VBM.pdf> (retrieved 10 December 2013)

2.7. This "mess" matters for several reasons:

- To function effectively, an adult in Britain needs to have a detailed knowledge of **two** measurement systems. Yet the YouGov survey showed that:
 - 76% of respondents were unable to answer correctly how many yards there are in a mile
 - 43% could not say how many metres there are in a kilometre
 - 32% of respondents were unable to answer correctly how many pounds there are in a stone
 - 39% did not give the correct answer when asked how many grams there are in a kilogram
 - These findings suggest that many adults in Britain are unable to understand or make use of the key information that is provided for their protection or benefit.
- Incompatible units used for comparisons undermining consumer protection
- Mutual incomprehension - people who use different systems don't understand each other
- Conversion errors
- Accidents - such as the airliner that ran out of fuel
- Costs - of mistakes and of running two systems
- Failure to reap the benefits of past investment in metrication - especially in education
- Perception of the UK by foreigners

2.8. Politicians of all parties need to recognise that

- the policies of successive governments over the past 40 years have failed, and
- Government action is needed to resolve the problem

2.9. Specific action includes:

- Declaration that completing metrication remains the Government's objective
- Duty on public sector bodies to use metric units
- Requirement to use metric units in advertising and product description
- Conversion of road signs and speed limits
- Better enforcement of existing rules

2.10. Contrary to the common assumption that metrication is a vote loser, the **survey evidence** shows that such a programme of action would be **very unlikely** to cost a party votes in the context of a general election or **to make any difference to the result.**

3. The failure of Government policy

3.1 Government policy on metrication is based on a fallacy.

3.2 The fallacy is the assumption that, because the metric system is taught in maths and science lessons in schools, young people will grow up using metric units, will prefer metric to imperial measurement units and will support completion of the metric changeover. Therefore (so the argument goes) as the population ages, acceptance and adoption of metric units will grow until eventually the metric system will be the default system for all purposes. A future government will then be able to phase out the remaining imperial units without undue controversy or opposition.

3.3 Unfortunately, the reality is different - and more complicated.

What actually is government policy?

3.4 Firstly, it is important to establish what Government policy on units of measurement actually is². It has been characterised by a voluntary/gradual approach, a reluctance to take decisive steps and an acceptance of dual running of two systems. Consequently, it has become somewhat incoherent and contradictory, comprising several strands.

- The law requires that most public business, such as the administration of Building Regulations or the allocation of grants and subsidies, must be conducted in metric units.
- The major exception to the above requirement is that "road traffic signs" must display speed limits and distances in imperial units. This exception was intended to refer only to official road signs but the Department for Transport has expanded the interpretation of the exception to apply it to any reference to speeds, distances and dimensions, and has resumed using imperial measures in published documents. There are no plans to convert speed limits and distances on road signs.
- As far as retail trade is concerned, the Weights and Measures Act requires package labelling and weighing and measuring at the point of sale to be in metric units, with the option of supplementary indications in imperial units. However, authorities are discouraged from enforcing the law too rigorously, with the result that it is widely and routinely flouted. Moreover, some pub measures are actually required to be in imperial units.
- Product description and advertising are unregulated, and either metric or imperial units may be used.
- Schools in England that are subject to the National Curriculum are required to teach metric units in maths lessons but with approximate imperial equivalents. Other schools (such as the 40% of secondary schools that are academies) decide their own policy.

² A brief summary of the development of government policy on metrication since 1965 is given at Appendix C

- In the National Health Service, metric units are strongly recommended in hospitals, but imperial units are still in common use in general practice (e.g. for personal weight or height).

3.5 In summary, it can be said that, having achieved partial metrication in most fields of activity, the Government have given up any attempt to complete the job. Instead, they have adopted a policy of "laissez faire". Indeed, the responsible Minister has said that the Government "have no plans to introduce any further metrication."³

3.6 From discussions with Government officials it is clear that underlying this "laissez faire" approach is the theory⁴ - outlined above - that no further Government action is necessary since, as the population ages and younger metric-educated age cohorts replace the imperial-educated older generation, usage of imperial units will die out and metric units will become the default for all age groups. This neatly absolves the government of any responsibility to manage the changeover.

3.7 The next section uses recent survey evidence to show why this theory is wrong.

What is wrong with the "natural evolution" theory?

3.8 In the first place, if the above theory were correct, then since the teaching of metric units was made compulsory in state schools as long ago as 1974, one might have expected that after almost 40 years those units would already have become the default for most of the population. Needless to say, this has not happened.

3.9 In 1979 the now defunct Metrication Board carried out a survey of the acceptance of the metric changeover, and found that, although most people were well aware of the change, 46% opposed it and 31% supported it. Subsequent surveys⁵ have shown that public opinion has not shifted in favour of completing the changeover.

3.10 In 2013, in order to gain a better understanding of this situation, **UKMA commissioned YouGov plc to carry out a survey of public opinion and usage in relation to measurement units**. A summary report and commentary on this survey is given at Appendix A and the full tables can be found at Appendix B. Some of the key findings of this survey are as follows:

- Roughly half the population is currently opposed to completing the metric changeover, with a quarter supportive and a fifth indifferent. Although

³ Letter from David Willetts MP, Minister of State for Universities and Science, Department for Business, Innovation and Skills, to the British Weights and Measures Association, 6 June 2010

⁴ This theory was expounded by senior Government officials at a meeting with UKMA representatives in 2009

⁵ A summary of some more or less credible surveys is given at Appendix D

younger people (aged 18-39) are more supportive than the older generation, still 34% of the 25-39 age group and 36% of the 18-24 age group are opposed.

- Where there are practical reasons for using metric units, the majority of the population prefer to use them. For example, most people will use metres rather than feet and inches for measuring a room for floor coverings. The obvious probable explanation is that floor coverings are sold by the square metre, whereas converting square feet and inches to square metres is a laborious process.
- Similarly, metric units are preferred to imperial where they are observably more convenient and already in widespread use. For example, the Celsius temperature scale is strongly preferred to Fahrenheit by 61% to 32% - partly because the Celsius scale is intuitive (as it is related to the freezing and boiling points of water) but also because many weather reports and forecasts use the Celsius scale exclusively.
- However, where parental, peer and media pressures are strongly in favour of imperial units, all age groups continue to use imperial. For example, for personal weighing, no less than 79% of respondents (including 64% of the 18-24 age group) would use stones and pounds rather than kilograms.
- Similarly, despite food (other than milk) being packaged and sold in metric units, and despite modern recipes specifying grams and millilitres, the majority of older people and a significant minority of younger people prefer imperial measures in the kitchen. It may be speculated that this last finding is primarily due to parental influence. In this question there was a marked association with age, and a contrast between the sexes (men actually preferred metric).
- In all the above examples, although there was a definite association between age and acceptance/use of metric units, there is still either a majority or a large minority of younger people who habitually use imperial rather than metric units for everyday functions.
- The theory that metric education in school will lead naturally to a general acceptance of metric units for all purposes and hence to support for completing the metric changeover - is thus discredited. The basic assumption that underlies Government policy is shown to be incorrect.

3.11 It can be concluded from these findings that the Government's current policy is not working. On the contrary it is likely to result in the perpetuation of the current muddle of two systems - the "very British mess" that UKMA described in 2004.

3.12 The next question then is whether this mess matters.

4. Why the "mess" matters

4.1 It has sometimes been argued that the current "two systems" situation in the UK is not really a "mess". Rather it is a pragmatic compromise that allows people to use the system that they themselves prefer while maintaining metric units as the ultimate standard for fair trade. As Prime Minister Tony Blair wrote to Lord Howe, "I do not believe it would be right to take further initiatives on metrication merely for the sake of tidiness."⁶

4.2 Others have invoked notions of "free speech" or claimed that having the option to "mix and match" two systems is actually a national asset to be preserved and celebrated.

