GRITTY GREETINGS

Waco Gem and Mineral Club

Volume 62, Issue 9, September, 2021 P.O. Box 8811, Waco, TX 76714-8811

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We were happy to welcome 4 visitors at the August meeting:

Brent and Rebecca Boyko and their son **Titus**! Titus is the rockhound!

Conrad B. And the editor apologizes for losing Conrad's last name, but it was almost more than I can handle anyway!

Our WGMC 2022 show date has changed to April 30 – May 1. Set up will be on Friday the 29th.

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Minutes for August 7, 2021 Meeting

The club officers were out of town, so Harry Senn opened the meeting at 10:00 am.

After a brief welcome of members and guests, Bob Boyd gave a presentation on the Denver Gem and Mineral Show.

Next, Harry demonstrated a method on how to determine the specific gravity of a mineral. He tested several of Bob's minerals. One was quartz. Another was a light blue topaz from near Mason, Texas.

The meeting adjourned just before 11 am.

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Since the first Saturday of September falls on Labor Day Weekend, we will meet on the 11th. Scott and Roy will be in Denver that weekend. Either Jackie or Harry will conduct the meeting. We plan to show a TBD gem & mineral related movie for the program.

Specific Gravity Test Courtesy Harry Senn

The test we demonstrated in our last meeting used a 500 gram scale, a clear plastic drinking cup (so I could see how submerged the mineral was), a formed wire (that would hold the mineral), and a bracket to hold the wire. The label on the water said “Distilled Water,” which, by way of assumption, did not contain any additives or dissolved minerals that would change the density of the water. Now, here’s how I understand “specific gravity.”

The water, as well as the mineral, has mass. Mass multiplied by gravity is weight. And weight is a force. The water has mass and thus it has weight, and this force opposes anything that attempts to enter the water. The force applied to the objects in the water is called “buoyancy.” So, anything placed into the water would apply a downward force. This downward force is opposed by buoyancy. If we were to weigh the object BEFORE it entered the water it would have an “air weight” (my terminology). However, if we were to weigh the object when it was IN the water it would be less than it did in the air. The “water weight” (again, my terminology) is the air weight being pushed up by the buoyancy. Specific gravity (SG) is the ratio of the air weight (A) divided by the water weight (W).

Our specific gravity test measured the mineral before it was in the water to get our A weight. Then we submerged the mineral and weighed it while it was in the water to get our W weight. Then we divided: A/B to get the specific gravity. Measure the air weight. We turned on the scale and waited until the scale “zeroed” out (Figure 1). We placed the mineral on the scale, waited until the scale reading was steady, and recorded the weight of the mineral (Figure 2). This weight is A, our air weight. In our example, A = 61.4 grams.

Figure 1. "Zero" the scale

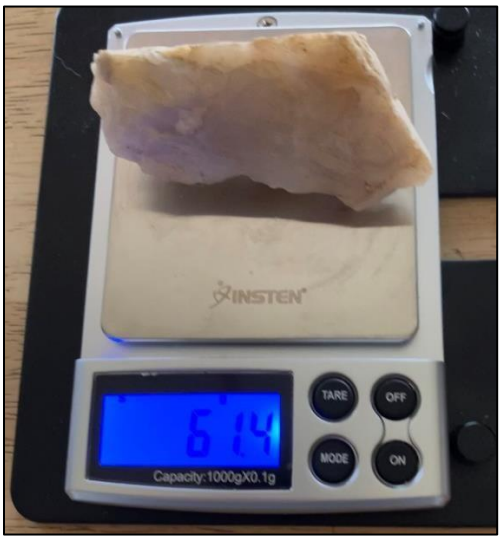

Figure 2. Weigh the mineral. Record this weight as A

Measure the Water Weight

Step 1. (The scale was “on” at this point.) We placed the cup with water onto the scale. Then we hung the empty holder (wire) into the water. Note: the wire has mass, and we want this additional mass added to the water because, in a moment, when the mineral is lowered into the water, the same quantity of mass will be lowered into the water.

Step 2. “Zero” the scale. In our case we push “Tare” which deletes the weight of the water, cup, and holder. See Figure 3.

Step 3. We then put the mineral onto the holder and lowered both into the water. Another note: I used a bracket when hanging the holder. This ensures that the exact same amount of mass of the wire that was lowered into the water in Steps 1 and 2 will be lowered in Step 3. We recorded the weight of the submerged mineral. This is W, our water weight, and in our example W=23.6 grams.

