

# Exploring the Fire Pavilion

The Fire Pavilion contains exhibits about fire, heating materials, heat transfer and steelmaking. This document is one of five making up a teacher's guide to the Fire Pavilion. The exhibit list contains key questions which can be answered, investigated, or discussed. The education pack also contains a simplified plan with questions, 'Fire Pavilion Quiz', for teachers who wish to provide pupils with a directed, written task whilst visiting the pavilion. Material for reflective learning can also be collected by camera, sound recording and downloaded from Magna's website.

Type Key: h = Hands-on interactive, a = Audio-visual display, t = Touchscreen interactive

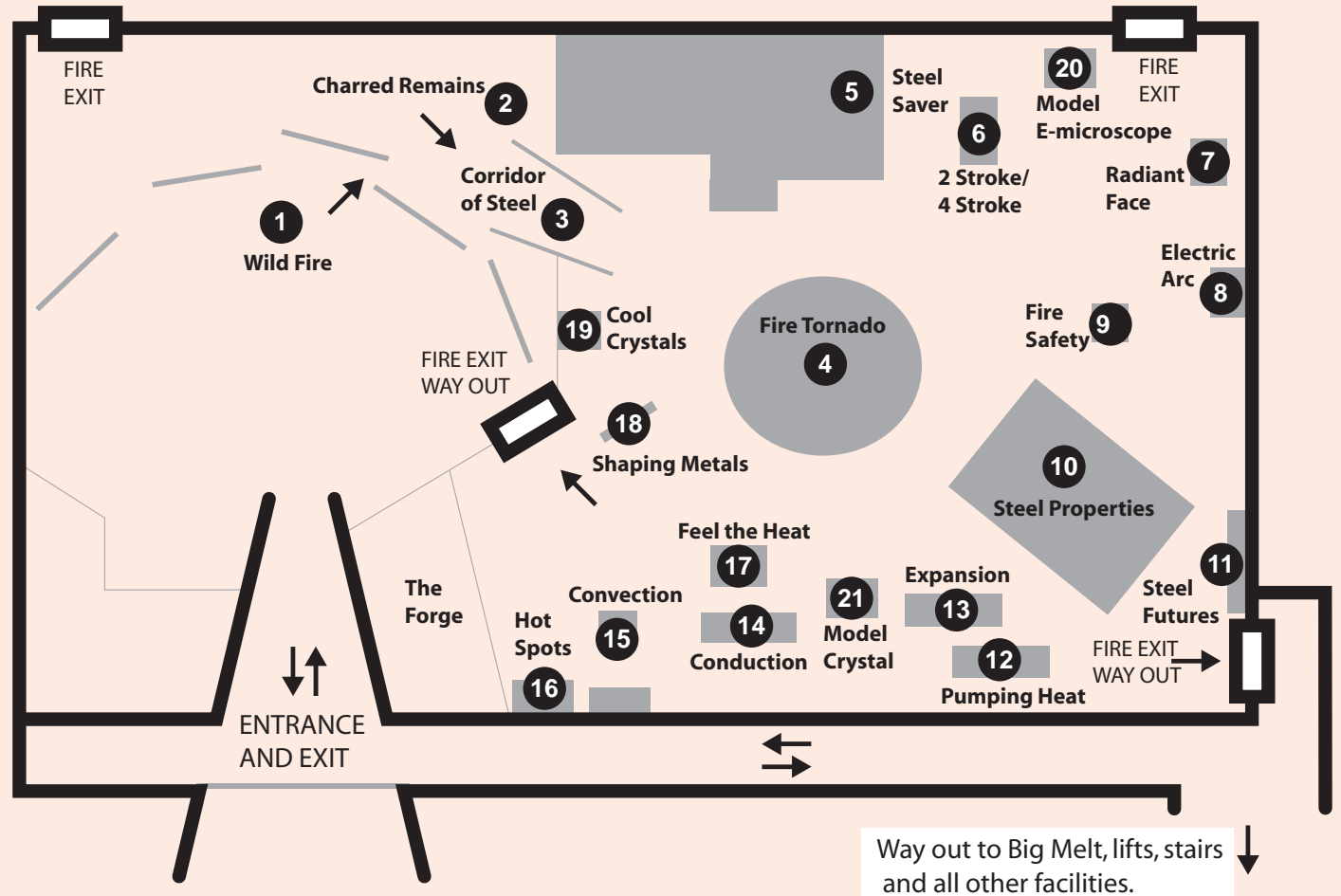
Exhibit	Type	Question
<b>1</b> Wild Fire	a	What happens when the lightning strikes? What happens when it rains?
<b>2</b> Charred Remains	h	What does wood look like before and after it is burned?
<b>3</b> Corridor of Steel	h	Which material has been used to make the corridor?
<b>4</b> Fire Tornado	h	How does it change from start to finish?
<b>5</b> Steel Saver	h	Why is a crane like this useful in a steelworks?
<b>6</b> 2 Stroke/4 Stroke	h	What can you feel when you put your hands over the inlet and exhaust?
<b>7</b> Radiant Face	h	Why do the coils glow red?
<b>8</b> Electric Arc	h	What happens when the electrode comes down?
<b>9</b> Fire Safety	t	What might cause a fire in your home?
<b>10</b> Steel Properties	h	Why is steel useful for building?

