

Question: How does clothing worn in cold weather retain body heat?

Heat is where particles move fast. The faster they move the hotter it is.

Conduction:

Conduction is the movement of heat by direct contact with clothing fibres. They conduct slowly and so act as insulators. Wool can get wet but still keep heat in and the wool fibres overlap and so reduce heat loss by conduction. Metal conducts heat well so is not used for clothing except in fashion shows. Metal would be no use in the bush. (1)

Convection:

Convection is the key way the body loses heat. In convection the air moves and rises and this takes heat away from the body. In clothing the key warming method involves stopping this air movement. This is done by having air pockets trapped in the clothing and the movement of the air is stopped by the fibres. Wool has plenty of good sized air pockets. (2)

Radiation:

Heat can also be lost as radiation. This is where heat is lost in the infra-red part of the spectrum. (3)