



Kendal College
creating bright futures



**WELCOME TO
LEVEL 3
ACCESS TO HE DIPLOMA
SCIENCE**

Welcome

Included in this booklet is information about the Access to HE course you will start in September.

You will find information about the units you will be studying and helpful links.

There are also activities and tasks that you can undertake if you choose to, and these will give you an insight into getting back into study.

Please don't worry if you are not in a position to carry out these tasks and activities during this difficult time, just use the booklet as information that will help you when you start with us in September.

We look forward to meeting you and welcoming you to Kendal College.

The Access team

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What will I be studying in Science?

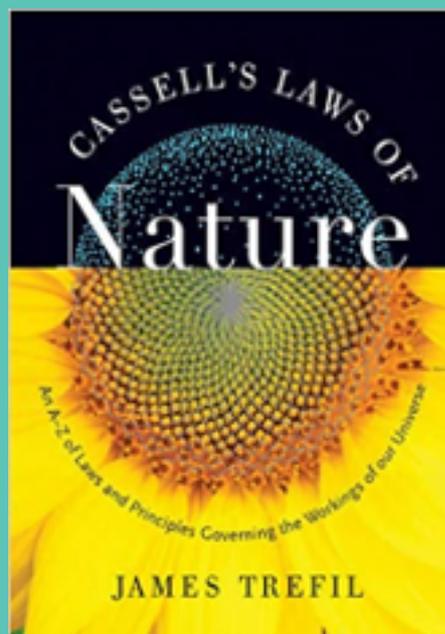
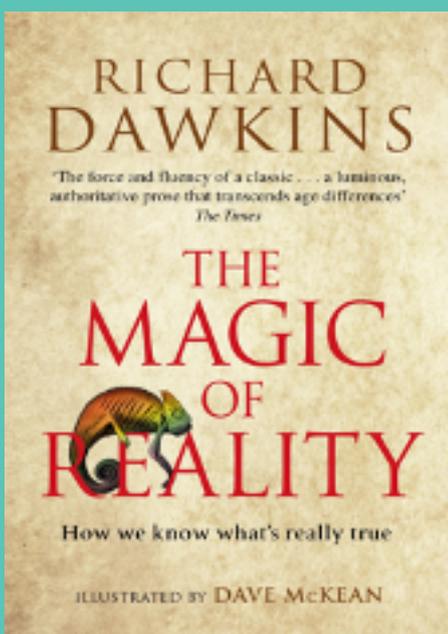
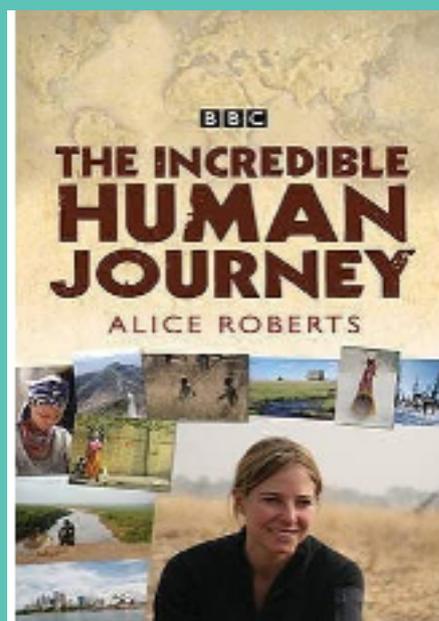
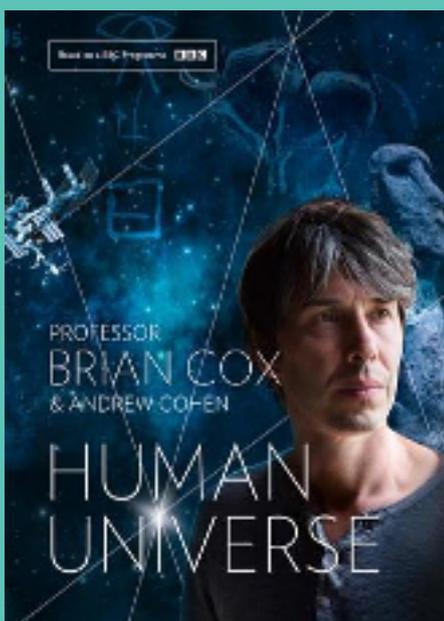
This course allows you to go down any scientific route you wish at university, leading to the myriad of science careers from aeronautics to zoology. You will be studying a range of units which will help you to gain skills that will be valuable in your chosen course and future career. You will select your learning from a wide range of graded units and also complete a scientific projects relating to the area of science you are most interested in. You will complete a compulsory maths unit 'algebra' essential for all scientific subjects and learn how to present and interpret scientific data. The list of optional units is presented below. You will decide which eleven is of most interest and relevance to you.