Exhibit	Type	Question
<b>11</b> Steel Futures	a	How is steel being used in new ways?
<b>12</b> Pumping Heat	h	What can you feel when you put a hand on each cylinder?
<b>13</b> Expansion	h	What happens to the wire as it heats up?
<b>14</b> Conduction	h	Which material feels the warmest? Which material feels the coldest?
<b>15</b> Convection	h	What can you see on the wall? Where have you seen patterns like this before?
<b>16</b> Hot Spots	h	Who is the hottest person in the group?
<b>17</b> Feel the Heat	h	Does the middle plate feel warm or cold?
<b>18</b> Shaping Metals	a	What processes help to shape metals?
<b>19</b> Cool Crystals	h	What happens after the crystal has melted?
<b>20</b> Model Electron Microscope	h	What object you are scanning?
<b>21</b> Model Crystal	h	What happens to the particles when it heats up and cools down?





# Fire Pavilion Plan



- 1 Wild Fire - a flaming entry experience.
- 2 Charred Remains - the aftermath of a fire.
- 3 Corridor of Steel - through the tunnel.
- 4 Fire Tornado - a twisting pillar of flame .
- 5 Steel Saver - recycle the scrap, with a crane.
- 6 2 Stroke / 4 Stroke - engines in action.
- 7 Radiant Face - glowing energy transfer.
- 8 Electric Arc - spark and melt the metal.
- 9 Fire Safety - spotting the danger.
- 10 Steel Properties - a super steel sculpture.
- 11 Steel Futures - look at the uses of steel.
- 12 Pumping Heat - keeping the fridge cool.
- 13 Expansion - heat the wire red hot.
- 14 Conduction - test the plates with your hands.
- 15 Convection - watch the heat rise and shimmer.
- 16 Hot Spots - make a hot hand print on the wall.
- 17 Feel the Heat - warm and cool your hands.
- 18 Shaping Metal - shaping and casting metals.
- 19 Cool Crystals - melt and freeze the crystals.
- 20 Model Electron Microscope - scan and discover.
- 21 Model Crystal - heat and cool the crystal.



# Curriculum Links in the Fire Pavilion

This document is one of five making up a teacher's guide to the Fire Pavilion. 'Exploring the Fire Pavilion' provides a list of questions to focus exploration and promote discussion about what is happening at each exhibit. Questions are open-ended to enable all ages to interact at an appropriate level. There is a quiz and answer sheet which can be used with pupils, 'Fire Pavilion Quiz', focusing on heat, changes and fire. The 'Fire Pavilion Plan' contains a comprehensive exhibit list, the numbering is not intended to provide a guided route around the pavilion.

The Fire Pavilion contains exhibits about fire, heat, changing materials and heat transfer. Many of the exhibits also convey ideas about art, design and the use of materials. Your visit to Fire has these potential links to the National Curriculum:

## KS1 and KS2 Science

Materials and properties  
Changes materials through heating and cooling

## KS3 Science

Forces  
Material Behaviour

## KS1 and KS2 Art and Design

Breadth of Study:  
Investigating art, craft and design

## KS3 Design and Technology

Understand and Evaluate:  
Reflect and evaluate on others' design work

## KS1 and KS2 Learning Across the Curriculum

Creativity and Skills

## KS3 Skills

Encouraging creative thinkers

Check the Fire Pavilion exhibits to see which will have most relevance to your curriculum theme. The numbers in brackets refer to the location on the Fire Pavilion plan:

### Heat Changes

- Charred Remains(2)
- Fire Tornado(4)
- 2 stroke/4 stroke(6)
- Electric Arc(8)
- Expansion(13)
- Shaping Metals(18)
- Cool Crystals(19)
- Model Crystal(21)

### Heat Transfer

- Radiant Face(7)
- Pumping Heat(12)
- Conduction(14)
- Convection(15)

### Heat, You and Safety

- Fire Safety(9)
- Hot Spots(16)
- Feel the Heat(17)

### Properties of Materials

- Corridor of Steel(3)
- Fire Tornado(4)
- Steel Saver(5)
- Steel Properties(10)
- Steel Futures(11)
- Expansion(13)
- Conduction(14)
- Model Electron Microscope(20)

### Design and Aesthetics

- Wild Fire(1)
- Corridor of Steel(3)
- Fire Tornado(4)
- Steel Properties(10)

