



46. An elementary problem

Time

1 h.

Curriculum links

Industrial processes.

Group size

1–3.

Commentary

This problem is easier if you ignore the chemistry and treat it as a logic problem. Students enjoyed doing it, as did the teachers! If students are struggling to get started encourage them to draw up a grid with the variables across the top and down the side. This will enable them to mark in correlations.

Answer

The answer is

Company	Chemical	Process	Day
A	Potassium oxide	Haber	Tuesday
B	Sodium hydroxide	Bayer	Monday
C	Magnesium	Kroll	Thursday
D	Vanadium(V) oxide	Contact	Friday
E	Calcium carbonate	Solvay	Wednesday

Extension

During trialling some institutions extended this work by asking students to find out more about the chemical processes.

Acknowledgement

This activity was suggested by Jacqui Clee.



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- ▼ Five chemical companies are awaiting chemicals from suppliers and they will be delivered on different days. From the information given, which company has ordered which chemical, which process is involved, and on what week day are they to be delivered?

Company E has ordered a chemical for the Solvay process while the sodium hydroxide is for company B. Both of these orders must be delivered before those for company D and the company that operates the Kroll process.

The vanadium(V) oxide is needed for the Contact process while the chemical for the Bayer process is needed before Friday. The magnesium is not required by company A.

The chemical for the Haber process, which is not sodium hydroxide is to be delivered on Tuesday while the calcium carbonate that was not ordered by company D is to be delivered on Wednesday.

Potassium oxide is one chemical on order and the chemical for company C will be delivered on Thursday.