D U O D E C I M A L

N E W S C A S T

Year 3
No.3
December
1175

The Duodecimal Society of Great Britain,
106, Leigham Court Drive, Leigh-on-Sea, Essex.

Price:
1 shilling.

Contents

E D I T O R I A L

Three years have passed since the Duodecimal Society of Great Britain was founded: the first was one of formation, the second of growth, the third of consolidation. Our Society has already entered its fourth year, which must be one of advance. We -- that means you, as well as your Council -- must work hard. We must increase publicity in all possible ways; for example by letters and articles to newspapers and periodicals, letters to public authorities and to firms, and the most effective way of all, by personal recommendation to friends, colleagues and acquaintances. Thought and research on general as well as specialist applications are still needed.

Criticism has been made that the 'Duodecimal Newscast' is tending to get too technical at times. There may be some truth in this. Readers, however, can help put this to rights; for the Newscast relies on Readers' articles and letters. Next year it is planned to have a series of articles laying out the basic principles of the dozenal system for those whose talents lie more outside mathematics and technics.

Comments, criticisms and queries are welcome at all times. More articles are needed urgently from non-mathematicians as well as the experts.

HAPPY CHRISTMAS 1175 ==== HAPPY NEW YEAR 1176

The Duodecimal Society of Great Britain

106, Leigham Court Drive, Leigh-on-Sea, Essex

GENERAL MEETING

The third General Meeting of
the Duodecimal Society of Great Britain
will be held at

the Raglan Hotel
Aldersgate Street

at half past six p.m. on
Thursday, the fourth day of JANUARY, ǂ1176

Subjects for discussion

1. Progress in ǂ1175
2. Finance
3. Election of Council
4. Policy for next year
5. Other business.

Light refreshments

All members, friends and well-wishers are cordially urged to come along. Please notify the Hon. Secretary as soon as you can whether you expect to attend and of any matters you will wish to have raised if you cannot attend.

Nearest Undergound Station: St. Paul's (2 mins)
Bus routes: ✈ 7, 8, 22, 23, 25, 32 East/West St. Paul's
4, 179 North/South to St. Martin's-le-Grand (1 min.)

To: The Hon. Secretary. The Duodecimal Society of Great Britain.

I expect/do not expect to attend the General Meeting.
I shall be accompanied by .... guests.

It would be convenient for me next year if the fourth General Meeting could be held on .....

Signature .....

DUODECIMAL SOCIETY NOTES

Subscriptions for the forthcoming calendar year 1176 are due on 1 January.

Will everybody please help the Treasurer-Secretary, who is very busy, by paying subscriptions promptly. In order to undertake the tasks which we must undertake immediately, while the time is ripe, more money is needed: any donations, however small, are vital. You can tear off the slip at the bottom of the page.

The subscription rates are as follow:

Ordinary Membership	1 dozen shillings per year
Younger Membership	6 shillings per year
Life Membership	2 gross shillings once only
Subscribing Supporter	1 dozen shillings per year

Publications of the Society are going cheap, and subscription time is a convenient time to order. See page 6 for details. Free leaflets can be ordered in any quantity for distribution.

The Circulator has again got lost.

We sent out another envelope of embryonic ideas for those Members who had expressed interest in the "circulator" to pass from one to another in a circle. We have heard no more since we sent it out in the Summer.

If anyone still has it, would they please post it to the Hon. Secretary? Will those who saw it please also let the Secretary know?

M E M B E R S H I P

New Ordinary Members

Mr. E.A. Wildy, B.Sc., A.C.G.I., A.M.I.Mech.E.,
"Willestrow", Heathside Park Road, Woking, Surrey.

Revd. R.W. Palmer, M.A.(Cantab.), 355, Southcoates Lane, Hull Yorks

Life Member -- changed from Ordinary Member

Prof. A.C. Aitken, MA, D.Sc, FRS, etc., 36 Primrosebank Road, Edinburgh 5.

To: The Hon. Treasurer, The Duodecimal Society of Great Britain

I herewith remit the sum of £....s....d., as my subscription for the year 1176 (≠1962) and contribution to the funds of the Society.

Date..... Signature .....

NOTES FROM AMERICA

The latest 'Duodecimal Bulletin' of the Duodecimal Society of America is not long out. It contains a report of their Annual Meeting on 18 April 1175 in the Carnegie International Center, reported on by 'The New Yorker'.

