

# DSA Newscast

## MAKING A TGM CLOCK

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**L**AST MONTH we saw how the time units of TGM, a coherent dozenal metric system, work, and noted that they work very well with our current time units; specifically, that the hour is the same, and that the five-minute periods that represents the major divisions of our clock are actually even dozenal units in TGM. We also noted that you don't need to worry about buying new TGM clocks, because your analog clocks are TGM already.

So rather than go directly to TGM units of length, we're going to build a TGM clock in this issue!

Start by purchasing a simple, cheap plastic wall clock, of the sort that graces the walls of classrooms, offices, and kitchens all over the country. Something like this, which your author purchased for about \$3;6 at a local thrift store:



Click for Full-size Image

There will *always* be a way to disassemble this clock easily and non-destructively; that is, such clocks will be able to have their glass faces removed without breaking (there is no question of disassembling the motor itself, which is unnecessary with this method). For this clock, there is a simple set of screws on the back:



Click for Full-size Image

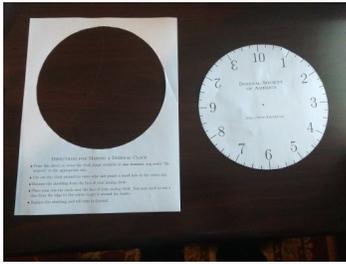
Simply remove these screws, and you'll find that the back (with motor, face, and hands attached) will pop right off:



Click for Full-size Image

Print out the handy clock-sheet you can download at [http://www.dozenal.org/drupal/content/tgm\\_tools\\_files.html](http://www.dozenal.org/drupal/content/tgm_tools_files.html). This is for a (relatively) standard seven-inch clock; if your clock is a different size, you can also download the clock-image file from the same source, resize it as you will, and print that out instead. Once this is done, cut out the clock face image:

*The Dozenal Society of America is a voluntary, nonprofit educational corporation, organized for the conduct of research and education of the public in the use of dozenal (also called duodecimal or base twelve) in calculations, mathematics, weights and measures, and other branches of pure and applied science.*



Click for Full-size Image

Now comes the only part that's even remotely tricky: attaching the printout to the clock face. The hands will get in the way. I've found that the easiest way is to cut a slit to the center of the printout, then cut out a hole to accommodate the hands; if you can think of a better way, please let me know.

Attach the printout to the clock face, making sure you line up the twelves. Be careful not to allow any bulges here that

might interfere with the rotation of the hands. Transparent scotch tape serves well for this purpose:



Click for Full-size Image

Before you close it up, rotate the hands all the way around to ensure that there aren't any bulges blocking their transit.

Now, the only thing left is to reattach the back:



Click for Full-size Image

And now you have a dozenal clock! This is not only a great way to begin using dozens in your everyday life; it's also a great conversation-starter and example to teach people about dozens.

Happy dozens!

*The DSA does not endorse any specific system of dozenal weights and measures, of which there are many. We encourage our members to try and explore many of them.*

## DOZENAL NEWS

### ERRATA FROM ISSUE 07:01

John Volan (#418) has pointed out two errors in our featured article last month. (1) We loosely and incorrectly referred to the original metric system as *le système internationale*, when "SI" (a form of the original metric system) did not come into existence until much later. Simply "the metric system" would have been more accurate. (2) One ten-thousandth of one quarter of the circumference of the earth was to be the *kilometer*, not the meter; though of course the meter was derived from this. Thanks, John!

Akash Peshin has written a splendid little article, *Why We Should Use Base-12 Instead of Base-10?*

<https://www.scienceabc.com/eyeopeners/why-we-should-already-use-base-12-instead-of-base-10.html>

Not particularly in depth, but a good and entertaining introduction of the topic assuming an unfamiliar but interested reader. Goes through some of the supporting factors for dozenal as well as the history of decimalization. Worth a read.

### NEW DOZENAL ARTICLE

### TGM TOOLS PAGE

One of the most common inquiries your author receives is about what happened to the online versions of the tool-making tutorials—scales, rulers, and such—for the TGM system. To answer this need, we've produced a permanent page to hold all these things together:

[http://www.dozenal.org/drupal/content/tgm\\_tool\\_files.html](http://www.dozenal.org/drupal/content/tgm_tool_files.html)

Here you'll find easy, one-sheet guides and cutouts for producing TGM measurement tools. Of course, our past issues of the *Newscast* are also online, with photographic demonstrations of the process.