4.3 However, it is not just a question of tidiness, nor does the existence of the two systems work to the advantage of the great majority of users. There are a number of reasons why the "mess" does matter.

4.3.1 Need to know two systems (but many don't)

In order to function effectively in the UK an adult needs to have a detailed knowledge of all the main metric and imperial units. Comparing food prices in the street market and the supermarket cannot be done without knowing both how many ounces there are in a pound, how many grams are in a kilogram and the relevant conversion factors (not to mention the possession of a pocket calculator). Timber cannot be purchased without knowing its length in metres and its profile in inches. Petrol consumption cannot be calculated without knowing the conversion factors for either litres to gallons or miles to kilometres. A person who is only familiar with one set of measurement units is at a serious disadvantage.

Yet there is strong evidence from the YouGov survey that substantial minorities of the population (in some cases a majority) struggle to remember the relationships between the most common metric and imperial units. Respondents to this online survey were given 10 seconds to answer questions such as "How many yards are there in a mile?" Some key results are given below.

- 76% of respondents (including 95% of the 25-39 age group) were unable to answer correctly or at all how many yards there are in a mile
- 43% did not give the correct answer when asked how many metres there are in a kilometre (including 55% of the 60+ age group)⁷
- 33% of respondents were unable to answer correctly how many pounds there are in a stone (including 24% of the 60+ age group)
- 38% did not give the correct answer when asked how many grams there are in a kilogram (54% of the 60+ age group)

⁶ Letter from Tony Blair to Lord Howe of Aberavon, 15 September 2004

⁷ As an aside, it is also interesting that knowledge of metres in a kilometre was much better than knowledge of yards in a mile

These findings suggest that many adults in Britain are unable to understand or make use of information provided for their protection or benefit - such as quantity indication on package labels, unit pricing (the small print at the bottom of price labels), recommended medicine doses, product descriptions and instruction manuals, health and safety warnings etc. This problem would be bad enough if there were only one system of measurement: the existence of two systems can only make it worse.

4.3.2 Incompatible units used for comparison

Even if a shopper is one of the minority that is fluent with both metric and imperial units, problems arise over comparing the attributes of goods when some are specified in imperial and others in metric – for example, when one retailer gives a refrigerator's gross capacity in cubic feet but another quotes the statutory Energy Label, which gives the net capacity in litres.

4.3.3 Incomprehension

Effective communication about dimensions and quantities requires that everybody uses the same measurement units. Although there are people who are familiar with both metric and imperial units, the continued existence (and official recognition) of two different and incompatible sets of measurement units enables many people to avoid using or becoming familiar with one or other of the sets of units: some use only imperial, others only metric. The inevitable result is mutual incomprehension and breakdowns in communication.

4.3.4 Conversion errors

In a situation where two incompatible measurement systems are in use, with some people using one system and other people the other system, it is sometimes necessary to provide conversions - for example, in news reporting, recipes, DIY instruction manuals. In other cases, carpenters, dressmakers or cooks may do their own conversions. Inevitably, mistakes sometimes occur. Particularly error-prone are Celsius to Fahrenheit conversions; and the process for converting "miles per gallon" to "litres per 100 km" is arithmetically challenging.

A particularly worrying type of error is that highlighted by an exchange in House of Lords on 25 February 2010, when peers drew attention to the possibility of a catastrophic mistake if medical doses were either misread, wrongly calculated or wrongly converted as a result of the residual use of imperial units in some parts of the National Health Service⁸.

⁸ Hansard, House of Lords, 25 February 2010, Column 1081. See also MetricViews article at <http://metricviews.org.uk/2010/02/minister-agrees-it-is-time-to-clear-up-%E2%80%9Cvery-british-mess%E2%80%9D/> (retrieved 9 December 2013) (includes video link)

4.3.5 Accidents and public safety

Two types of accident can occur as a result of the existence of two systems. Firstly, if parties to a transaction are unclear which set of units are being used, one party may misinterpret a specification and use the wrong units. The most spectacular example of this was the loss of the Mars Climate Orbiter spacecraft in 1999, which resulted from a misunderstanding between NASA and a contractor (Lockheed) over whether newtons or pound-force was being used to manoeuvre the spacecraft.⁹

The second type of accident can occur when a conversion is carried out wrongly. Here the best known example is that of the "Gimli glider" - an Air Canada Boeing 767 that ran out of fuel in midflight in 1983 as a result of wrong conversions between pounds, kilograms, litres and gallons (imperial and US)¹⁰.

4.3.6 Costs

It is not possible to put a definitive figure on the cost of having to operate in two systems. Undoubtedly, however, there are costs to manufacturers, retailers and others in having to provide two sets of information. In some cases, computer programmes will make the conversions automatically, but especially for small traders and for non-repetitive operations, the cost - even if only in wasted time and effort - must be significant.

Other costs can sometimes be precisely quantified: the cost of the lost Mars Climate Orbiter was given by NASA as \$655 million¹¹. The Department for Transport has also estimated the cost of bridge strikes resulting from foreign HGV drivers not understanding imperial units as £234 000 annually without taking into account the cost of delays to road users, which are noted as being "non trivial"¹².

4.3.7 Failure to reap the benefits of investment in metrication

Considerable resources have been invested by both public and private sectors in metrication. Industries have retooled their factories and retrained their staff. Retailers have purchased new metric or dual scales. Schools have replaced their textbooks in response to changes in the curriculum. Unfortunately, much of this investment has been wasted since, for example, people who use metric units at work constantly have to adapt to the imperial environment outside; many shoppers and cooks continue to think in imperial units; and children have little opportunity to reinforce their learning by practising metric units outside school and they consequently forget what they have learnt.

⁹ See Stephenson, A.G. and others (1999) *Mars Climate Orbiter Mishap Investigation Board Phase 1 Report* NASA, available at ftp://ftp.hq.nasa.gov/pub/pao/reports/1999/MCO_report.pdf retrieved on 2 January 2014

¹⁰ See http://en.wikipedia.org/wiki/Gimli_Glider, retrieved on 6 December 2013

¹¹ See <http://mars.jpl.nasa.gov/msp98/orbiter/fact.html> retrieved on 6 December 2013

¹² See <http://ukma.org.uk/sites/default/files/rtc2011-12-annex-d.pdf> retrieved on 2 January 2014

4.3.8 Perception of the UK by foreigners

Visitors to the UK cannot fail to notice the peculiar mixture of measurement systems used in the UK. Some may find it quaint and amusing - a harmless example of the quirkiness and insularity of the British. Others may take a less charitable view and regard it as a symptom of a country that is unable to cope with change and shake off the hangover from the British Empire. It is at least possible that this latter perception has consequences for British exports - and hence for our national prosperity.

5. Government action needed: how to sort out the mess

5.1 We have shown that the measurement policies pursued by successive Governments over the past half century have failed. They have failed because they are based on the false assumption that the problem - the muddle of incompatible measurement units - will sort itself out in due course as the population ages. We have also argued that the muddle causes serious problems that need to be tackled.

5.2 So what should the Government do?

The first step in resolving the "mess" is probably the most difficult. It will be difficult for politicians and civil servants to admit that the policies that they and their predecessors have been pursuing for over 40 years have been mistaken. However, little real progress can be made until they can take this difficult first step.

Politicians of all parties first need to acknowledge what they have hitherto denied: that there is a problem - and that a change of policy is needed in order to resolve it.