Membership of all classes totalled 6[illegible]. The year 1174 closed with assets of about $*4,000 after a year of rare heavy expenses, mainly for printing. Demands for their literature had increased.

The First International Dozenal Conference in Normandy in September 1174 with the resulting proposal to form the International Duodecimal Association was deeply discussed. Particular proposals of interest were: a) the adoption of a unit of length 10^{-7} part of the earth's circumference, equivalent to *38 inches; b) the duodecimal division of the circle; c) the duodecimal division of the day into "duors" (equivalent to 2 present hours); d) the symbols for ten and eleven; e) other units.

The following statement on symbols and standards is important and accords with the intention of this Society not to make an exclusive official choice: "The Duodecimal Society of America has not officially adopted, nor endorsed, any symbols nor standards of measure. It has permitted the usage of [illegible] and [illegible] and of a duodecimal system of standards involving the inch, foot, and yard, the pint and the pound, as aids in education of the public in duodecimals, and in enlisting general interest".

The U.S. Army plan to adopt metric dimensions for its general weapons, because of the importance of interchangeability and international unity in the equipment for the common defence of the free world. The American Association for the Advancement of Science has not accepted the D.S.A.'s application for affiliation.

The Board elected Mr. Charles S. Bagley, geodesist at the Air Force Missile Development Center, as President of the Society to replace Mr. Kingsland Camp, who had served six important years in that post. Mr. Frank Emerson Andrews continues as Chairman of the Board, Mr. Ralph H. Beard as Secretary, Mr. H. K. Humphrey as Treasurer.

Other articles include R. [illegible]. Edelen's 'A Duodecimal Abacus' (easy to make out of a few struts of wood, some wire and beads), R. A. Sexton's 'Merits of duodecimal number system warrant a change', H. C. Churchman's 'Doremic scientists' volume, mass and money' (about measurements based on the duodecimal division of the earth's circumference with refererences to surprisingly close equivalent tradition units), and G. S. Cunningham's 'A duodecimal theorem of the powers of two'.

QUESTIONNAIRE RESULTS

The results are encouraging, though some shew a trend of thought to be followed, rather than an effective decision.

In choosing principles on which to build the new metrology the majority of members chose the "Great Circle" principle; i.e., the Great Circle divided into 10^7 new major units. There was no clear majority on the names, which need more discussion.

A similar result happened in the Circle and Time sections. For the Circle, a division into *100 units, these divided each by *100, and then by *100 again was chosen by the majority. The names achieved no majorities. For Time the "biheure" plan had most support: *10 'hours' to the day, each divided into *100 units and these into *100 again. Again, the names were not clearly decided.

Thermometry had a clearer result: the majority thought $*0^{\circ}$ should be freezing and $*100^{\circ}$ boiling point of water. Many preferred the proposal to adjust the value of the standard air pressure so that absolute zero would be 0°, freezing point $*200^{\circ}$ and boiling points $*300^{\circ}$.

A clear majority favoured the cube of gold instead of water for derived weights.

On currency, the proposal chosen by a majority vote of almost *80 per gross (40 p.g. being split over the other proposals) was that which seemed simplest: the penny and shilling to remain, and two new units of $*10^s$ and $*100^s$ to be added. No name proposed had sufficient support, and further suggestions are invited.

We also received a number of extra proposals, some of them departing from the relationship of 1:10:100, etc.

TABLE OF MAJORITY-ACCEPTED PROPOSALS:

Land measure: Great Circle = *10,000,000 new units ("a") of *3;8 ft. each. Other units of 10"a", 100"a", 1000"a" (=1"a"),

Circular measure: Circle = 100"d", 1"d"= 100"e", 1"e"= 100"f" with the alternative expression as dozenals of the circle

Time measure: Day = 10"g", 1"g"= 100"h", 1"h"= 100"j", where "h" replaces the present minute, "j" the present second.

Thermometry: Freezing of water = 0°, boiling = 100° where also we may take absolute zero = 0°, freezing water = 200°, boiling = 300°.

Weight measure: A cube of gold of side 1"a" be the standard

Currency: 1000 pence = 100 shillings = 10"k" = 1"m"

We shall review this again in our next Newscast.