### THREE-PART THE DOZENAL SYSTEM PUBLISHED

Earlier this year, an author that your humble editor was unable to identify published a three-part series on our favorite number base:

<https://www.futurescienceleaders.com/yvr1a/2019/01/14/the-dozenal-system-part-one-the-base-of-a-number-system/>

<https://www.futurescienceleaders.com/yvr1a/2019/01/22/the-dozenal-system-part-two-why-12/>

<https://www.futurescienceleaders.com/yvr1a/2019/02/04/the-dozenal-system-part-3-how-do-you-count/>

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Part 3 is the most pertinent, and though it proposes a somewhat idiosyncratic number-naming scheme, it's still a delightful piece of authorship that we'd do well to read.

a musical scale has 10 notes. Worth looking at, especially for those interested in music.

## DOZENAL TONE SYSTEM AND DICHOTOMY

Well aged at this point, your editor has discovered a piece by Angelo Clematide on the above topic:

<https://www.vsl.co.at/community/posts/t8685-Dozenal-Tone-System-and-Dichotomy#post64503>

Provides a few well-reasoned and interesting notions on why

## ARTY DOZENAL CALCULATOR

Last year, Arvin Tang posted designs and instruction for a real, physical dozenal calculator!

<https://www.hackster.io/atang08/arty-dozenal-calculator-7f2e4e>

It works only with integer arithmetic, and has undefined behavior for illegal operations, but as a project or curiosity it is still very interesting. Take a look!

## SOCIETY BUSINESS

### VOLUNTEERS NEEDED

As mentioned earlier, the DSA is an all-volunteer organization, and we pay no salaries. As a result, everything that we do comes out of the spare time of our members, time that they have to take away from their families, jobs, or other obligations.

We all love dozenals and enjoy assisting the Society in educating people about them; however, as the Society expands and does more, we find ourselves in need of more help.

Fortunately, the Society has a large membership with a very broad range of professions and experience. If you think you can spare any time or effort for the cause of educating the world about dozenals, please

let us know:

[contact@dozenal.org](mailto:contact@dozenal.org)

You can help as much or as little as you'd like. Thank you.

the most basic to the most advanced, from a dozenal perspective, so no question or topic is too easy or too complex. Don't be shy!

### OUR NEXT BULLETIN

At our annual meeting in Atlanta last month, we had a splendid preview of the next issue of the *Duodecimal Bulletin*. But there's still space that can be filled! Have an article? A letter containing a question (common or uncommon) you'd like answered? Send them in!

[editor@dozenal.org](mailto:editor@dozenal.org)

Remember that our *Bulletin* is designed to cover all aspects of mathematics, from

### ANNUAL MEETING

The Board of the Dozenal Society of America has decided to relocate its meeting this year from Atlanta, GA to Boston, MA. This will be our first meeting in the northeast for many years. We have a large number of members in the northeast and hope some of you can join us.

The meeting will be 2 November at CIC Boston, 50 Milk Street, 16th Floor, in the heart of the financial district.

## POETICAL DIVERSION

### GREAT TWELVE

One is indeed a simple number, holding fast  
to Unity, unlike all others high or low;  
Two is the first of even primes, and also last,  
the square of some strange number we can't fully know.  
Three is the first odd prime, by ancients e'er extoll'd;  
the first to bound an area, it e'er holds true.  
Four's a composite, first that can a volume hold;  
the sum, the product, and the square of mighty two.  
Then five, the third of primes, by Fibonacci known,  
which yields the golden number known and loved by lore;  
But six, the product of two primes, shall stand alone,  
a perfect number, source of primes, of riches store.

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What number joins these many glories into one?  
Great Twelve, outshining other bases like the sun.

## DONATIONS

Members, please remember that while dues are no longer required for membership, we still rely on the generosity of members to keep the DSA going. Donations of any amount, large or small, are welcome and needed.

A donation of \$16; (\$18.) will procure Subscription membership, and entitles the payer to receive both a digital and a paper copy of the *Bulletin* if requested. Other members will receive only a digital copy. To invoke this privilege, please notify the Editor of the Bulletin, John Volan, at

[editor@dozenal.org](mailto:editor@dozenal.org)

As members know, we are a volunteer organization which pays no salaries. As such, every penny you donate goes toward furthering the DSA's goals.

It may be worth considering a monthly donation; say, \$3, or \$6, or whatever seems reasonable to you. This can be set up quite

easily with Paypal, which is available at our web site.

Of course, if you prefer to donate by check, you may send them to our worthy Treasurer, Jay Schiffman, payable to the Dozenal Society of America, at:

Jay Schiffman  
604-36 South Washington Square, #815  
Philadelphia, PA 19106-4115

Remember, too, that the DSA is a 501(c)(3) tax-exempt organization; as such, your contributions may be tax deductible under applicable law.

Thanks again for your assistance; it's your donations that keep the DSA going. We can't keep doing it without you.

## FOR SALE

The DSA is pleased to offer the following for sale. These are all either at cost, or the proceeds go to the Society. The exception is *Basic Dozenal Arithmetic*, which is a private production.

