

MUD BRICKS

ELEMENTARY SCHOOL LEVEL 1

Mud brick houses have been a part of human civilization for thousands of years. Dating back to the third century B.C., there have been 15 reported archeological sites where mud brick houses have been discovered. It is a tried and true way to build and insulate a structure. Made with simple, cheap materials that are readily available all over the world, mud bricks are a classic example of resourcing and reusing what we find in our environment.

MATERIALS NEEDED:

- Dirt
- Water
- Spoon
- Bowl
- Ice cube tray
- Sunlight

DIRECTIONS:

1. Put two cups of dirt in a bowl and mix in water. Add enough that the dirt is wet all the way through, but there's no puddle.
2. Place your mud into the ice cube tray and pack it in tight.
3. Place the tray outside in direct sunlight to harden the mud. Leave outside for 48 hours to harden. It is probably a good idea to set several trays out to harden so there are a large amount of bricks to build with.
4. Have your kid sketch out the designs they plan to build with their mud bricks.
5. Once the mud has hardened, remove the bricks from the ice cube tray and start building!



OBJECTIVE:

Kids will be able to design a physical model of a simple shelter (connection may be used to needs of animals for survival).

ESSENTIAL QUESTION:

- How might we build a simple shelter from natural materials that can be used from the harsh natural elements for survival?



FUN FACTS

- A. **Playing in mud is scientifically proven to boost your mood due to the microscopic bacteria called *Mycobacterium vaccae*.**
- B. **Pigs, warthogs, elephants and rhinos bathe in mud to lower their body temperatures.**
- C. **Time to get crafty! Pottery made of clay—also known as mud—dates back to 27,000 B.C.**

ENGAGE / EXPLORE:

1. Have the child design their shelter.
2. Provide or ask them to gather materials.
 - a. Ask them to consider how to build a shelter.
 - b. Allow them to make a mess with the mud and explore ways to design a shelter.
 - c. Nurture the child and encourage both successes and failures.

EXPLAIN:

1. Read books on engineering with your child:
 - a. *Rosie Revere, Engineer*, Andrea Beaty
 - b. *How a House is Built*, Gail Gibbons
 - c. *Look at that Building! A First Book of Structures*, Scot Ritchie
2. Discuss the literature and engineering.
3. Tell them we will revisit and design our shelter again.
 - a. Show them how to make bricks with their mud, a way to form building materials.
4. Have child talk about how they will build their shelter.



ELABORATE:

1. Allow child to revisit their project and build using any method of their choice.
 - a. Encourage use of bricks.
 - b. Encourage child to brainstorm on how they can form differently-shaped bricks.