DUODECIMAL PUBLICATIONS, etc.

The following publications are strongly recommended. All are available through the Society, packing and inland postage a penny in the shilling extra. Those marked ø are available through shops.

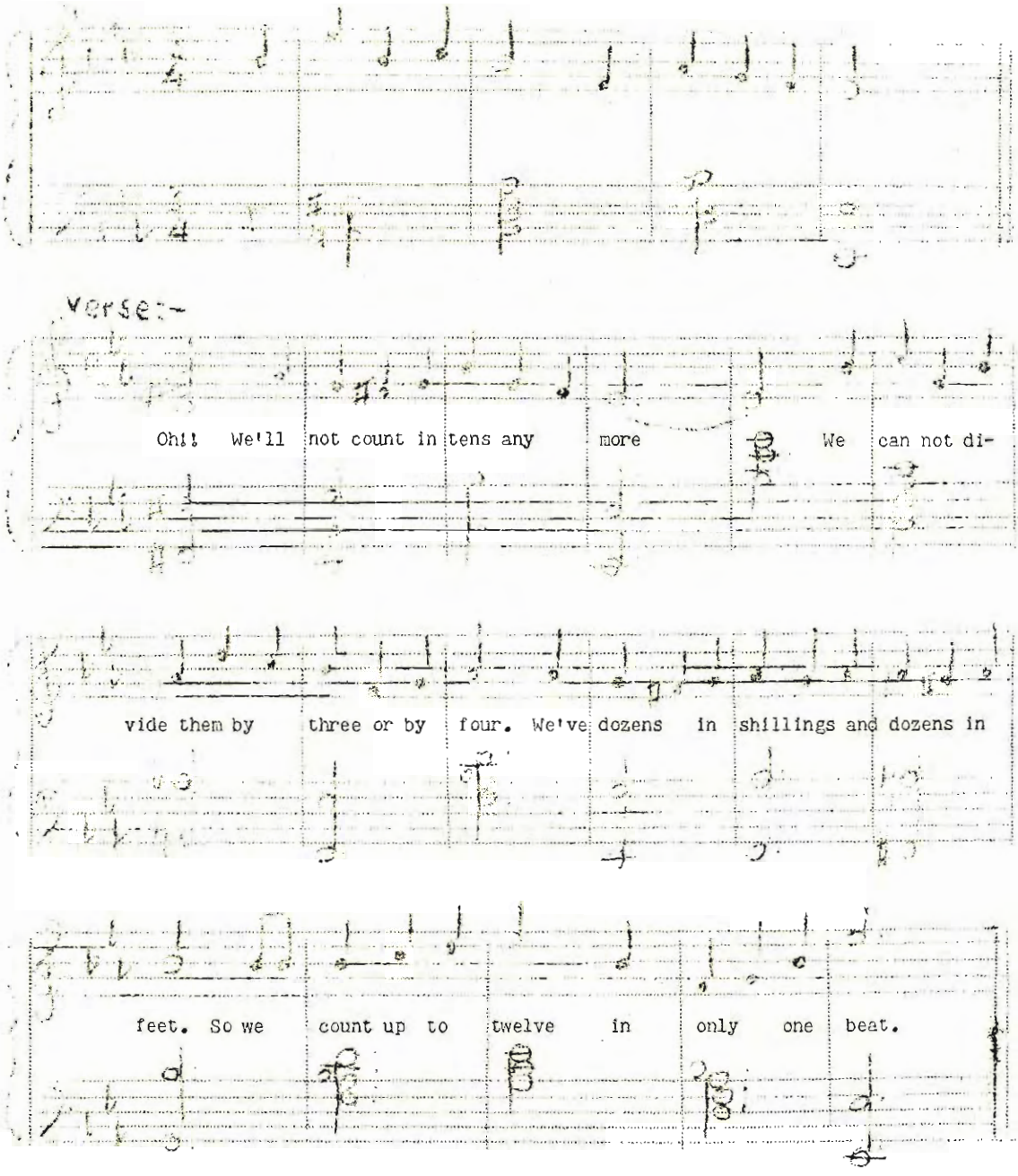
Logical Money, Weights and Measures	free
Duodecimal Leaflet	free
Duodecimal Newscasts for *1173	;6d
" " for *1174 and 1175	1s;0d
C.J. McMullen A Duodecimal Calendar (Offprint No.1)	;6d
Summary of New Duodecimal Notations (Offprint No.2)	;2d
S. Ferguson A revised Currency (Offprint No.3)	;6d
Duodecimal Metric Proposals (Offprint No.4)	;2d
Report of Duodecimal Summit Conference (Offprint No.5)	;2d
S. Ferguson Measuring Our Way (Offprint No.6)	;2d
New Duodecimal Notations and Names (Offprint No.7)	;2d
R.J. Hinton A Set of Symbols to facilitate the Mathematics and Practice of Dozens (Offprint No.8)	;2d
D.A. Sparrow A suggested Series of Notations and Names (Offprint No.9)	;2d
F. Emerson Andrews An Excursion in Numbers	a few free
" " " Ekskurso en nombroj (in Esperanto)	a few free
Ralph H. Beard Antipatio al aritmetiko " "	a few free
øJ. Halcro Johnson The Reverse Notation	4s;0d
øJean Essig Douze notre dix futur (in French)	13s;0d
ø " " La Duodécimalité: Chimère ou vérité future	6s;6d
Duodecimal Society of America Manual of the Dozen System	7s;6d
" " " " The Duodecimal Bulletin	3s;6d
" " " " Circular Slide Rule ø5 or £2:0:0	