5.3 Reaffirm the objective of completing metrication

The second step is to reaffirm that the Government's objective remains what was set out in a White Paper¹³ as long ago as 1972: "The move to metrication has been taking place over many years, but the Government believe that the time has now come when they must act to ensure the orderly completion of the process."

5.4 Action required

Once this objective has been reaffirmed and accepted, the necessary action is relatively straightforward, although some steps may require legislation. It includes the following:

5.4.1 Declaration that metric units are to become the primary system for all official, legal and trade purposes in the UK unless otherwise required by international agreements (i.e. currently aviation and maritime navigation)

5.4.2 Duty on all organisations in receipt of public funds (inc. Government Departments and Agencies, the Crown, local authorities, statutory bodies, schools and universities, police, contractors on publicly financed projects, charities receiving grants) to work toward becoming primarily (and eventually exclusively) metric. This should include an appropriate clause to be inserted in all procurement contracts and grant agreements.

5.4.3 Requirement that measurement units used in advertising and product description shall be metric, with optional supplementary indications. This should be

¹³ DTI (1972) *Metrication* Cmnd 4880, paragraph 18, available at <http://www.ukma.org.uk/sites/default/files/met1972.pdf> (retrieved 10 December 2013)

enforced against advertising agencies, estate agents, newspapers, internet service providers – but **not** against private individuals. (It would be counter-productive to enforce against private individuals as this would simply lead to the creation of “martyrs”).

5.4.4 Conversion of road speed limits to km/h, and setting a cut-off date (say, 3 years) for ending the exemption of “road signs, distance and speed measurement” from the requirement to use SI units.

5.4.5 Improved enforcement of existing legislation - especially that related to consumer protection and weights and measures.

5.5 Electoral consequences

5.5.1 BUT..... if a future Government could summon up the courage to tackle this problem, would it pay a heavy price in terms of lost votes and electoral defeat? **The survey evidence suggests that this possibility is so unlikely that it can be discounted.**

5.5.2 The UKMA/YouGov survey asked respondents to select up to four issues out of a list of 17 that they considered to be the most important in deciding how to vote in the next general election. The top six in rank order were: the economy (picked by 60% of respondents), immigration & asylum (48%), health (37%), welfare benefits (36%), tax (26%) and pensions (24%).

5.5.3 Completing conversion from imperial to the metric measurement system came last, having been picked by 1% of respondents.

5.5.4 It can be concluded that, whatever voters' views on the issue of completing metrication may be, in the context of a general election the issue is unlikely to sway more than a tiny proportion of votes or make any measurable difference to the result of the election.

Appendix A: The UKMA/YouGov survey: commentary on the results

The survey was undertaken online in two stages - on 2 - 3 September 2013 with a sample size of 1978 adults and on 7 - 8 November with a sample size of 1878 adults. The figures have been weighted and are representative of all GB adults (aged 18+).

Completing metrication

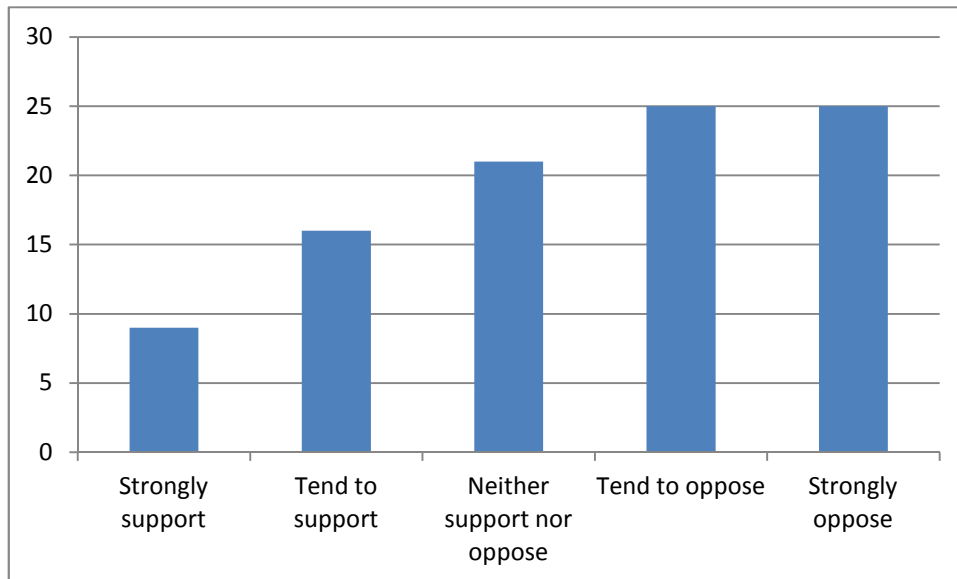
The first question was:

"The UK currently uses a mixture of metric units (like metres, kilos and litres) and imperial units (like inches, pounds and gallons). To what extent would you support or oppose the UK completing its conversion to using only metric measurements?"

The overall percentage figures for all respondents were:

Strongly support	9
Tend to support	16
Total support	25
Neither support nor oppose	21
Tend to oppose	25
Strongly oppose	25
Total oppose	50
Don't know	4

As a bar chart, the picture looks like this:



Although opposition to completing metrication outweighed support by a 2:1 ratio, it can also be seen that 46% of the respondents either supported completing metrication or were indifferent to the issue. The figures also bear the interpretation that 62% do not feel strongly about the issue.

Political breakdown

Intending Conservative voters opposed completion by 56%-25%, Labour by 44%-28% and UKIP by 72%-14%. However, intending LibDem voters supported completion by 48%-31%. Direct comparison with the 2010 vote is not possible since 2010 UKIP votes are not recorded.

Gender

Women were markedly more anti-metric than men (by 53%-19% compared with 46%-32%).

Age

All age groups were on balance opposed to completion, with some association of opposition with increasing age (e.g. over 60s were opposed by 64%-19%). However, the 25-39 age group was not significantly more anti-metric than the 18-24 age group (34%-29% compared with 36%-33%). Indeed the youngest group contained more persons who were strongly opposed than the 25-39 group, and 60% of the latter were supportive or indifferent. **This finding is at variance with the widespread assumption that the teaching of metric units at school will eventually result in a majority of the population becoming pro-metric as the age cohorts progress through an ageing population.**

Social grade

The lower socio-economic groups (C2DE) were more anti-metric (by 53%-21%) than the higher group (ABC1) (48%-28%).

Region

The region most opposed to completion of metrication was the North (53% opposed - 21% supportive), with London being the most supportive (44%-31%). Scotland (43%-29%) was less anti-metric than GB as a whole (50%-25%).

Education

There appears to be some association between standard of education and support for or opposition to completion. A majority of current students supported completion (by 39%-29%), and persons who finished their education aged 20+ opposed completion by only 39%-35%. By contrast, persons who left school or finished their education aged 19 or less were opposed by margins ranging from 60%-17% to 54%-21%.

Working status

Persons who were working or seeking work were less opposed to completion than persons not in the labour force (which would include many retired, older people).

Measurement units used

Question:

"Thinking about the following situations, would you tend to use imperial measurements (such as pounds, ounces, feet and pints), or would you tend to use metric measurements (such as grams, metres, kilos and litres)?"

(a) Measuring a room for carpets or flooring

By a small margin (48%-46%) a majority of respondents said they would use metres for measuring a room for carpets or flooring. The variation amongst different groups follows very closely the same pattern as for supporting/opposing completion.

(b) Weighing and measuring cooking ingredients

A majority of respondents (52%-42%) said they would use pounds and ounces and pints rather than kilograms and litres for weighing and measuring cooking ingredients. This is in spite of the fact that many modern recipes give quantities in metric units only and most food sales and packaging is in metric units. Women were predominantly imperial-users (60%-35%), whereas men were predominantly metric-users (50%-44%). The variation amongst age groups is particularly marked, with

71% of the 18-24 group being metric-users, compared with 74% of the 60+ age group being imperial-users. Nevertheless, despite the teaching of home economics in school using primarily metric units, 22% of the 18-24 age group and 25% of current students were imperial-users.

