

## Why does a sheep need wool?

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### Data dodania:

19.06.2018

### Słowa kluczowe:

environmental adaptation, heat, izolator

### DZIEDZINA:

Biology, Physics, Thermodynamics

### Cel doświadczenia:

The purpose of the experiment is to show what a thermal insulator is. By means of a woolly jumper as well as three glasses filled with water the participants will check if a jumper gives heat or just keeps it.

### Spis materiałów:

1. a woolly jumper
2. three glasses
3. water (warm and cold)

The experiment can be extended with other materials, such as cotton (plant origin), polyester (a synthetic material), silk (animal origin). Instead of a jumper, a pair of woolly socks can be used.

### Etapy realizacji:

1. Fill one glass with cold water and two with warm water.
2. Wrap them at the top with cling film.
3. Lay the jumper flat on the table.
4. Put the glass with cold water in a sleeve; put one glass with warm water to the other sleeve and leave the other glass with warm water in ambient air.
5. After an hour, check temperature in the glasses.

### Pytania do doświadczenia:

1. Is wool a good thermal insulator?
2. Are other materials better insulators?

### Opis zjawiska:

### Ciekawostki:

1. Sheep are excellently adapted to low temperatures. Their health is rather affected by moisture than by cold. Lambs are born in early February when it is freezing cold; the time when lambs are born is called lambing time.
2. In deserts there are large variations in temperature between hot days and cold nights. Due to thick hair, camels can keep constant body temperature. This is a form of adaptation of a species to the environment.