

# Introduction to Ceramics



**Ceramics**: Clay objects that permanently retain their shape after they have been heated to specific temperatures

# What is Clay?



# CLAY:

a natural product developed by the earth

-Made from decomposed granite and feldspathic rock that has been broken down by rain, snow, frost, tree roots, and wind over millions of years.

Clay is made of kaolinite particles- flat and cling together. Particles slide and support one another in both wet and dry stages, giving clay its most valuable quality: plasticity

# *How is clay different than mud and sand? Clay has **PLASTICITY!***

**Plasticity:** The quality of clay that allows it to be manipulated and still maintain its shape without tearing or breaking.

The ability to hold together while being shaped gives clay its plastic quality.



# Origins of Ceramics

Ceramics developed after the  
discovery of fire

People learned how to control fire

Discovered by accident?

HOW??



# Origins of Ceramics

1. **STORY TELLING PROPS:** formed clay animals and human images to embellish a story or to use in a religious ritual. They were then thrown into the fire (some exploded, some did not)
  - Clay is heated quickly, the water trapped inside expands and turns to steam. This rapid expansion happens with such a powerful force that they clay explodes and shatters (Magic? Fireworks?)
  - Clay figurines may have dried before they were thrown into the fire. They did NOT explode, but were transformed by the heat into stone

# Story-telling props



# Origins of Ceramics

- **2. WOVEN BASKET:** Clay lined woven baskets, a basket caught on fire, and the result was hardened clay





# Earth, Water, and Fire

- Fire or heat make the clay form permanent and returns the clay to a rocklike state



Functional/ Utilitarian: Refers to pottery that has a use/function/purpose (example: cup, plate, bowl)



**Brainstorm:**

**What were ceramic forms USED for in prehistoric times?**

# Functional Purposes:

- When humans began cultivating crops, they needed **containers** for:
  - cooking
  - storing water
  - storing food (seeds, nuts, plant matter)
- **Funeral objects- vessels** contained food meant to accompany the dead on their journey to the spirit world, served as **coffins**, **sculptures** of figures and animals were placed with the dead for protection

# How were these first forms created?

## Handbuilding Techniques:

1. Pinching
2. Coiling
3. Slabs



Using our hands and simple tools



# Tools



Ancient tools made with  
organic materials

- **Before** creation, a potter must **WEDGE** the clay
- **Wedging**: A way of improving the workability of clay by reinforcing the mixture to make it homogeneous and even in texture while eliminating air bubbles



# Stages of Clay

1. Greenware: Unfired pottery or sculpture that can be recycled

1. plastic
2. leather-hard
3. bone dry

2. Bisque

3. Glaze



# STAGE OF GREENWARE

**1) Plastic:** The first stage of greenware when the clay is moist, moldable, and retains the form it was sculpted to

**2) Leather hard:** The stage between plastic and bone dry when clay has dried, but may still be carved or joined to other pieces.

**3) Bone Dry:** Stage of drying when moisture in the clay body has evaporated so the clay surface no longer feels cold





- \*As clay dries (water evaporate) it contracts, or **SHRINKS**.
- Shrinking occurs from air-drying and firing pottery.



**Firing:** heating pottery or clay sculpture to a temperature high enough to render it hard and durable

1. Bisque firing
2. Glaze firing

**Kiln:** an oven built to fire clay at high temperatures

**Bisque firing:** The first firing at a relatively low temperature; clay maintains its porous state. It is NOT glazed.

**Bisqueware:** Clay that has been bisque fired



**Glaze:** A coating of glass that is fused to the surface of the ceramic piece

**Glaze firing:** a firing cycle to the temperature at which the glaze materials will melt to form a glasslike surface coating