(c) Describing how hot or cold the weather is

61% of the total sample would use the Celsius (centigrade) scale for describing temperature compared with 32% for Fahrenheit. This preference was common to almost all groups except the 60+ age group and intending UKIP voters, both of whom preferred Fahrenheit by 49%-47%, together with persons who left school aged 15 or under (55%-37%).

(d) Personal weighing

By a margin of 79%-17% the majority of respondents would weigh themselves using stones and pounds rather than kilograms. This preference was common to every group within the sample, but there is a clear association with age: whereas the 18-24 age group preferred imperial by 64%-29%, the 60+ age group preferred it by 89%-10%.

Familiarity with measurement units

Question:

"For each of the next four questions, please answer within 10 seconds. After this time period, it will automatically skip to the next question."

"How many yards are there in one mile?" (etc)

(a) Yards in a mile

[NB - only 71% of the total sample answered this question within the 10 second time limit]

33% of persons who responded in time answered correctly that there are 1760 yards in a mile, but this represents only 24% of the total sample. In other words 76% of the total sample were unable to give the correct answer within 10 seconds. There is a marked variation with age: of those who answered within 10 seconds, 69% of the 60+ age group knew the correct answer, whereas only 8% of the 18-24 age group, 7% of the 25-39 age group and 4% of current students answered correctly.

(b) Metres in a kilometre

[NB - only 80% of the total sample answered this question within the 10 second time limit]

71% of persons who responded in time answered correctly that there are 1000 metres in a kilometre, which represents 57% of the total sample. There is comparatively little variation across the age groups: of those who answered within

10 seconds 66% of the 60+ age group answered correctly, compared with 76% of the 18-24 age group. Similarly, the association with standard of education is comparatively weak: 59% of persons who left school at 15 or under answered correctly.

(c) Pounds in a stone

[NB - only 88% of the total sample answered this question within the 10 second time limit]

77% of persons who responded in time answered correctly that there are 14 pounds in a stone, which represents 67% of the total sample. There is some association with age: of the respondents who answered within the time frame, 89% of the 60+ age group gave the correct answer, compared with 65% of the 18-24 age group. Similarly, 89% of persons who left school at 15 or under answered correctly, compared with 55% of current students.

(d) Grams in a kilogram

[NB - only 87% of the total sample answered this question within the 10 second time limit]

71% of persons who responded in time answered correctly that there are 1000 grams in a kilogram, which represents 62% of the total sample. There is some association with age and educational standard: of the respondents who answered within the time frame, 82% of the 18-24 age group and 81% of persons who completed their education aged 20+ answered correctly, compared with 58% of the 60+ age group and 46% of persons who left school aged 15 or under.

Influence of metrication on voting intention

Respondents were asked to pick up to four issues out of a list of 17 that they considered to be the most important issues in deciding how to vote in the next general election. The top six in rank order were the economy (picked by 60% of respondents), immigration & asylum (48%), health (37%), welfare benefits (36%), tax (26%) and pensions (24%).

Completing conversion from imperial to the metric measurement system came last, having been picked by 1% of respondents.

The full results were:

"Which of the following do you think are the most important issues in deciding how to vote in the next general election? Please tick up to four."

	%
The economy	60
Immigration & Asylum	48
Health	37
Welfare benefits	36
Tax	26
Pensions	24
Europe	23
Education	20
Crime	16
Housing	16
Family life & childcare	11
The environment	9
Transport	6
Same sex marriage	4
Afghanistan	3
Badger cull	2
Complete conversion from imperial to the metric measurement system	1
None of these	1
Don't know	5

It can be concluded that, whatever voters' views on the issue of completing metrication may be, in the context of a general election the issue is unlikely to sway more than a tiny proportion of votes or make any measurable difference to the result of the election.

Appendix B.1



"UK Metric Association"
FIELDWORK DATES: 2ND - 3RD SEPTEMBER 2013

Prepared by YouGov plc
On behalf of UKMA

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Appendix B.1

DP_MondayPM_02_09_13
DP_TuesdayAM_03_09_13



BACKGROUND

This spreadsheet contains survey data collected and analysed by YouGov plc. No information contained within this spreadsheet may be published without the consent of YouGov Plc and the client named on the front cover.

Methodology: This survey has been conducted using an online interview administered members of the YouGov Plc GB panel of 185,000+ individuals who have agreed to take part in surveys. An email was sent to panellists selected at random from the base sample according to the sample definition, inviting them to take part in the survey and providing a link to the survey. (The sample definition could be "GB adult population" or a subset such as "GB adult females"). YouGov Plc normally achieves a response rate of between 35% and 50% to surveys however this does vary dependent upon the subject matter, complexity and length of the questionnaire. The responding sample is weighted to the profile of the sample definition to provide a representative reporting sample. The profile is normally derived from census data or, if not available from the YouGov plc make every effort to provide representative information. All results are based on a sample and are therefore subject to statistical errors normally associated with sample-based information.

For further information about the results in this spreadsheet, please contact YouGov Plc (+44)(0)20 7 012 6000 or email enquiries@yougov.com quoting the survey details

EDITOR'S NOTES - all press releases should contain the following information

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 1,978 adults. Fieldwork was undertaken between 2nd - 3rd September 2013. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+).

NOTE: All press releases or other publications must be checked by YouGov Plc before use. YouGov requires 48 hours to check a press release unless otherwise agreed. Please note, multiple press releases will require longer.

- YouGov is registered with the Information Commissioner
- YouGov is a member of the British Polling Council

Any percentages calculated on bases fewer than 50 respondents must not be reported as they do not represent a wide enough cross-section of the target population to be considered statistically reliable. These figures will be italicised.

Appendix B.1

YouGov / UKMA Survey Results

Sample Size: 1978 GB Adults

Fieldwork: 2nd - 3rd September 2013

	Voting intention				2010 Vote			Gender		Age				Social grade		Region						
Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland		
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172	
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

The UK currently uses a mixture of metric units (like metres, kilos and litres) and imperial units (like inches, pounds and gallons). To what extent would you support or oppose the UK completing its conversion to using only metric measurements?

Strongly support	9	8	12	15	3	7	10	11	13	6	15	10	9	6	10	8	10	9	8	8	15
Tend to support	16	17	16	33	11	13	15	20	19	13	18	19	16	13	18	13	21	16	18	13	14
TOTAL SUPPORT	25	25	28	48	14	20	25	31	32	19	33	29	25	19	28	21	31	25	26	21	29
Neither support nor oppose	21	18	24	20	14	15	23	26	19	22	22	31	18	15	21	20	20	20	21	21	25
Tend to oppose	25	28	22	20	26	27	24	23	21	28	24	22	24	29	26	23	23	27	24	27	19
Strongly oppose	25	28	22	11	46	35	24	17	25	25	12	12	31	35	22	30	21	26	25	26	24
TOTAL OPPOSE	50	56	44	31	72	62	48	40	46	53	36	34	55	64	48	53	44	53	49	53	43
Don't know	4	1	4	1	0	3	4	2	2	6	9	7	2	1	2	6	4	3	4	6	4

Thinking about the following situations, would you tend to use imperial measurements (such as pounds, ounces, feet and pints), or would you tend to use metric measurements (such as grams, metres, kilos and litres)?

