**WMDT Ice Melt Blocks**

An Ice Melt Blocks lesson plan typically involves students exploring the concept of heat transfer and thermal conductivity using two blocks that feel different to the touch, one cold and one warm, even though they are at the same temperature.

You can obtain similar blocks to the ones used in the WMDT studio online.

The core activity involves placing ice cubes on each block and observing which melts faster, demonstrating how different materials conduct heat differently.

To expand the activity choose other similar objects from around the house. Do some take longer to melt the ice? Are those objects different temperatures, weights etc.?

Here's a more detailed breakdown of a possible lesson plan:

1. Introduction:

* Begin by introducing the concept of heat and temperature, emphasizing that they are not the same thing.
* Explain that thermal conductivity refers to how well a material transfers heat.
* Present the Ice Melting Blocks, highlighting that they appear identical but feel different to the touch.

2. Exploration and Observation:

* Have students touch the blocks and record their observations, noting that one feels cold and the other feels warmer.
* Encourage predictions about how long it will take for ice to melt on each block.
* Place ice cubes on each block and observe which melts faster, recording the results.

3. Discussion and Explanation:

* Discuss the results, emphasizing that the "cold" block melted the ice faster because it is a better heat conductor.
* Explain that the "cold" block absorbs heat from the ice, causing it to melt, while the "warm" block is a poor conductor and transfers heat much slower.
* Introduce the concept of heat transfer and endothermic processes (melting ice requires heat).
* Discuss how materials that are good heat conductors can be used to keep things cold (like a cooler) or hot (like a pot on the stove).

4. Extensions:

* Measure the temperature of the blocks before and after the ice melts to see how the heat energy is transferred.
* Investigate the properties of different materials and their ability to conduct heat.
* Design and build a device to either maximize or minimize heat transfer using the principles learned.
* Explore the molecular level explanation of heat transfer and melting.

5. Key Concepts:

* **Heat:** The transfer of thermal energy.
* **Temperature:** A measure of the average kinetic energy of the particles in a substance.
* **Thermal Conductivity:** A measure of how well a material transfers heat.
* **Endothermic Process:** A process that absorbs heat from its surroundings (like melting ice).
* **Insulator:** A material that resists the flow of heat.