Physics Induction Activity 2021

Welcome to the Physics Department at Ashton Sixth Form College! :)

Your first things to do:

- *Make sure you have a QR reader on your phone. Sometimes it can work straight through the camera app by scanning the QR codes below.*
  If not download a QR reader for your phone.
- *Watch the videos below and complete the tasks.*

1. Go on our You Tube Channel, Zphysics:

https://www.youtube.com/channel/UC3L5MO3gJTlB09wmmHGW5Qg and watch the following video:

Rearranging equations:
https://youtu.be/EMOzbQxfdWw

Now complete the following task:

1. $E = \frac{1}{2} mv^2$ (make v the subject)

2. $A = \pi r^2$ (make r the subject)

3. $F = ma$ (make a the subject)

4. $E = mc^2$ (make m the subject)

5. $v^2 = u^2 + 2as$ (make a the subject)

6. $F = GMm/r^2$ (make M the subject)

2. Do you remember how to do standard form? Complete the following:

1. Write 100 000 as a power of 10

   .....

2. Write 0.001 as a power of 10

   .....

3. Write 2530 in standard form

   .....

4. Write 0.0091 in standard form

   .....

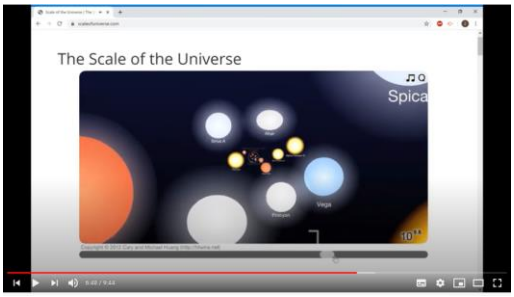
5. Write 8.31×10^6 as a normal number

   .....

6. Write 6.002×10^{-2} as a normal number

   .....

3. Watch this video on prefixes: https://youtu.be/213HxbVovng



Now complete the following:

1. Convert 326.9 GW into W. Express in standard form.

   .....

2. Convert 54 600 mm into m. Express in standard form.

   .....

3. Convert 1002 mV into V. Express in standard form.

   .....

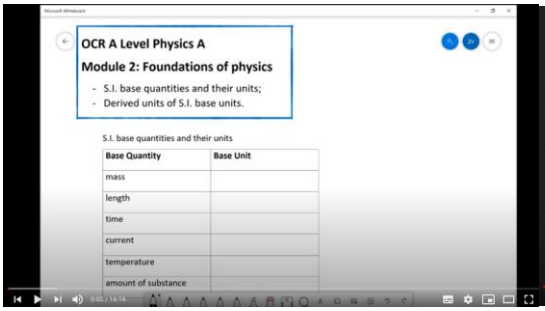
4. Convert 9212 km into m. Express in standard form

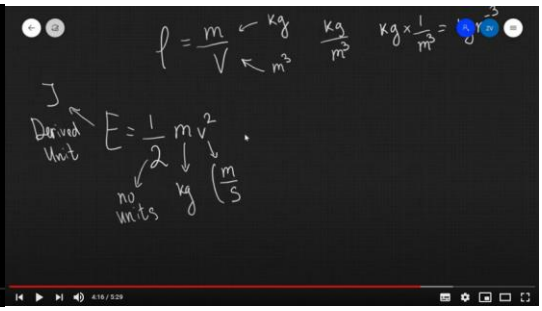
   .....

5. Write 2.3 x 10^2 μm in m. Express in standard form

   .....

4. Watch the following videos:
   https://youtu.be/VH4luBW05YQ and
   https://youtu.be/NnUeqjto33o





Now attempt the problems:

1. List the six base **units** that you will be using in A Level physics.

2. Charge is calculated as *charge = current x time*. Determine the **base units** for charge.

3. Kinetic energy is calculated as *kinetic energy = ½ x mass x speed*^{2}. Determine the **base units** of kinetic energy.

4. Pressure is calculated as *pressure = force/cross sectional area*. Determine the **base units** for pressure.

5. *Final one!*
   Make an account as www.isaacphysics.org. (You will be using this website a lot throughout the course :))
   Watch the following video:
   https://youtu.be/JvBNw9zt0OY

   Attempt the following set of problems on Isaac Physics:
   https://isaacphysics.org/questions/ch_a_p6?board=gcse_alevel_transition_skills