(Please tick one option per row)

Measuring a room for carpets or flooring

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	48	45	51	63	39	39	44	55	54	42	71	64	43	30	54	40	46	53	51	41	46
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	46	51	42	33	60	56	48	40	40	51	19	25	51	68	40	52	45	41	44	51	51
Don't know	6	4	7	4	1	5	8	5	6	7	10	10	6	2	5	8	9	6	5	8	3

Appendix B.1

YouGov / UKMA Survey Results

Sample Size: 1978 GB Adults
Fieldwork: 2nd - 3rd September 2013

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

The UK currently uses a mixture of metric units (like metres, kilos and litres) and imperial units (like inches, pounds and gallons). To what extent would you support or oppose the UK completing its conversion to using only metric measurements?

Strongly support	9	3	4	7	7	14	13	28	8	11	9
Tend to support	16	14	13	14	11	21	26	3	18	11	14
TOTAL SUPPORT	25	17	17	21	18	35	39	31	26	22	23
Neither support nor oppose	21	18	20	21	17	23	23	17	24	15	18
Tend to oppose	25	19	28	28	30	23	17	18	26	18	23
Strongly oppose	25	41	30	26	30	16	12	16	21	33	32
TOTAL OPPOSE	50	60	58	54	60	39	29	34	47	51	55
Don't know	4	4	4	4	5	3	8	18	3	12	5

Thinking about the following situations, would you tend to use imperial measurements (such as pounds, ounces, feet and pints), or would you tend to use metric measurements (such as grams, metres, kilos and litres)?

(Please tick one option per row)

Measuring a room for carpets or flooring

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	48	20	31	50	50	61	71	45	51	45	38
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	46	76	62	44	45	31	18	32	41	43	58
Don't know	6	4	7	6	4	7	11	23	8	11	4

	Voting intention				2010 Vote			Gender		Age				Social grade		Region					
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

Weighing and measuring cooking ingredients

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	42	39	45	51	30	31	41	47	50	35	71	58	37	23	47	36	44	44	44	38	45
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	52	59	50	45	68	65	52	50	44	60	22	34	58	74	49	57	49	52	51	55	52
Don't know	5	3	5	3	1	4	7	3	6	5	7	8	5	2	4	7	7	4	5	7	3

Describing how hot or cold the weather is

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	61	68	62	73	47	57	57	70	63	60	80	75	57	47	68	53	58	62	63	61	64
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	32	29	30	24	49	38	35	26	32	32	11	17	37	49	28	37	34	33	32	33	27
Don't know	6	3	7	3	4	4	8	4	5	8	10	8	6	3	4	10	8	5	6	7	9

Weighing yourself

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	17	19	17	23	9	14	15	17	23	11	29	24	13	10	18	15	24	17	16	13	19
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	79	79	79	73	90	83	80	81	73	84	64	68	83	89	79	79	69	80	80	81	80
Don't know	4	2	4	4	1	3	5	2	4	5	7	8	4	1	3	6	7	4	3	6	1

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

Weighing and measuring cooking ingredients

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	42	16	31	42	45	52	67	38	46	42	31
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	52	80	62	53	51	44	25	34	48	46	65
Don't know	5	4	6	5	4	5	7	28	6	12	4

Describing how hot or cold the weather is

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	61	37	48	58	69	78	79	50	66	65	52
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	32	55	45	36	21	17	13	29	27	24	43
Don't know	6	8	7	6	10	5	7	21	7	11	5

Weighing yourself

Tend to use metric (e.g. grams, metres, kilos, litres and degrees Celsius (Centigrade))	17	8	10	13	12	26	34	33	17	36	13
Tend to use imperial (e.g. pounds, ounces, feet, pints and degrees Fahrenheit)	79	90	84	84	85	71	56	49	78	56	84
Don't know	4	2	6	4	3	4	10	18	5	9	3

	Voting intention				2010 Vote			Gender		Age				Social grade		Region						
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland	
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172	
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

For each of the next four questions, please answer within 10 seconds. After this time period, it will automatically skip to the next question.

How many yards are there in one mile?

[Full Sample]

0- 100 yards	20	16	20	15	16	15	22	18	12	27	37	26	19	8	18	23	23	18	20	21	18
101-1000 yards	12	12	14	13	8	10	9	13	13	11	15	20	11	5	13	11	12	12	13	13	9
1001-1759 yards	10	12	12	5	11	13	11	7	15	6	11	11	13	6	11	8	11	9	11	10	10
1760 yards	24	30	21	26	26	31	24	25	28	19	6	4	20	52	26	20	21	25	25	22	24
1761- 10,000 yards	5	5	6	8	6	5	5	6	6	4	2	3	7	5	5	5	3	6	5	5	4
Did not answer in time	29	25	27	33	34	25	29	30	26	33	30	36	29	24	26	34	31	29	26	30	35
Mean	1375	1243	1723	1191	1250	1290	1817	1152	1636	1103	1304	1450	1171	1572	1604	1033	1106	1482	1116	1699	1093
Median	1400	1600	1256	1760	1724	1725	1500	1600	1666	500	100	500	1500	1760	1600	1000	1000	1600	1400	1400	1468

Rebased Sample	1396	X	X	X	X	423	346	291	712	684	165	323	479	430	834	561	176	454	313	342	112	
Unweighted Sample	1437	383	418	97	150	451	346	315	725	712	124	299	562	452	963	474	207	502	284	338	106	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many yards are there in one mile?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1437]

0 -100 yards	28	21	28	23	24	21	30	26	17	40	52	40	27	11	24	34	33	26	27	30	28
101 - 1000 yards	17	17	19	19	12	14	13	18	17	17	21	31	16	7	17	17	17	17	18	18	13
1001 - 1759 yards	14	16	17	8	16	17	16	11	20	9	16	17	18	7	16	12	16	13	15	15	16
1760 yards	33	40	29	39	39	41	34	36	38	28	8	7	28	69	36	30	30	36	33	31	37
1761 - 10,000 yards	7	6	8	11	9	7	7	9	8	6	3	5	10	7	7	7	4	9	7	7	7
Mean	1091	1196	1084	1191	1250	1249	1064	1152	1293	880	580	716	1122	1531	1162	985	958	1148	1116	1059	1093
Median	1400	1600	1200	1760	1724	1725	1460	1600	1666	500	100	500	1500	1760	1600	1000	1000	1600	1400	1400	1468

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

For each of the next four questions, please answer within 10 seconds. After this time period, it will automatically skip to the next question.

How many yards are there in one mile?

[Full Sample]

0- 100 yards	20	11	17	18	26	19	34	7	20	17	15
101-1000 yards	12	9	13	8	16	12	20	11	14	11	8
1001-1759 yards	10	8	7	11	8	13	11	7	13	8	7
1760 yards	24	36	28	28	18	23	3	5	18	10	39
1761- 10,000 yards	5	5	5	4	4	6	4	19	6	8	4
Did not answer in time	29	32	29	31	27	28	29	50	30	46	27
Mean	1375	1450	1231	1177	810	1749	877	2125	1076	7587	1363
Median	1400	1760	1580	1700	400	1432	200	1700	1100	1000	1760

Rebased Sample	1396	141	292	273	70	374	60	8	732	34	463
Unweighted Sample	1437	123	278	282	69	465	55	9	770	38	484
	%	%	%	%	%	%	%	%	%	%	%

How many yards are there in one mile?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1437]

0 -100 yards	28	16	24	26	36	26	47	14	29	31	20
101 - 1000 yards	17	13	19	11	23	17	29	23	20	21	11
1001 - 1759 yards	14	11	11	16	12	18	15	15	18	15	9
1760 yards	33	53	40	41	24	31	4	9	25	19	54
1761 - 10,000 yards	7	7	7	6	6	8	5	39	8	15	6
Mean	1091	1450	1139	1177	810	1125	586	2125	1056	913	1288
Median	1400	1760	1564	1700	400	1400	200	1700	1100	1000	1760

	Voting intention					2010 Vote			Gender		Age				Social grade		Region					
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland	
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172	
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many metres are there in one kilometre?