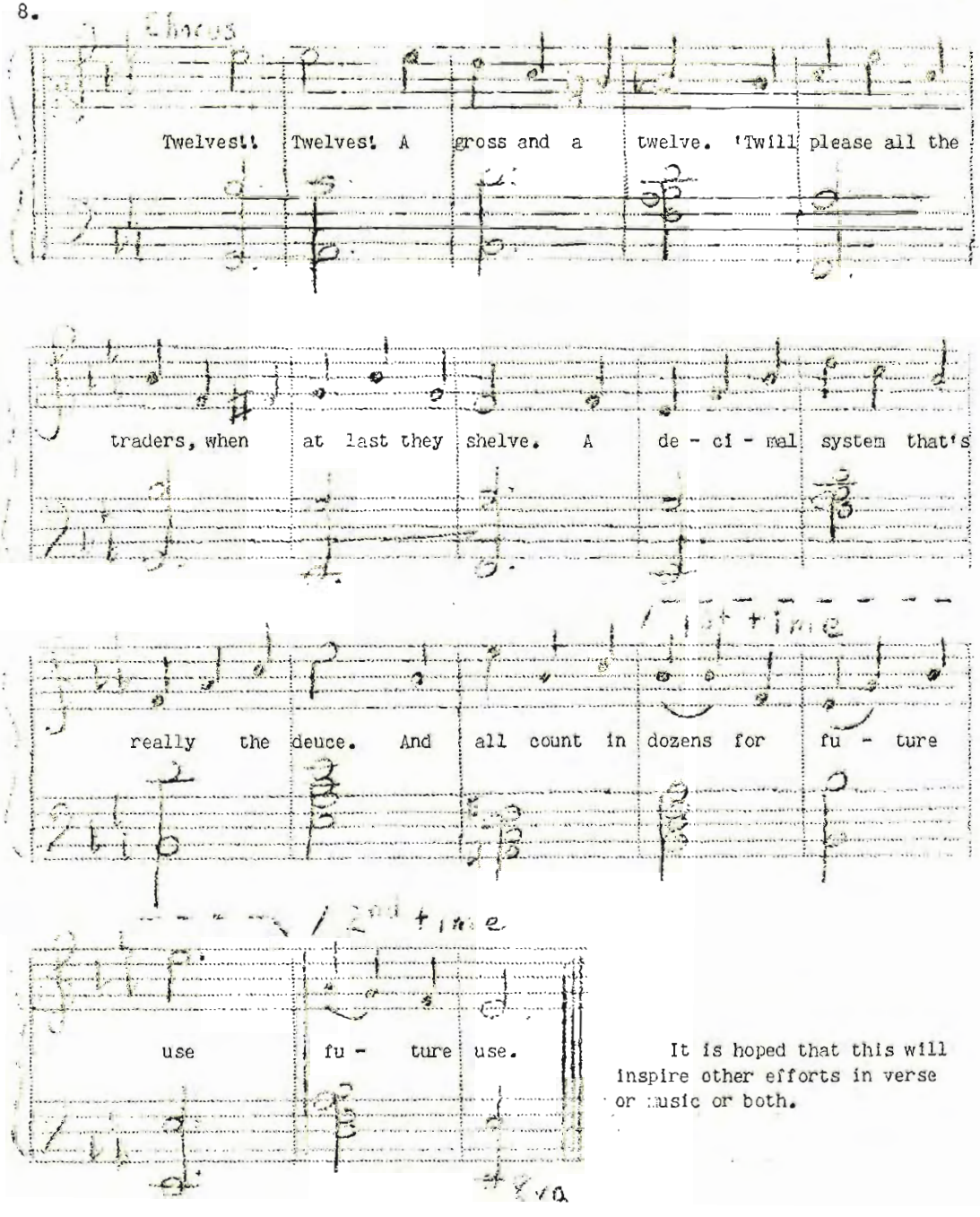
S A L E !!! S A L E !!!

