

Choose your homework each week from the menu below.

The Peri-ometer indicates the level of challenge the homework may offer.

You must attempt **at least one Extra Hot** task this half term.

Year 10 Science

One task due every week



Explain how the boiling points and the length of the molecules enables us to separate the different fractions in crude oil. Compare the viscosity and flash points of each fractton.

Explain what an isotope is and why chlorine has a mass of 35.5 on the periodic table of elements. Draw the isotopes of carbon and hydrogen and explain how they differ in their structures.

Explain why energy efficient light bulbs are cheaper to use than filament light bulbs. Use sankey diagrams to illustrate this.

Explain how the boiling points and the length of the molecules enables us to separate the different fractions in crude oil.

Explain what an isotope is and why chlorine has a mass of 35.5 on the periodic table of elements.

Draw a sankey diagram to show the energy transfers for a light bulb, a TV and a car. Estimate the percentages of each type of energy.

Describe how we separate the fractions of crude oil using a diagram to illustrate.

Describe how the periodic table of elements is arranged in relation to the proton number and what this means. Define what mass number means.

Look at 3 electrical appliances in your home and compare their energy efficiency ratings.

Find out at least 5 things that we get from oil using fractional distillation and what we use them for.

Draw an atom and label the protons, neutrons and electrons

Look at 3 electrical appliances in your home and find the energy efficiency rating for them.

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Year 11 Science

One task due every week



Explain what cracking is and how this can be used in industry Give examples of cracking including the chemical equations and describe the conditions needed for cracking to take place.

Explain which chemicals are used to make the following formulations – paint, alloys, fertilisers. Find the chemical formulas for some of the compounds found in these formulations.

Explain how the composition of the gases in the Earth's atmosphere is different now compared to billions of years ago. Describe why it has changed and how atmospheric pollutants can affect our atmosphere.

Draw the structure of the first 10 alkanes and alkenes and describe how you test whether a substance is an alkane or alkene. Write the equation for the reaction when the test is positive.

Explain which chemicals are used to make the following formulations – paint, alloys, fertilisers.

Explain how the composition of the gases in the Earth's atmosphere is different now compared to billions of years ago. Describe why it has changed.

Describe the trend in viscosity in alkanes and alkenes in relation to the length of the molecules. Use diagrams to illustrate this.

Describe what a formulation is and how they can be used in industry. Give examples of 3 different types of formulations.

Draw a bar chart or pie chart to show the percentages of the different gases in the Earth's atmosphere.

Name 5 alkanes or alkenes and say whether they are a solid, a liquid or a gas.

Describe how coal and oil are formed and draw diagrams to illustrate this.

Name some of the gases in the Earth's atmospheres and find a percentage for each one.