[Full Sample]

0-99 metres	8	6	8	6	10	7	8	9	5	11	6	7	10	8	6	12	8	8	7	10	7	
100 metres	11	10	13	8	12	11	14	11	7	15	10	11	12	11	10	13	12	10	17	10	4	
101 - 999 metres	1	0	1	1	0	1	1	2	2	1	3	1	1	1	0	3	0	1	0	2	5	
1000 metres	57	63	57	70	44	56	53	62	65	49	68	63	57	45	65	46	54	59	58	55	53	
1001 - 10,000 metres	3	3	1	3	4	3	3	1	4	1	3	3	1	3	2	3	2	4	2	1	4	
Did not answer in time	20	18	20	11	30	22	21	15	17	23	9	15	18	31	17	24	24	19	16	21	28	
Mean	892	1165	815	958	792	1113	804	822	1090	693	844	1159	774	797	873	921	768	1090	777	803	860	
Median	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Rebased Sample	1580	X	X	X	X	439	382	353	792	788	213	424	555	388	937	643	193	523	356	384	124	
Unweighted Sample	1620	412	476	118	157	468	389	383	783	837	157	390	657	416	1086	534	222	578	317	389	114	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many metres are there in one kilometre?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1620]

0-99 metres	10	7	10	7	14	9	10	10	6	14	7	9	12	11	7	16	11	10	8	13	9
100 metres	14	12	16	9	17	14	18	13	8	20	11	13	15	16	12	17	16	12	20	13	5
101 - 999 metres	2	1	1	1	0	1	1	2	2	1	3	2	1	2	0	3	0	1	0	2	7
1000 metres	71	77	72	79	63	72	67	73	79	63	76	74	70	66	78	60	71	72	69	70	73
1001 - 10,000 metres	3	4	2	4	5	4	3	2	5	1	4	3	2	5	3	4	2	5	2	2	5
Mean	797	842	785	958	737	801	769	822	910	684	844	821	774	778	865	698	768	828	777	768	860
Median	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

How many metres are there in one kilometre?

[Full Sample]

0-99 metres	8	8	12	8	10	6	6	18	8	6	8
100 metres	11	9	14	14	14	7	10	29	12	9	11
101 - 999 metres	1	1	2	0	1	1	1	0	1	0	1
1000 metres	57	31	44	60	64	71	68	28	61	44	49
1001 - 10,000 metres	3	4	3	1	0	2	7	0	2	0	3
Did not answer in time	20	47	26	17	12	13	8	24	16	41	27
Mean	892	1960	704	769	744	905	889	414	950	761	811
Median	1000	1000	1000	1000	1000	1000	1000	100	1000	1000	1000
Rebased Sample	1580	111	306	330	85	448	77	12	876	38	465
Unweighted Sample	1620	100	291	337	78	543	72	12	918	41	486
	%	%	%	%	%	%	%	%	%	%	%

How many metres are there in one kilometre?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1620]

0-99 metres	10	14	15	10	11	6	6	24	10	10	11
100 metres	14	17	19	17	16	9	11	39	14	15	15
101 - 999 metres	2	3	3	0	1	1	1	0	1	0	2
1000 metres	71	59	59	72	72	82	74	37	73	74	67
1001 - 10,000 metres	3	7	4	1	0	3	7	0	3	0	4
Mean	797	721	704	769	744	875	889	414	802	761	767
Median	1000	1000	1000	1000	1000	1000	1000	100	1000	1000	1000

	Voting intention				2010 Vote			Gender		Age				Social grade		Region					
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many pounds are there in one stone?

[Full Sample]

0-13 pounds	10	9	9	12	3	8	8	8	13	8	22	20	5	2	10	10	15	9	12	8	9
14 pounds	67	71	66	63	67	71	66	71	62	72	59	55	72	76	70	64	57	71	64	70	67
15 - 2000 pounds	10	10	11	13	9	10	12	11	12	9	10	12	13	7	10	10	9	9	14	10	9
Did not answer in time	12	9	13	12	20	10	14	10	13	11	9	14	10	15	9	16	19	11	11	11	15
Mean	25	31	20	28	29	25	19	26	26	25	26	26	22	28	26	24	40	24	20	27	19
Median	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Rebased Sample	1734	X	X	X	X	508	417	371	831	904	215	432	606	481	1021	713	206	573	377	432	147
Unweighted Sample	1759	447	500	118	177	532	417	401	818	941	156	393	713	497	1162	597	242	612	348	425	132
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many pounds are there in one stone?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1759]

0- 13 pounds	11	10	11	14	4	9	9	9	15	9	25	23	5	3	11	12	19	10	13	9	10
14 pounds	77	78	77	71	84	79	77	79	71	82	65	63	80	89	77	76	70	80	71	79	79
15 - 2000 pounds	12	12	13	15	12	12	14	13	14	10	11	13	14	8	11	12	11	10	15	12	11
Mean	25	31	20	28	29	25	19	26	26	25	26	26	22	28	26	24	40	24	20	27	19
Median	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

How many pounds are there in one stone?

[Full Sample]

0-13 pounds	10	4	8	5	14	13	31	9	10	17	8
14 pounds	67	71	68	70	71	66	50	53	68	45	69
15 - 2000 pounds	10	5	11	13	10	9	10	0	11	15	8
Did not answer in time	12	20	13	11	5	12	8	38	10	23	15
Mean	25	19	26	26	14	23	41	13	19	23	33
Median	14	14	14	14	14	14	14	14	14	14	14
Rebased Sample	1734	167	357	351	92	454	78	10	932	49	540
Unweighted Sample	1759	143	340	353	84	554	73	11	964	49	560
	%	%	%	%	%	%	%	%	%	%	%

How many pounds are there in one stone?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1759]

0- 13 pounds	11	5	9	6	15	14	34	15	12	22	9
14 pounds	77	89	78	79	74	75	55	85	76	58	81
15 - 2000 pounds	12	6	13	15	11	10	11	0	13	20	9
Mean	25	19	26	26	14	23	41	13	19	23	33
Median	14	14	14	14	14	14	14	14	14	14	14

	Voting intention				2010 Vote			Gender		Age				Social grade		Region					
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland
Weighted Sample	1978	X	X	X	X	566	485	414	959	1019	235	500	676	566	1127	851	253	643	423	487	172
Unweighted Sample	1978	490	567	132	211	587	474	441	934	1044	170	447	786	575	1280	698	291	681	381	472	153
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many grams are there in one kilogram?

