

Hot or Cold



Location

Ground floor, Move it exhibition

In a nutshell

How does heat transfer through different materials?

Investigate this hot and cool plate and a range of thermochromic tiles to find out.

What to do

Place the different materials on one of the plates and cover with a thermochromic tile. Looking at the colour change will tell you if the material you are testing lets heat pass through it easily. Can you predict which materials are good conductors?

Time Required

KS3 & KS4 2-3 minutes per student.

What's happening?

We cannot see heat energy. Materials that convert heat energy into colour allow us to see the temperature of objects.

Materials, such as metals, that let heat through are conductors. Materials, such as wood, that stop heat getting through are insulators.

Curriculum links

Curriculum links	
KS3	<p>Science - The Periodic Table</p> <ul style="list-style-type: none"> - the properties of metals and non-metals <p>Science - Energy changes and transfers</p> <ul style="list-style-type: none"> - heating and thermal equilibrium: temperature difference between two objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation; such transfers tending to reduce the temperature difference: use of insulators <p>Science - Changes in systems</p> <ul style="list-style-type: none"> - energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change - comparing the starting with the final conditions of a system and describing increases and decreases in the amounts of energy associated with movements, temperatures, changes in positions in a field, in elastic distortions and in chemical compositions <p>English - Reading</p> <ul style="list-style-type: none"> - learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries
KS4	<p>Science - The modern Periodic Table</p> <ul style="list-style-type: none"> - describe metals and non-metals and explain the differences between them on the basis of their characteristic physical and chemical properties <p>Science - Using materials (Single)</p> <ul style="list-style-type: none"> - explain how the properties of materials are related to their uses and select appropriate materials given details of the usage required <p>English - Spoken</p> <ul style="list-style-type: none"> - listening to and building on the contributions of others, asking questions to clarify and inform, and challenging courteously when necessary

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> • Catching the sun (KS3 & KS4) • Colourful chemistry (KS3) 	<ul style="list-style-type: none"> • Light Fantastic (KS2 & KS3) 		<ul style="list-style-type: none"> • Thermal challenge • Convection

