



Lesson: Phosphate Fertiliser



ACTIVITY OUTLINE



Think about the impacts of a fall in crop/ food production, students can brain storm in groups or list 5 consequences each and then share as a whole class.

Students complete the gaps identifying the elements provided to plants by particular salts.

In pairs complete the card sort to build understanding of the linear system of production of phosphate fertiliser.

As a whole class go over the sequence and draw attention to the named salts produced in reactions with different acids.

In 3s work on the writing task to re-imagine the linear system as a circular one.

Students should be given a large sheet of paper (at least A3) to work on, they can use the cards from the earlier exercise to rebuild a circular system.

Food waste is a major contributor to phosphate loss from the system, students identify 3 actions they can take to reduce food waste.



CURRICULUM OUTCOMES



Students name the elements contained in NPK fertiliser and can identify its use to improve agricultural productivity.

NPK fertilisers are formulations of various salts containing appropriate percentages of the elements.

Phosphate rock is obtained by mining but cannot be used directly as a fertiliser. Recall the names of the salts produced when phosphate rock is treated with nitric acid, sulfuric acid and phosphoric acid to produce soluble salts that can be used as fertilisers.



Lesson: Phosphate Fertilisers



GLOBAL LEARNING OUTCOMES



RESPONSIBLE CONSUMPTION AND PRODUCTION



Students understand that the earth's capacity to absorb waste produced by current production processes is finite

Students can explain the difference between linear and circular systems

SMSC / British Values - Understanding of the consequences of their behaviour and actions

Action



Food waste is a major contributor to phosphate loss from the system. Is there a lot of food waste in your school?

The Royal Horticultural Society's campaign for school gardening has tips for composting at school.

Check out their website for more information and see how you can reduce food waste at your school:

<https://schoolgardening.rhs.org.uk/Resources/Info-Sheet/Composting-for-schools>



The project has been funded with support from the European Commission. The contents of this publication are the sole responsibility of Leeds DEC and do not necessarily reflect the opinion of the European Union.