[Full Sample]

0-99 grams	6	3	8	2	6	5	8	3	5	6	4	4	7	6	3	10	7	3	6	8	9
100 grams	18	20	18	16	16	18	19	18	17	18	12	15	16	24	15	22	22	16	20	17	13
101-999 grams	1	1	0	0	0	1	0	0	0	1	0	1	0	1	1	1	0	1	0	0	2
1000 grams	62	61	61	72	56	57	56	70	66	58	79	72	62	46	71	49	55	66	62	61	57
10001- 10,000 grams	1	0	1	0	1	1	1	0	1	0	0	0	1	1	1	0	1	1	0	0	0
Did not answer in time	13	14	12	10	22	18	15	8	11	15	4	8	14	22	10	18	16	13	11	14	19
Mean	773	789	729	820	836	807	730	781	791	756	838	801	805	670	844	670	704	844	726	770	733
Median	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rebased Sample	1711	X	X	X	X	465	411	381	850	862	225	461	584	441	1018	693	214	561	379	420	139
Unweighted Sample	1739	425	510	120	178	501	413	407	838	901	163	412	696	468	1162	577	247	610	344	411	127
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

How many grams are there in one kilogram?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1739]

0- 99 grams	7	4	9	2	7	6	9	4	6	8	5	5	8	8	3	12	8	3	7	9	11
100 grams	20	24	21	17	20	22	23	20	19	22	13	16	19	31	16	27	26	19	22	19	16
101- 999 grams	1	1	0	0	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	2
1000 grams	71	71	69	80	71	69	67	76	74	69	82	78	72	58	79	60	65	76	70	70	71
1001 -10,000 grams	1	0	1	0	2	1	1	0	1	1	0	0	1	1	1	1	1	1	0	1	0
Mean	773	789	729	820	836	807	730	781	791	756	838	801	805	670	844	670	704	844	726	770	733
Median	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

	At what age did you finish full-time education?							Working Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed *	Not working/ Other
Weighted Sample	1978	207	411	395	97	517	84	16	1042	64	636
Unweighted Sample	1978	172	386	401	89	616	77	17	1072	59	643
	%	%	%	%	%	%	%	%	%	%	%

How many grams are there in one kilogram?

[Full Sample]

0-99 grams	6	13	8	3	5	4	3	23	5	8	7
100 grams	18	23	22	19	18	13	10	10	16	14	22
101-999 grams	1	1	1	1	0	0	0	0	1	0	1
1000 grams	62	32	49	67	66	74	85	53	68	62	50
10001- 10,000 grams	1	1	1	1	0	0	0	0	0	0	1
Did not answer in time	13	30	19	9	11	9	2	13	11	16	19
Mean	773	535	749	777	767	848	875	628	815	748	700
Median	1000	100	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rebased Sample	1711	145	332	358	86	470	82	14	931	54	516
Unweighted Sample	1739	130	318	363	82	561	75	14	973	49	535
	%	%	%	%	%	%	%	%	%	%	%

How many grams are there in one kilogram?

[Rebased Sample; only those respondents who answered within the 10 second time frame; n=1739]

0- 99 grams	7	19	10	4	5	5	3	27	6	10	9
100 grams	20	32	27	21	20	14	11	12	17	17	27
101- 999 grams	1	2	2	1	0	0	0	0	1	0	1
1000 grams	71	46	60	74	75	81	86	61	76	73	62
1001 -10,000 grams	1	1	1	1	0	0	0	0	0	0	1
Mean	773	535	749	777	767	848	875	628	815	748	700
Median	1000	100	1000	1000	1000	1000	1000	1000	1000	1000	1000

Appendix B.2



"Daily Polling"

FIELDWORK DATES: 7TH - 8TH NOVEMBER 2013

Prepared by YouGov plc
On behalf of UKMA

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Appendix B.2

DP_ThursdayPM_07_11_13

DP_FridayAM_08_11_13



BACKGROUND

This spreadsheet contains survey data collected and analysed by YouGov plc. No information contained within this spreadsheet may be published without the consent of YouGov Plc and the client named on the front cover.

Methodology: This survey has been conducted using an online interview administered members of the YouGov Plc GB panel of 185,000+ individuals who have agreed to take part in surveys. An email was sent to panellists selected at random from the base sample according to the sample definition, inviting them to take part in the survey and providing a link to the survey. (The sample definition could be "GB adult population" or a subset such as "GB adult females"). YouGov Plc normally achieves a response rate of between 35% and 50% to surveys however this does vary dependent upon the subject matter, complexity and length of the questionnaire. The responding sample is weighted to the profile of the sample definition to provide a representative reporting sample. The profile is normally derived from census data or, if not available from the YouGov plc make every effort to provide representative information. All results are based on a sample and are therefore subject to statistical errors normally associated with sample-based information.

For further information about the results in this spreadsheet, please contact YouGov Plc (+44)(0)20 7 012 6000 or email enquiries@yougov.com quoting the survey details

EDITOR'S NOTES - all press releases should contain the following information

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 1,878 adults. Fieldwork was undertaken between 7th - 8th November 2013. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+).

NOTE: All press releases or other publications must be checked by YouGov Plc before use. YouGov requires 48 hours to check a press release unless otherwise agreed. Please note, multiple press releases will require longer.

- YouGov is registered with the Information Commissioner
- YouGov is a member of the British Polling Council

Any percentages calculated on bases fewer than 50 respondents must not be reported as they do not represent a wide enough cross-section of the target population to be considered statistically reliable. These figures will be italicised.

Appendix B.2

YouGov / UKMA Survey Results

Sample Size: 1878 GB Adults

Fieldwork: 7th - 8th November 2013

	Voting intention				2010 Vote			Gender		Age				Social grade		Region						
	Total	Con	Lab	Lib Dem	UKIP	Con	Lab	Lib Dem	Male	Female	18-24	25-39	40-59	60+	ABC1	C2DE	London	Rest of South	Midlands / Wales	North	Scotland	
Weighted Sample	1878	472	550	143	153	544	466	423	911	967	223	475	642	537	1070	808	240	610	402	462	163	
Unweighted Sample	1878	443	573	121	190	548	482	424	906	972	148	414	791	525	1206	672	240	595	364	496	183	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

Which of the following do you think are the most important issues in deciding how to vote in the next general election? Please tick up to four.

The economy	60	72	62	66	51	65	61	66	65	56	53	59	59	66	65	54	57	61	58	61	65
Immigration & Asylum	48	63	40	31	83	67	44	38	45	51	32	32	50	68	44	55	43	51	50	51	37
Health	37	30	49	36	32	29	44	45	32	42	26	29	40	46	36	38	37	33	41	38	38
Welfare benefits	36	33	44	27	40	34	40	33	35	37	32	37	34	39	33	39	33	33	35	40	41
Tax	26	34	21	38	21	30	20	26	28	24	23	34	28	18	28	23	23	27	24	28	29
Pensions	24	19	30	25	35	24	29	21	22	26	7	14	26	37	24	24	24	23	22	25	27
Europe	23	35	13	21	55	36	15	18	29	18	16	16	23	32	23	23	22	24	24	25	17
Education	20	17	24	26	8	14	19	29	18	21	28	22	20	15	22	17	19	19	19	22	18
Crime	16	16	15	8	19	18	15	12	16	16	11	13	19	17	14	18	16	14	15	19	18
Housing	16	10	23	19	10	9	23	20	16	15	16	17	15	15	15	16	24	16	12	11	21
Family life & childcare	11	7	15	2	9	8	14	9	9	12	11	17	10	6	9	12	10	12	10	10	10
The environment	9	6	9	15	4	6	7	14	7	10	9	13	8	6	10	8	12	9	9	8	8
Transport	6	8	8	8	1	5	7	8	8	5	7	10	6	4	8	4	9	7	7	5	5
Same sex marriage	4	4	3	6	8	4	2	4	4	4	8	4	3	4	5	3	6	4	3	4	3
Afghanistan	3	4	3	6	5	4	3	4	3	4	3	2	3	6	3	4	3	3	6	2	3
Badger cull	2	1	2	1	3	1	2	2	1	3	1	2	3	2	2	3	1	2	3	2	2
Complete conversion from imperial to the metric measurement system	1	0	1	1	2	1	1	1	1	0	0	1	0	1	1	0	0	0	1	1	0
None of these	1	1	0	1	0	1	1	1	1	2	1	1	1	0	1	1	2	1	1	1	2
Don't know	5	2	1	0	0	4	2	3	5	5	19	8	2	0	5	5	4	6	6	3	4

*Any percentages calculated on bases fewer than 50 respondents do not represent a wide enough cross-section of the target population to be considered statistically reliable. These figures will be italicised.