Any publication of the
Duodecimal Society of Great Britain
can be bought at
A QUARTER OF THE STATED PRICE
until the 27 March 1176

S A L E !!! S A L E !!!

by an anonymous member





It is hoped that this will inspire other efforts in verse or music or both.

A One-way or a Two-way Notation ?

BY J. Halcro Johnston, J.P., B.Sc.(Eng.), M.I.C.E. (ret'd)

The first aim of this society - as recently approved - is "to draw attention to the advantages of the dozen for counting and measuring". Now whereas a dozen implies twelve different digits the choice of this base still leaves some scope in the selection of these digits: they may, for instance, be selected to give either a one-way or a two-way system of notation. Which do we adopt?

The Arabic notation is a one-way notation and up till now no other system has been tried out. But rather than blindly to follow tradition should we not first ask ourselves the question, "Is there any demand for a two-way system and, if so, what advantages and disadvantages would it have when compared with the traditional one?"

In a one-way system all the digits point in the same direction: they form a one-way street. In a two-way system, on the other hand, half the digits point to the right, the other half to the left. Or, put in other words, half are positive, the other half negative: they form a two-way street. If 3 is used to represent a movement of 3 miles in a southerly direction $\bar{3}$ will represent the same movement in a northerly direction. There would be no digits greater than 6 and the duodecimal number 29, for example, would be written $3\bar{3}$, that is, 3 dozen in one direction plus 3 units in the opposite direction. Would such a two-way system be of practical use?

For the purpose of his decennial census of population the Registrar-General no doubt needs nothing better than the present notation because all his measurements are of one kind - positive. But a little consideration will show that this use of figures is the exception rather than the rule. Book-keeping, for instance, is a two-way operation - every debit has a corresponding credit. Book-keeping deals with negative as well as positive numbers. Now the object of the book-keeper is usually to find a net figure such as a profit or a loss got by summing credits and debits separately and finding their difference. Note that the negative and positive numbers have to be entered in separate columns and generally on separate pages of the folio. Under a two-way notation account-keeping would be simplified: debits and credits would be entered in the same column and their sum would give the net figure or balance required.

Again we say "The train leaves at 5 to 4". On the departure board at Victoria Station this would appear as 3.55. But if the railway authorities were to adopt a two-way system it would appear as $4,\bar{5}$, showing that, in conversation, we now sometimes use a two-way notation.

What we call negative numbers are never welcomed in our present number system: we try to avoid them if we can. They do not fit into the system. Yet numbers of both signs are in constant use - a fact that is masked by the number system used. The book-keeper treats them all as if they were all of one sign and only decks them in their true colours when he subtracts them at the end. Now subtraction is an operation that need never be used in a two-way system of notation.

Clearly there is a demand for a two-way system and in the following respects it would be better than the present one:

(a) Book-keeping would be simpler and there would be a considerable saving in paper: under the present system pages are often left black.

(b) Subtraction could be eliminated and addition would be speeded up as reverse digits would cancel out (e.g. $4 + \overline{4} = 0$)

(c) Approximate arithmetic would be simpler: to find a sum to the nearest 1000, for example, the units and dozens could generally be ignored. For the same reason errors would be more easy to discover.

