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## School Hand Grinding Set for Grinding and Polishing Stones

This grinding and polishing set is specifically intended for groups such as schools, clubs, homes, and collectors who plan to perform hand grinding.

The set consists of four grinding powders (No. 1–4, coarse to fine) and one polishing powder (No. 5). The remaining required utensils must be sourced by you, specifically:

- **A glass plate** to serve as a grinding base. A minimum size of 100x100x4 mm is possible. If you want to process large gemstone slabs of perhaps 120x100 mm, you will naturally need an appropriately sized glass plate, from about 200x200x6 to 10 mm. (Available from carpenters, glaziers, etc.)
- **A felt or leather plate** to serve as a polishing base. Look for an old felt hat or use the soft inner side of a pocket leather. If possible, choose approximately the same size as the grinding base.
- **A gemstone slab.** If you do not have one yet, you can order it from us.

### Processing Method:

Start with **grinding powder No. 1** (= grit 80 - coarse). Sprinkle a small amount of it onto the grinding base (glass or iron plate or similar) and add a few drops of water so that the powder and the grinding base become damp. (It must remain damp so that the stone does not get hot during grinding). Take the stone disc between your fingertips and rub it in circular motions across as large an area of the grinding base as possible. Utilize the center as well! The purpose of this is to wear down the grinding base as evenly as possible, instead of creating deep hollow tracks which are naturally unsuitable for flat grinding.

If necessary, occasionally sprinkle some more of the same coarse grinding powder No. 1 onto the grinding base. Also, add water as needed. This grinding process should be carried out until you are satisfied with the surface of the gemstone disc; i.e., until the surface is flat and looks evenly ground. You are then ready for further processing.

**Everything must now be washed with extreme care.** The grinding plate, gemstone slab, as well as your hands (and fingernails!).

Only then can you proceed in the same manner with the next finer **grinding powder No. 2** (= grit 220).

Once you have achieved a matte surface here as well after some time (meaning you see no further improvements with this powder), you can proceed to the next finer **grinding powder No. 3** (= grit 400, medium) after everything has been thoroughly cleaned again. It is best to perform this grinding step with powder No. 3 on the unused and completely flat backside of your grinding base. (It would be easier and better if you obtain a separate grinding plate for each type of powder).

You then have **grinding powder No. 4** (= grit 800) at your disposal, which you use on the same side of your grinding base as previously with powder No. 3.

**Polishing** is done with **powder No. 5** (= our well-known X-3 polishing powder) on a felt or leather base (kept very flat, perhaps stretched onto a board with a few small nails). Work damp here as well. Sprinkle fresh polishing powder occasionally as needed, just like during the grinding process. Once you are satisfied with the shine (i.e., the polishing result), you can stop.

If you ever have uneven stones that you wish to process by hand—which should be ground with a contoured/curved surface because they do not have a flat side—you can use or set up the following tools:

- **a)** A few egg cups (one for each powder)
- **b)** A wooden board with indentations like an egg cup...

Now, mix a two-component adhesive (which dries in about 10 minutes) and combine it with a quantity of the coarsest grinding powder. The adhesive should contain as much grinding powder as possible.

Try a ratio of approximately 100 parts adhesive to 90 parts powder. Now, pour this adhesive-abrasive mixture into your grinding depression (egg cup or indentation in the wooden board) and smear the mixture along all sides of the depression. To prevent the entire mixture from settling to the bottom while drying, you must continuously move the grinding depression throughout the entire drying time. This ensures that the inside remains evenly covered on all sides with the mixture. This is why you should purchase a fast-drying adhesive (approx. 10 minutes).

Follow exactly the same procedure for the other grinding powders and the polishing powder.

Now, find a small wooden stick (e.g., a pencil) or take a long iron nail and glue the stone onto it, again using the two-component adhesive.

Once the adhesive in the depression has fully cured (refer to the instructions for use on or inside the adhesive packaging), you can move the gemstone around inside the grinding depression using the stick. Additionally, you can occasionally add a little fresh powder of the same grit. Also, add water as needed, since grinding and polishing should always be done wet. The remaining processing steps are almost identical to those described for the flat stone.

The more pressure you apply during processing, the faster the grinding and polishing process will proceed. Of course, this type of processing takes significantly longer because a much larger amount of stone material must be worn away.

To finally remove the stone from the stick or pencil, use nail polish remover or acetone.

This final result is also perfect for creating a nice pendant by gluing on commercially available caps (please inquire with us). Or you can glue it onto a ring! (Please inquire with us as well).

**Notes:**

If holding the stone disc with your fingertips becomes too difficult, you can glue a small wooden block of almost equal size onto the stone surface and remove it later with acetone. However, when cleaning before changing the powder, watch out for hidden grit particles trapped in the wooden handle!

**A brief note on this gemstone hobby:** Apart from hand grinding, there are various other ways to practice this highly interesting hobby, both theoretically and practically. Anyone can do it! Whether a child, woman, man, retiree, or even someone recovering from illness. It is also highly recommended for schools, sanatoriums, therapeutic institutions, etc. Anyone can practice one or more branches of this "noble" hobby. You wouldn't be the first! You can choose, for example, between:

- **a)** Learning and reading theoretically from books
- **b)** Collecting gemstones (in rough or partially ground form)
- **c)** Collecting minerals (in massive or crystallized form)
- **d)** Processing gemstones (anyone can learn this using the highly affordable small hobby processing equipment developed and built by us)
- **e)** Making your own jewelry by simply gluing pieces onto findings (= jewelry components)

This hobby establishes a connection to nature (regardless of whether you search for the gemstones yourself or buy them in a mineral shop). It brings you into contact with geography, as well as a bit of chemistry and history. It showcases shapes and colors. If desired, the hobby connects you with many like-minded people (e.g., in collecting and working clubs). Furthermore, it can be practiced in both summer and winter!

For the whole family!

We wish you much joy with this wonderful hobby.