

## The blast furnace

Before you answer the puzzles below fill in the table of the four raw materials (reactants) put into the blast furnace using:

limestone	Fe <sub>2</sub> O <sub>3</sub> C	to keep coke burning
reactant	purpose	formula
coke	burns to produce heat and reducing agent	
iron ore	contains iron oxide which is reduced to iron	
hot air		O <sub>2</sub> /N <sub>2</sub>
	remove impurities as slag	CaCO₃

#### **Gridlock 1**

Each row, column and 2 x 2 box contains each of the four reactants. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

reactant		purpose	
coke			remove impurities as slag
	limestone		
			coke
		iron ore	
purp	oose	reac	ctant





# gridlocks - can you unlock the grid?

## **Gridlock 2**

Each row, column and 2 x 2 box contains information about the four reactants.

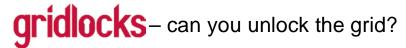
reactant		purpose	
iron ore			
		remove impurities as slag	
		С	
	to keep coke burning		
purpose		forn	nula

#### **Gridlock 3**

Each row, column and 2 x 2 box contains information about the four reactants.

reactant		purpose	
	coke		remove impurities as slag
			burns to produce heat and reducing agent
contains iron oxide which is reduced to iron			O <sub>2</sub> /N <sub>2</sub>
pur	oose	forn	nula





## The blast furnace - answers

Before you answer the puzzles below fill in the table of the four raw materials (reactants) put into the blast furnace using:

reactant	purpose	formula
coke	burns to produce heat and reducing agent	
iron ore	contains iron oxide which is reduced to iron	Fe₂O₃
hot air	to keep coke burning	O <sub>2</sub> /N <sub>2</sub>
limestone	remove impurities as slag	CaCO₃

### Gridlock 1 - answers

reactant		purpose	
coke	iron ore	to keep coke burning	remove impurities as slag
hot air	limestone	burns to produce heat and reducing agent	contains iron oxide which is reduced to iron
contains iron oxide which is reduced to iron	to keep coke burning	limestone	coke
remove impurities as slag	burns to produce heat and reducing agent	iron ore	hot air
purpose		reac	ctant





# gridlocks - can you unlock the grid?

## Gridlock 2 - answers

reactant		purpose	
iron ore	limestone	to keep coke burning	burns to produce heat and reducing agent
hot air	coke	remove impurities as slag	contains iron oxide which is reduced to iron
remove impurities as slag	contains iron oxide which is reduced to iron	С	O <sub>2</sub> /N <sub>2</sub>
burns to produce heat and reducing agent	to keep coke burning	Fe <sub>2</sub> O <sub>3</sub>	CaCO₃
purpose		forn	nula

## Gridlock 3 - answers

reactant		purpose	
hot air	coke	contains iron oxide which is reduced to iron	remove impurities as slag
limestone	iron ore	to keep coke burning	burns to produce heat and reducing agent
burns to produce heat and reducing agent	to keep coke burning	CaCO₃	Fe <sub>2</sub> O <sub>3</sub>
contains iron oxide which is reduced to iron	remove impurities as slag	С	O <sub>2</sub> /N <sub>2</sub>
purpose		forn	nula



