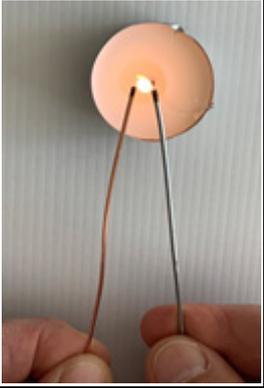


4.2 Conductivity of heat

Basic information and collecting ideas 	<p>Metals are used for various technical functions. One function is the transport of heat. Different metals have different thermal conductivities. Think about:</p> <ul style="list-style-type: none"> ▪ In which metal technical devices is heat conduction important? ▪ Why do houses with a tin roof get hotter than houses with a tile roof? ▪ Why do frying pans often have wooden or plastic handles? 					
Setting up and conducting experiments 	<p>Provide equally long wires made of different metals.</p> <ol style="list-style-type: none"> 1. The students test the thermal conductivity by comparing two metal wires whose ends are held in the same place in a flame. The metal that wins the most contests has the best thermal conductivity. 2. Record the results in the table on page 2 and present the results in class. 					
Observing and documenting 	<table border="1" style="width: 100%; height: 100%;"> <tbody> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </tbody> </table>					
Analysing and reflecting 	<ul style="list-style-type: none"> ▪ What conditions must be met for a proper comparison? > <i>Same length, same diameter of the wire, same place in the flame.</i> ▪ What is the difference between a good and a bad conductor of heat? > <i>A good conductor of heat has fast-moving particles that transport the heat quickly.</i> ▪ When metals generally conduct heat well, what materials can we use to protect our skin from burns? > <i>Plastic, wood, cloth, etc.</i> 					
Doing further research 	<ul style="list-style-type: none"> ▪ Look at the cross section of a thermos flask (page 2) and describe why hot or cold beverages stay at the same temperature for a long time? > <i>The mirror reflects the heat into the beverage, glass is a poor heat conductor, the vacuum does not transport heat.</i> 					

<p>Doing further research</p> 	<ul style="list-style-type: none"> Many people use a solar heater on their roof to produce warm water using the sun's rays. Why are copper tubes the best material for the construction of solar heaters? <i>> Copper is a good heat conductor and works very effectively to heat water.</i>
<p>Technical and vocational application</p> 	<p>Many applications from the kitchen to technical work.</p> <p>Occupations: Metalworking, Plumbing, Catering, Mechanics</p>

Which metal is the winner?

	Copper	Zinc	Aluminium	Iron
Copper	X			
Zinc		X		
Aluminium			X	
Iron				X