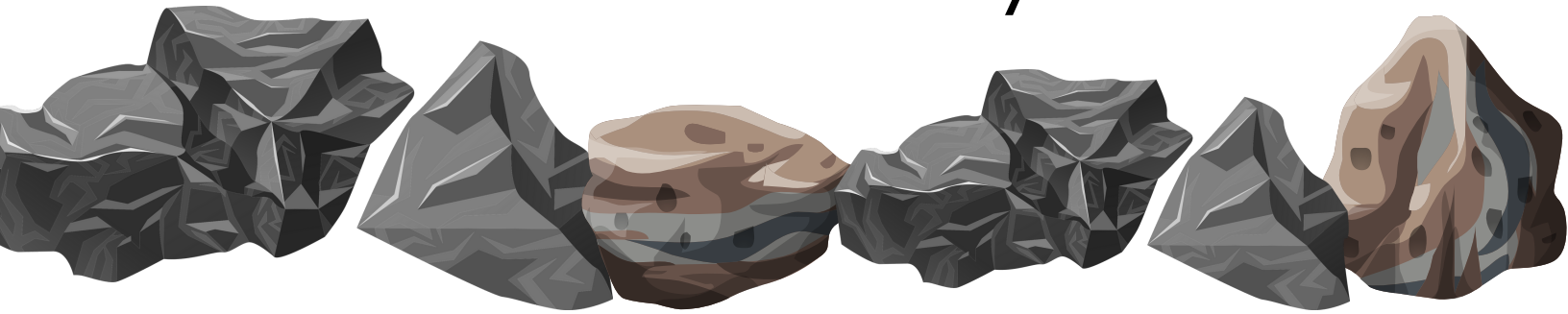
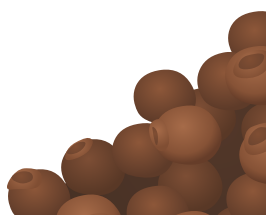
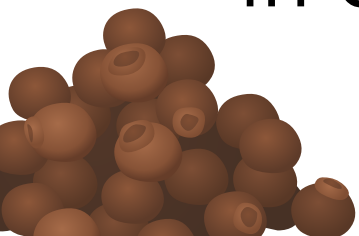


WHAT IS CLAY?

Clay is formed when igneous rock break down and eventually turn into clay



Clay has the ability to be plastic and malleable, the ability to hold shape, and undergoes a chemical change with the application of heat which results in a rock-like transformation



5 BASIC TYPES OF CLAY USED IN CERAMICS

Clays are mixed with non-clay materials to make up the clay we use today.



- **Ball Clay** - highly plastic with very fine particles. Has a high shrinkage rate. Light buff to darker brown in color.



- **Stoneware Clay** - a high temp clay that has the right amount of plasticity so it can be used on its own. Wide color variation



- **Kaolin** - The purest form of clay, fires at a high temp. Typically white to light buff in color



- **Fire Clay** - Similar to stonewares but have a large particle size. They are very course & grainy



- **Earthenware Clays** - Similar to stoneware with a lower firing temp. Is often darker in color due to a high iron content

CLAYS ARE COMBINED WITH NON-CLAY MATERIALS TO MAKE UP THE CLAY BODIES WE USE. SOME EXAMPLES OF NON-CLAY MATERIALS ARE:

- **Fluxes** - Fluxes lower the melting point of the clay and can create a greater density and hardness making the clay body stronger.
- **Fillers** - Fillers add strength, reduce shrinkage, promote even drying, allowing the clay body to dry without warping or cracking. Fillers added to clay bodies are usually flint or grog which is clay that has already been fired, then ground up.
- **Refractories** - control the maturing temperature
- **Plasticizers** - used for greater plasticity

CLAYS VS. CLAY BODIES

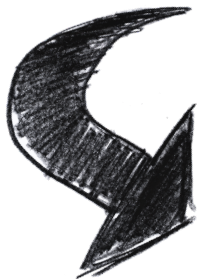
Clays are ingredients used to make a clay body.
You follow a recipe like when you make bread!



Clays are like different flours used for different types of bread.

- White flour = Kaolin
- Wheat flour = Ball, Stoneware & Earthenware clay

Mix the flour with your non-flour ingredients (aka clay with the non-clay materials like fluxes & fillers)



Once all the ingredients (clay & non-clay materials) are mixed, you have your final product – your clay body!



EXAMPLE OF A CLAY RECIPE



PORCELAIN

- Kaolin
- (grolleg) 50%
- Flux (Kona F4
feldspar) 25%
- Filler (flint)
25%