Item	Price (\$)
<a href="#">Dozenal Wall Calendar, 1204</a>	9.05
<a href="#">Dozenal Planning Calendar, 1204</a>	8.32
<a href="#">TGM: A Coherent Dozenal Metrology</a>	8.00
<a href="#">Manual of the Dozenal System</a>	3.46
<a href="#">A Dozenal Primer</a>	4.50
<a href="#">Basic Dozenal Arithmetic</a>	15.00

Prices are, unfortunately but by necessity, in decimal. If for some reason the links above do not work, simply go to: <http://www.lulu.com/shop/shop.ep>

and enter the appropriate terms. E.g., searching for "TGM dozenal" will turn up the TGM book.

We hope to offer other titles, and even some other items (such as dozenal clocks and the like), in the future.

## EACH ONE, TEACH ONE



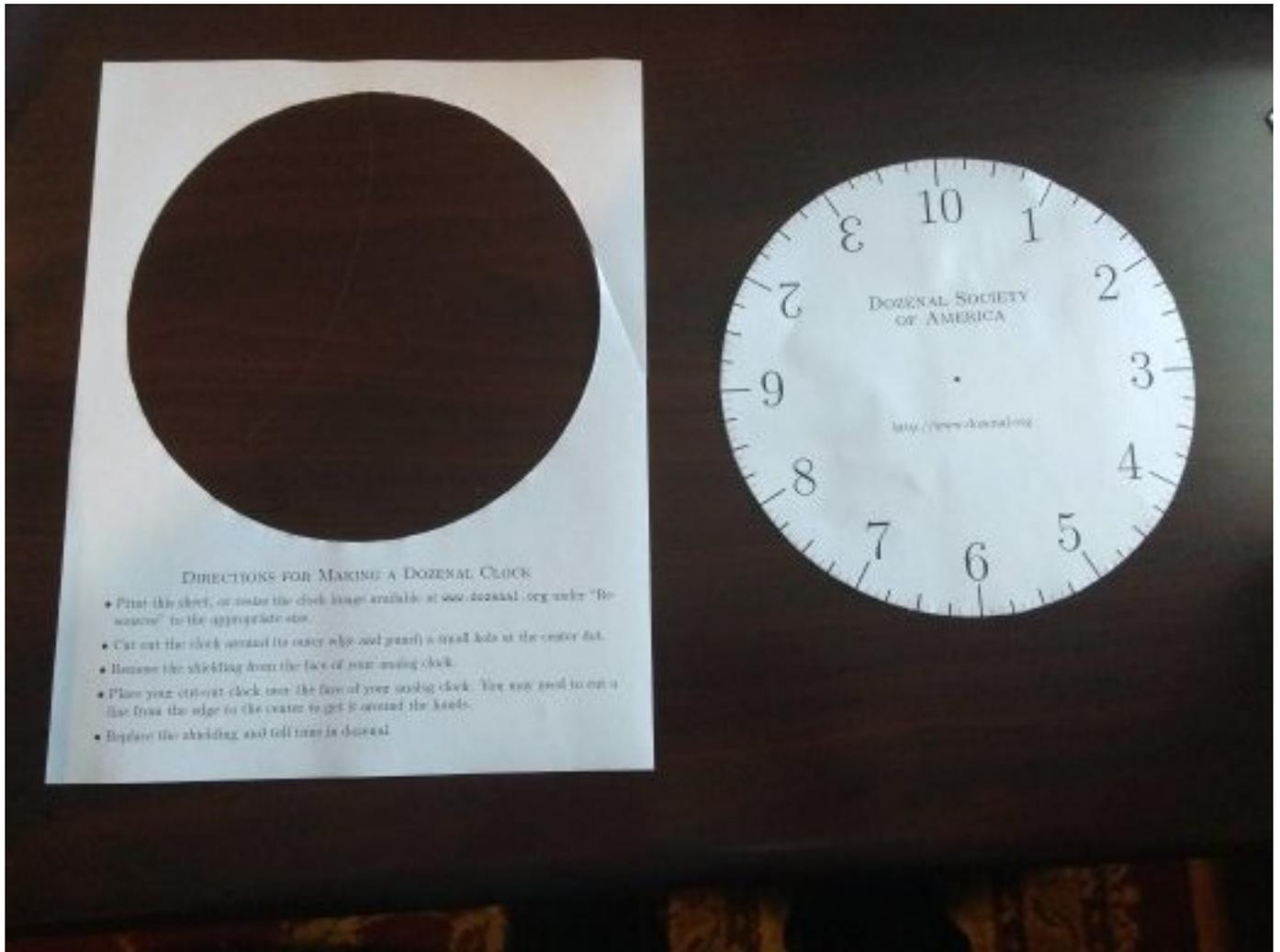
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