



## Engineering Institutes:

### Ice Excavation

#### Ohio Standards:

PS.1.1.1: Properties of objects and materials can change.

PS.3.2.1: The most common states of matter are Solid, liquid and gas

PS.3.2.3: One way to change matter from one state to another is heating or cooling.

#### PA Standards:

3.2.1. A1: Observe and describe the properties of liquids and solids.

3.2.1. A4: Observe and describe what happens when substances are heated and cooled. Distinguish between changes that are reversible (melting and freezing).



#### Materials :

- Clear cup
- Balloon (optional)
- Ice cube trays
- Fruit, plastic toy figures.
- Salt
- Tray
- Spoon, craft sticks, toothpicks

#### Procedures :

1. Gather all your materials which include fruit or small toys that can fit into ice cube trays.
2. Place the items in the ice cube tray and fill it up with water.
3. Once everything is frozen, you can place the ice cubes on a tray.
4. Ask student/child to use the excavation tools to dig their way through the ice, getting all the items out.

### **Extension (More Fun)**

- To extend this activity you can place the ice cubes in water sprinkle the ice cubes with salt, and try going fishing with the string and see if you can catch the artifacts.
- For more of a challenge place a few artifacts into a balloon fill it up with water and freeze it. Peel off the balloon and place the ice ball on a tray and use your excavation tools to get the artifacts out.