Appendix B.2

YouGov / UKMA Survey Results

Sample Size: 1878 GB Adults

Fieldwork: 7th - 8th November 2013

	At what age did you finish full-time education?							Work Status			
	Total	15 or under	16	17-18	19	20+	Still at school/Full time student	Can't remember *	Employed	Unemployed	Not Working/ Other
Weighted Sample	1878	230	400	369	93	541	90	16	1025	65	654
Unweighted Sample	1878	205	374	357	88	645	68	16	1054	65	638
	%	%	%	%	%	%	%	%	%	%	%

Which of the following do you think are the most important issues in deciding how to vote in the next general election? Please tick up to four.

The economy	60	54	56	58	61	68	65	37	60	54	62
Immigration & Asylum	48	75	59	51	38	35	29	20	43	46	58
Health	37	38	38	35	35	40	21	18	33	23	43
Welfare benefits	36	41	39	39	39	31	26	25	33	40	40
Tax	26	18	23	25	37	29	33	39	32	30	16
Pensions	24	40	25	22	18	21	15	21	22	3	29
Europe	23	31	24	19	18	24	18	3	20	28	27
Education	20	6	15	17	27	27	37	7	19	38	19
Crime	16	30	14	18	14	12	17	0	17	7	16
Housing	16	14	16	14	14	16	15	7	13	32	17
Family life & childcare	11	10	10	12	13	11	5	0	11	11	9
The environment	9	5	7	7	8	13	14	0	10	15	6
Transport	6	2	6	5	6	10	8	0	7	15	5
Same sex marriage	4	3	3	6	2	4	8	0	4	1	4
Afghanistan	3	6	5	2	2	2	1	2	2	3	5
Badger cull	2	2	2	3	3	2	1	13	2	3	2
Complete conversion from imperial to the metric measurement system	1	1	0	0	0	1	0	0	1	0	1
None of these	1	1	1	1	1	1	2	8	1	2	1
Don't know	5	1	4	8	2	4	8	22	5	2	4

**Any percentages calculated on bases fewer than 50 respondents do not represent a wide enough cross-section of the target population to be considered statistically reliable. These figures will be italicised.*

Appendix C: brief history of Government policy on metrication

It was in 1965 that the Government first announced its intention to adopt the metric system as the primary and eventually the only system of measurement to be used for all official and legal purposes in the UK¹. Since then successive UK governments have, with varying degrees of commitment, reaffirmed their support for completing the metric changeover.

In 1972 the (Conservative) Government, after a pause to review the policy, concluded that "the time has now come when they must act to ensure the orderly completion of the process."²

During the 1970s, '80s and '90s, under governments of both parties, the process of metrication continued - albeit very slowly. Most imperial units had been phased out as primary measures by the mid 1990s, and loose goods sold from bulk were required to be measured in metric units from 2000.

In 2004, Prime Minister Tony Blair wrote to Lord Howe of Aberavon that "we concluded that the switch from the pound to the kilogram for pricing and weighing loose goods - legislated for in 1994 and planned for the end of 1999 - should proceed. But we also concluded that the optional use of imperial units as supplementary indications alongside metric units should be permitted after 1999."³ Later, supplementary indications were permitted indefinitely.

In 2010, on behalf of the coalition Government, David Willetts MP, Minister of State for Universities and Science, Department for Business, Innovation and Skills wrote as follows: "The UK is already substantially metric and so turning back the clock to a single system of imperial units is no longer an option. To do so would create a major disadvantage for UK plc in its dealings with the rest of the world, put us in breach of our European obligations, and impose additional costs on business and the public sector ...

... it remains important for fair trade that there is a single set of units in use for trade. Returning to the use of imperial units even for a narrow range of goods would, at this stage, unfairly disadvantage the vast majority of businesses who have already switched over to metric units. It would also reduce consumer protection as buyers would no longer be able to compare prices, undermining consumer confidence in the marketplace and leading to a potential market failure."⁴

From these statements it can be concluded that the original intention of the 1965 announcement remains intact: the metric system is the primary system of weights and measures to be used in the UK for all official, legal and trading purposes - with the exception of speed and distance measurement on road traffic signs, and pints for draught beer and cider and doorstep milk.

¹ See Department of Trade and Industry (DTI) (1995) *The adoption of the International System of Units as the primary system of measurement in the United Kingdom*, esp. p. 8, available at <http://ukma.org.uk/docs/dti-summary-metric-changeover.pdf> accessed 8 January 2014

² DTI (1972) *Metrication* Cmnd 4880

³ Letter from Tony Blair to Lord Howe, 15 September 2004

⁴ Letter to the British Weights and Measures Association, 6 June 2010

Significantly, in the same letter, Mr Willetts went on to say "we have no plans to introduce any further metrication."

From discussions with Government officials it is clear that the theory behind the current and the previous Government's stance is that, since children following the national curriculum are taught maths and science in metric units (albeit with rough imperial equivalents), as the population ages and younger age cohorts replace the older, there will be growing acceptance and adoption of metric units. Eventually, metric units will naturally become the default system for the whole population, and any remaining steps to achieve full metrication (such as converting road signs) can be achieved smoothly without undue controversy.

Above all, and crucially, the flawed theory held that full metrication can thus be achieved without any need for government action, and in any case any further steps that may be required can be left for a future government to deal with.

Appendix D: Previous surveys of support for metrication

There have been a number of previous surveys of public opinion on various aspects of metrication, albeit they are not directly comparable with the YouGov/UKMA survey in 2013. Many of these have been unrepresentative and/or biased and not validated by a reputable polling company regulated by the British Polling Council. The most useful are:

- The Metrication Board survey in August 1979
- Gallup survey in 1995
- Ipsos-MORI for The Sun in 2007

Metrication Board survey in August 1979

The exact questions asked in the 1979 survey are not available, so direct comparison with the 2013 survey is not possible. However, the main findings were that 95% of adults were aware the country was changing to the metric system and that 84% of those who knew this thought that it was Government policy to go metric. 31% of people who knew about the change were in favour and 46% opposed.

See <http://ukma.org.uk/sites/default/files/met1980.pdf> (paragraphs 3.14 and 3.15)

Gallup survey in 1995

It has not been possible to locate this survey on the Gallup website. However, according to the website of the British Weights and Measures Association (BWaMA) it showed a 52%-37% majority replying "No" to the question: "Do you approve of the decision to switch over to the Continental system, using metres instead of yards and litres instead of pints?" (Note the use of the term "Continental", which may have influenced the results).

IpsosMORI for The Sun in 2007

This was a general survey of attitudes to the EU and was called "EU survey for The Sun"⁵. The 12th question was:

"Qu.12. As you may have heard, the EU recently decided to drop rules that would require Britain to use metric measurements instead of traditional units like pounds, pints and miles. How strongly would you support or oppose Britain switching to using entirely metric measurements, rather than continuing to use traditional units?"

56% of respondents were opposed to the switch, compared with 19% in favour.

⁵ See <http://www.ipsos-mori.com/Assets/Docs/Archive/Polls/s070922.pdf> retrieved on 2 January 2014

Arguably, the wording of the question (e.g. use of "traditional") and the linking of the issue to the EU, may have biased the results of the survey toward the opposition to completion of metrication.

Conclusion

In view of the paucity and unreliability of the data, It is not possible to draw firm conclusions from this series. However, it can be said that there is no evidence from these figures that in the 34 years since the Metrication Board survey, there has been any growth in public support for completing metrication.

This finding conflicts with the theory that support for metrication will grow as younger metric-educated age cohorts replace older cohorts in the population.

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