

MEDICINES – THE IMPACT OF AIRMILES AND PACKAGING WASTE

Mel Matthew – PGDE General Science Proposal

Lesson 1 – Microbes and disease - how do we fight infections? Theory lesson on cells, immune system and common infections – card sort / literacy exercise.

Lit 3-04a / SCN 3-13a / SCN 3-13b

Lesson 2 – Vaccinations, antibiotics and painkillers – What are they? How are they made? Video of pharmaceutical production.

SCN 3-13c / SCN 3-16a / SOC 3-20b

Lesson 3 (DOUBLE) – IT research locations of pharmaceutical production plants. Calculate distance of one example, create mini poster and map out using wool on wall poster map.

TCH 3-02a / Lit 3-24a / MNU 3-20a / SCN 3-20b / SOC 4-09b

Lesson 4 – Pharmaceutical packaging – how do we reduce this? Using examples of packaging as stimulus, examine surface areas.

MTH 4-11b / MTH 4-11c / SOC 3-08a / TCH 4-06a

Lesson 5 (DOUBLE) – Work in groups to design alternatives to reduce plastics, surface areas and materials.

Create alternative packaging mock-ups.

MTH 4-11b / MTH 4-11c / SCN 4-16a / SCN 4-17a /

TCH 3-07a / TCH 3-09a / TCH 4-10a

CONTEXT

The current structure of the NHS, global pharmaceutical economy and provision of free prescriptions in Scotland is unsustainable.

Medications are produced across the globe, with huge numbers of vital medications being imported from Europe and the USA. Economic instability due to Brexit has already shown decline in availability of some medications with this number is expected to grow.

Furthermore leaflets, packaging and bottles contribute millions of tonnes of waste to landfill annually. Blister packs are a particular problem as they are currently non-recyclable.

During this unit of work, pupils will examine the impact of the global healthcare industry on the natural environment, explore the manufacturing processes of pharmaceuticals and design more eco-friendly, sustainable packaging.

INTER-DISCIPLINARY LEARNING

Throughout this series of six lessons, pupils will combine knowledge from Science with work in Maths (statistics), Geography and Design & Technology to examine the effects of healthcare pharmaceuticals on the global economy (an introduction to Modern Studies).

STEM & SUSTAINABILITY

The project aims to tie together the themes of the STEM agenda, combining science with statistical analysis and design to generate an appreciation of the impact of the healthcare industry on our planet. Combining the STEM subjects also allows an insight into wider career disciplines such as biomedical sciences, pharmacology and product design.

Sustainability is a key theme for the activities, allowing pupils to examine the sustainability of the economy our current healthcare provision; the production and transport of pharmaceuticals and the materials used to produce packaging.

