



<p>Nom :</p> 	<p>BTEC National in public works <i>European section</i> <u>Classe</u> : 2nde bac pro TP</p>	
<p>Units and conversions</p>		

The exercises below are based on data and information about crossing top number 115 over the French highway A89.

EXERCISE N°1 : THE HEIGHT OF THE CROSSING TOP

- 1-1-** How high is the bridge (in metres) ? --- **Make a complete sentence.**
- 1-2-** Convert metres to inches. Then write the formula and the result in full letters.
- 1-3-** Convert metres to feet.
- 1-4-** Convert metres to yards.
- 1-5-** Convert metres to miles.
- 1-6-** According to you, which units are not appropriate to speak about the height of the bridge ?

EXERCISE N°2 : THE AREA OF THE CROSSING TOP

- 2-1-** How wide and how long is the bridge ? --- **Make a sentence.**
- 2-2-** Taking these measurements into account, say how large this new road is (in square metres) --- **Make a sentence**
- 2-3-** Convert square metres (m²) to square inches (sq in) You will have to use a power of 10. Then write the formula and the result in full letters.
- 2-4-** Convert square metres to square feet (sq ft)

EXERCISE N°3 : TOTAL MASS OF THE BRIDGE

- 3-1-** What is the total mass of concrete used for this bridge ?
--- **Make a sentence to express it in kilograms.**
- 3-2-** Convert kilograms to pounds.
- 3-3-** Convert pounds to Newton. Then write the formula and the result in full letters.

EXERCISE N°4 : BUILDING MATERIAL QUANTITIES

To make concrete , we need :

- Cement : 400kg
- Sand : 40L
- Gravel : 60L
- Water : 20L

4-1- From the total volume of concrete, calculate each material quantity needed for the construction of this bridge.

4-2- Then express the material quantities in kilograms.

Mass density : sand 1.6kg/m^3 ; gravel 1.7kg/m^3

4-3- Convert kilograms to pounds.