Synthetic Biology Lesson Plan

ECM	Scheme of Work	Lesson title: Synthetic Biology	Year 9/10	Lesson 1 Minutes 60

Learning Objectives

1) Talk to students about synthetic biology and allow them to understand this novel aspect of science. Can also include what can be done with the science

2) Building a gene cassette understanding the idea of biobricks

Key words
Synthetic biology, Biobricks, genetic engineering, genetics, gene cassette, bacteria

Key Skills

E-learning Presentation and video clips

Literacy Handouts Flipchart paper, use of paper to produce a gene casette

PLTS Team work, Outside thinking and organisation

Learning Activities

Starter

- Introduction about what we are teaching, why we are teaching it and who we are
- Ask if anyone knows what synthetic biology and from this what they think it is
- Include aspects of genetic engineering, may allow for more understanding.

(10minutes inc. settling time)

Development

- Show a powerpoint which will talk about synthetic biology and include a short clip about it using the BBC programme based on synthetic biology.

(12 minutes)

- Understanding components of synthetic biology such as Biobricks. Get students to build a "gene cassette" with the use of different parts like when building an electric circuit (20 minutes)

- Allow students to work together to determine the ethical issues surrounding the use of genetic engineering and synthetic biology (With the use of flipchart paper). Asking each group about opinions

(10 minutes)

Plenary

See what they have understood from the lesson with a short quiz. They can work with each other and at the end of the quiz winner could be given a reward (maybe chocolates)

(8 min)

Resources : Powerpoint, Use of video clips from BoB National, use of paper or cardboard with images of biobrick.

Extension

Talk to students about the project that our team will be doing in more detail. Maybe talk about the possible areas of research, but not in complex detail.

Home learning	Assessment opportunities
Reading about synthetic biology and looking at it in respect of a growing career	Worksheets and a short quiz at the end