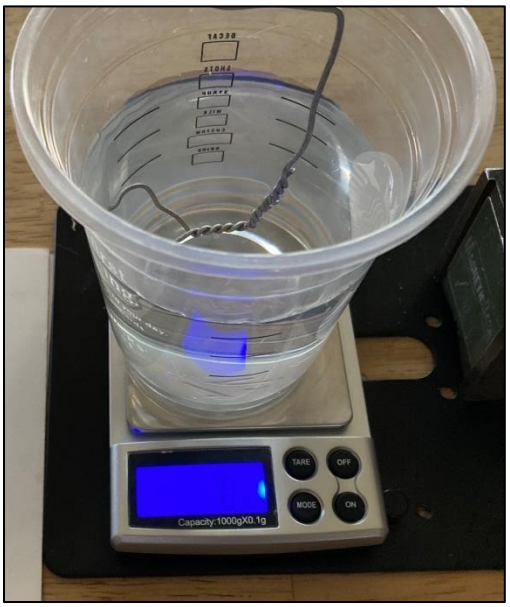

Figure 3. Zero the Scale by pressing TARE. (Yes, the scale DOES read 0.00 in this image)

Figure 4. Record the reading on the scale. This is W, the weight of the mineral submerged in water.

Calculate Specific Gravity (SG): SG = A/W = 61.4 grams/23.6 grams = 2.602

Notes

The scale is a 0-500 gram food scale because most of what I will measure will be about in the middle of the range of this scale. Also, I could not find my analog food scale (plastic scale, with needle, used to measure ingredients when I cook.)

"Grams" was used on the scale, but this digital scale also has ounces, carets, and other scales. The "units" does not matter because specific gravity is a ratio, an arithmetic fraction of one quantity divided by another. Thus, with the same units in the numerator as well as denominator, the units reduce to "1", and "1" times the fraction numbers ain't gonna make a hill of beans of difference. Example:

$$SG = \frac{A}{W} = \frac{61.4\ grams}{23.6\ grams} = \frac{61.4}{23.6} \cdot \frac{grams}{grams} = \frac{61.4}{23.6} \cdot 1 = 2.602$$

Air- Love

August 18 at 4:09 PM ·

A mystery artist has been creating sculptures using natural stones high among the hills of England's Lake District. This stone circle frames the view of Borrowdale.

Sapphire, the September birthstone, has been popular since the Middle Ages and, according to folklore, will protect your loved ones from envy and harm. Medieval clergy wore sapphires to symbolize heaven, while commoners thought the gem attracted heavenly blessings. Blue sapphires range from very light to very dark greenish or violetish blue, as well as various shades of pure blue. The most prized colors are a medium to medium dark blue or slightly violetish blue. Sapphire is a variety of the gem species corundum and occurs in all colors of the rainbow. Pink, purple, green, orange, or yellow corundum are known by their color (pink sapphire, green sapphire). Ruby is the red variety of corundum.

Courtesy American Gem Society - See more at: http://www.americangemsociety.org/

Notes

The editor requests news items from any member to be included in the Gritty Greetings.

Deadline for submissions is the 20th day of the month.

Name Tags:

It is great that we feed the pig at our meetings because we don't have or have lost or forgotten our nametags to drop a quartering the pig. The money from the pig goes toward our Scholarship program, and we really do appreciate every 2 bits, 4 bits, 6 bits or more. However, if you need a nametag you can purchase them at the businesses below!

Waco Gem & Mineral Club nametags are available at **Print Mart**, 202 Deb (behind AutoNation Chevrolet). Cost with a pin back is $8.00 (with tax $8.66), and with a magnet back is $11.00 ($11.91). or at Award Specialties at 431 Lake Air Dr.

Club Dues:

Annual Waco Gem and Mineral Club dues are $12.00 for an individual membership or $20.00 for a family membership. Please check with Jackie if you aren't sure whether you've paid your Dues!

Shop Fees:

Lapidary Workshop fee is $2.00 per hour. Slab Saw fee is an additional $2.00 per hour. Class fees are always dependent upon class and instructor.

The Waco Gem and Mineral Club is a member of the South-Central Federation of Mineral Societies; and the American Federation of Mineralogical Societies. Meetings are held on the first Saturday of each month (except July and September) at 10:00 a.m. at the Waco Gem and Mineral Club Clubhouse, 187 South McLennan Drive in Elm Mott, Texas. The lapidary workshop is in the clubhouse.

Our website is www.wacogemandmineral.org

Facebook: https://www.facebook.com/WacoGemAndMineralClub

Club Purpose

- to bring about a close association of those persons interested in earth science and lapidary arts
- to increase and disseminate knowledge about rocks, minerals, fossils, Indian artifacts and other geological materials
- to encourage lapidary art and the collection and exhibition of rocks, minerals, fossils and artifacts
- to conduct field trips, meetings, lectures, displays and an annual show for the edification of the public
- to cooperate with educational and scientific institutions and other groups in increasing knowledge and popular interest.