

GCSE Chemistry A (Gateway Science)
J248/04 Chemistry A C4-C6 and C7 (Higher Tier)

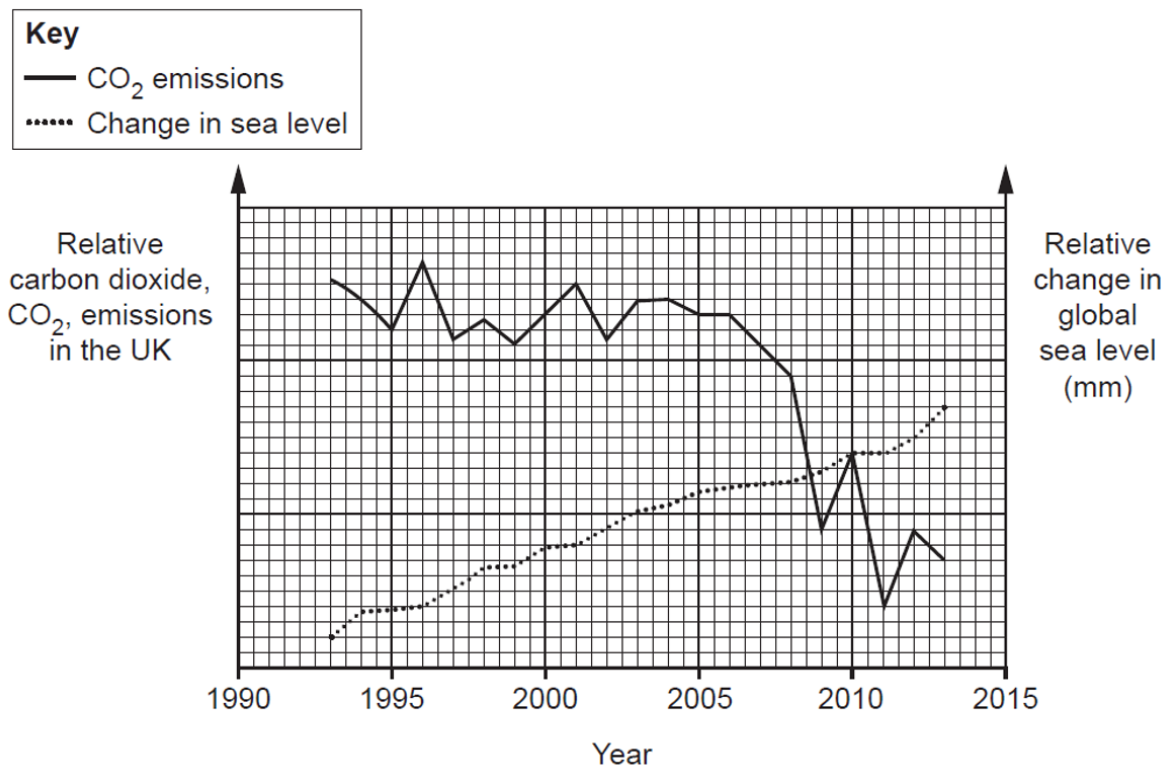
Question Set 5

- 1 Some scientists believe that the increased burning of fossil fuels has contributed to global warming.

The scientists say that global warming is causing ice to melt, which results in sea levels rising.

Other scientists believe that rises in global temperatures are just natural variations.

The graph shows the carbon dioxide, CO₂, emissions by fossil fuels in the UK and the changes in global sea levels between 1993 and 2013.



- (a) Evaluate the information shown in the graph.

To what extent does the graph support a link between human activity and global warming?

[3]

↓ consider for + against

as the CO₂ emissions decrease, the sea level change is greater; this indicates that when less CO₂ is being emitted due to human activity, the temperature of our oceans is lower but the sea levels still rises, supporting the belief based on natural variations, as doesn't encourage global warming thus independent.

However, when there is a sharp rise in CO₂ emissions from 2009-2010 & 2011-2012, there is a subsequent rise in sea level change. This weakens the correlation, and supports the link for global warming.

- (b) There are problems with using information about **CO₂ emissions by fossil fuels** to draw conclusions about the effect of carbon dioxide emissions on **global** sea levels. Suggest what these problems are. [2]

CO₂ can be emitted by processes other than burning fossil fuels.

to see the impact on global sea levels, you must have information from every country, which is not fully disclosed.

- (c) (i) Describe **one** effect on the Earth's climate of increased carbon dioxide levels, other than rising sea levels. [1]

increased frequency of storms [1]

- (ii) Suggest how we can lower carbon dioxide levels.

switch to renewable energy e.g. solar power

Total Marks for Question Set 5: 7

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Resource Materials

The Periodic Table of the Elements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(0)																														
1	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Key atomic number Symbol name relative atomic mass </div>							18																													
2								2																													
1	H hydrogen 1.0							He helium 4.0																													
3	Li lithium 6.9	4	Be beryllium 9.0					10																													
11	Na sodium 23.0	12	Mg magnesium 24.3					18																													
19	K potassium 39.1	20	Ca calcium 40.1	3	21	Sc scandium 45.0	4	22	Ti titanium 47.9	5	23	V vanadium 50.9	6	24	Cr chromium 52.0	7	25	Mn manganese 54.9	8	26	Fe iron 55.8	9	27	Co cobalt 58.9	10	28	Ni nickel 58.7	11	29	Cu copper 63.5	12	30	Zn zinc 65.4				
37	Rb rubidium 85.5	38	Sr strontium 87.6	39	Y yttrium 88.9	40	Zr zirconium 91.2	41	Nb niobium 92.9	42	Mo molybdenum 95.9	43	Tc technetium	44	Ru ruthenium 101.1	45	Rh rhodium 102.9	46	Pd palladium 106.4	47	Ag silver 107.9	48	Cd cadmium 112.4	49	In indium 114.8	50	Sn tin 118.7	51	Sb antimony 121.8	52	Te tellurium 127.6	53	I iodine 126.9	54	Xe xenon 131.3		
55	Cs caesium 132.9	56	Ba barium 137.3	57-71	lanthanoids			72	Hf hafnium 178.5	73	Ta tantalum 180.9	74	W tungsten 183.8	75	Re rhenium 186.2	76	Os osmium 190.2	77	Ir iridium 192.2	78	Pt platinum 195.1	79	Au gold 197.0	80	Hg mercury 200.6	81	Tl thallium 204.4	82	Pb lead 207.2	83	Bi bismuth 209.0	84	Po polonium	85	At astatine	86	Rn radon
87	Fr francium	88	Ra radium	89-103	actinoids			104	Rf rutherfordium	105	Db dubnium	106	Sg seaborgium	107	Bh bohrium	108	Hs hassium	109	Mt meitnerium	110	Ds darmstadtium	111	Rg roentgenium	112	Cn copernicium	113	Nh nihonium	114	Fl flerovium	115	Mc moscovium	116	Lv livermorium	117	Ts tennessine	118	Og oganeson