

## All the Gold

### **Gold facts:**

Gold has a density of **19.3 g/cm<sup>3</sup>**.

The price of gold is currently around **£35 per gram**.

The entire gold reserves of the world currently total around **165,000 tonnes**.



### **Task 1**

What is the value of one cubic centimetre of gold?

### **Task 2a**

How heavy would a lump of gold worth £1 million be?

### **Task 2b**

What would the volume of this lump of gold be?

### **Task 2c**

If this lump of gold were made into a solid cube, what would the measurements be?

*Hint: The volume of a cube is  $V = x^3$ . You can find cube roots using a calculator.*

### **Task 3**

If the entire gold reserves of the world were melted down to form a huge cube, what would the measurements be?

## All the Gold Solutions

### **Gold facts:**

Gold has a density of **19.3 g/cm<sup>3</sup>**.

The price of gold is currently around **£35 per gram**.

The entire gold reserves of the world currently total around **165,000 tonnes**.



### **Task 1**

What is the value of one cubic centimetre of gold?

$$19.3 \times 35 = \mathbf{£675.50}$$

### **Task 2a**

How heavy would a lump of gold worth £1 million be?

$$1000000 \div 35 = \mathbf{28571g}$$
 to the nearest gram (or 28.571kg)

### **Task 2b**

What would the volume of this lump of gold be?

$$28571 \div 19.3 = \mathbf{1480cm^3}$$
 to the nearest cm<sup>3</sup>

### **Task 2c**

If this lump of gold were made into a solid cube, what would the measurements be?  
*Hint: The volume of a cube is  $V = x^3$ . You can find cube roots using a calculator.*

$$1480 = x^3 \quad \Rightarrow \quad x = \sqrt[3]{1480} = \mathbf{11.4cm}$$
 to 1 d.p.

*It will be an 11.4 by 11.4 by 11.4cm cube.*

### **Task 3**

If the entire gold reserves of the world were melted down to form a huge cube, what would the measurements be?

$$165000 \text{ tonnes} = 165000000000g$$

$$\text{Volume} = 165000000000 \div 19.3 = 8549222798cm^3$$

$$8549222798 = x^3 \quad \Rightarrow \quad x = \sqrt[3]{8549222798} = 2045cm \text{ to nearest cm} = \mathbf{20.45m}$$