(d) Arithmetic and investigation into number theory would be simplified. Alternating duodecimals would be shown correctly. Thus

$1/7 = 0.\overline{2\overline{3}5}$ .... alternating.

(e) There would be economy in figures and in printing. The engineer, for instance, would measure from a zero at the centre of the bridge he is building rather than at one end of it. There measurements are already made from a central point or line as, for instance, declinations are measured from the equator in astronomy then the signs + and - or N. and S would be unnecessary. (see these tables in Whitaker's Almanack for example).

(f) Ten and eleven would be printed $1\overline{2}$ and $1\overline{1}$ and the vexed question of which symbols to use would be solved.

(g) The two-way system could do all the duties of the one-way system and do them more efficiently.

Coming next to the question of disadvantages the only one I have been able to discover is the labour and cost of the change-over from the present one-way decimal system, a disadvantage which, however, is not inherent in the system itself and which would be no greater than that due to a similar change-over to a one-way duodecimal system.

Space does not permit me to go fuller into the arithmetic of this interesting notation. For details of that arithmetic I would refer the reader to my book 'The Reverse Notation' or to an article which appeared in 'The Duodecimal Bulletin' Vol. 6 No.2 Aug. 1950.

J. Halcro Johnston

Index to 'Duodecimal Newscasts' for 1175, Year 3

D E C I M A L E V E N T S

During the Autumn interest in decimal coinage in Westminster crescendoed, with questions being put in both Houses. At the time of going to press, the Government have promised to make a statement before the end of the year. Rumour has it that there will be a bias towards decimalization. If this be so, we look to all duodecimal friends and supporters to prove themselves with all their utmost support. Let our voice be heard everywhere.

We have sent copies of our leaflet to selected Members of the House of Lords and to all Members of the House of Commons, to shew that, if the decimal system is easier, the duodecimal system is easiest.

There are now two Weights and Measures Bills still on the Commons' books. These are mainly to protect the consumer against wrong weights and measures in purchases, and the important reference to units is to relate the yard and pound to the metre and kilogramme.

CALENDAR FOR 1176

JANUARY

Sunday		7	12	19	24
Monday	1	8	13	1Ɛ	25
Tuesday	2	9	14	1Ɛ	26
Wednesday	3	Ƨ	15	20	27
Thursday	4	Ɛ	16	21	
Friday	5	10	17	22	
Saturday	6	11	18	23	

FEBRUARY

	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ		
2	9	14	1Ɛ		
3	Ƨ	15	20		

MARCH

	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	
2	9	14	1Ɛ	26	
3	Ƨ	15	20	27	

APRIL

Sunday	1	8	13	1Ƨ	25
Monday	2	9	14	1Ɛ	26
Tuesday	3	Ƨ	15	20	
Wednesday	4	Ɛ	16	21	
Thursday	5	10	17	22	
Friday	6	11	18	23	
Saturday	7	12	19	24	

MAY

	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	
2	9	14	1Ɛ	26	
3	Ƨ	15	20	27	
4	Ɛ	16	21		
5	10	17	22		

JUNE

	3	Ƨ	15	20	
	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	
2	9	14	1Ɛ	26	

JULY

Sunday	1	8	13	1Ƨ	25
Monday	2	9	14	1Ɛ	26
Tuesday	3	Ƨ	15	20	27
Wednesday	4	Ɛ	16	21	
Thursday	5	10	17	22	
Friday	6	11	18	23	
Saturday	7	12	19	24	

AUGUST

	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	
2	9	14	1Ɛ	26	
3	Ƨ	15	20	27	
4	Ɛ	16	21		

SEPTEMBER

	2	9	14	1Ɛ	26
	3	Ƨ	15	20	
	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	

OCTOBER

Sunday		7	12	19	24
Monday	1	8	13	1Ƨ	25
Tuesday	2	9	14	1Ɛ	26
Wednesday	3	Ƨ	15	20	27
Thursday	4	Ɛ	16	21	
Friday	5	10	17	22	
Saturday	6	11	18	23	

NOVEMBER

	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	
2	9	14	1Ɛ	26	
3	Ƨ	15	20		

DECEMBER

	2	9	14	1Ɛ	26
	3	Ƨ	15	20	27
	4	Ɛ	16	21	
	5	10	17	22	
	6	11	18	23	
	7	12	19	24	
1	8	13	1Ƨ	25	