- Cells
- Human Tissues and Systems
- Biological Chemistry
- Photosynthesis and Respiration
- Genes and Inheritance
- Matter Particles and Formulae
- Amount of Substance
- Chemistry of Aqueous Solutions
- Chemical Kinetics
- Organic Chemistry
- Properties of Matter
- Motion Energy and Forces
- Atomic Physics
- Electricity
- Waves
- Functions and Graphs
- Probability and Statistics
- Calculus

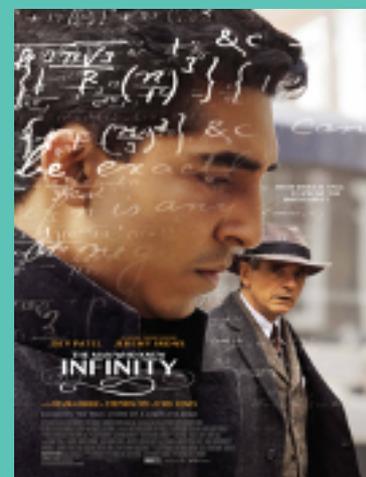
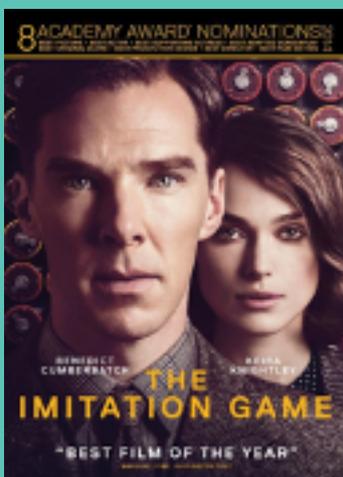
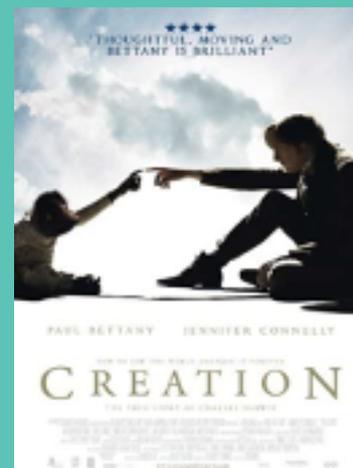
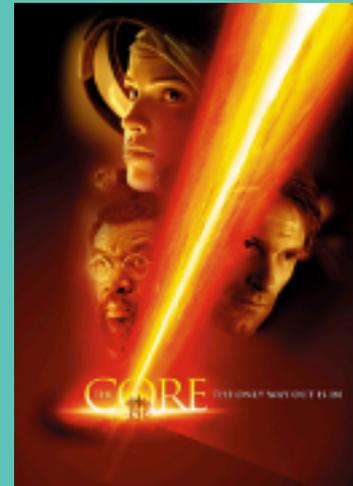
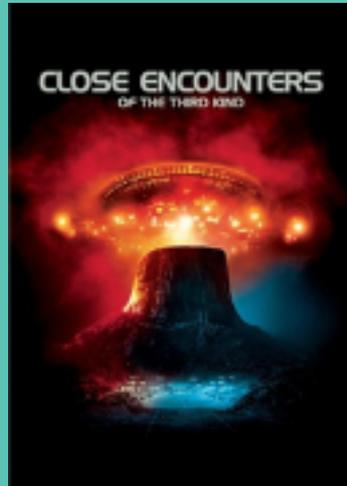


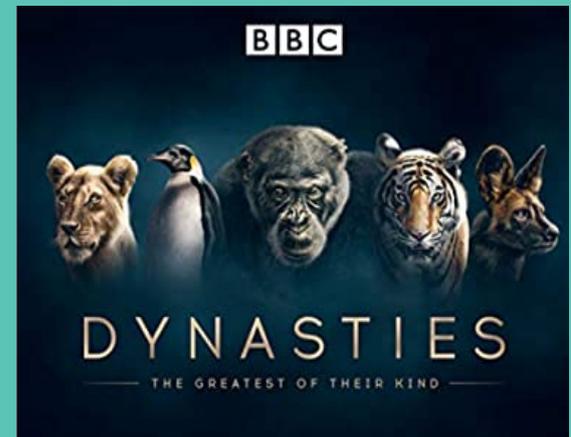
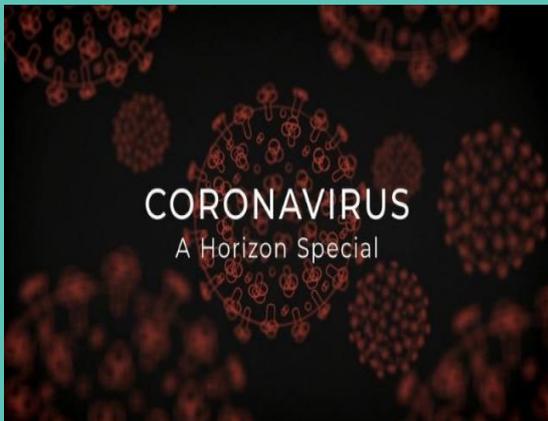
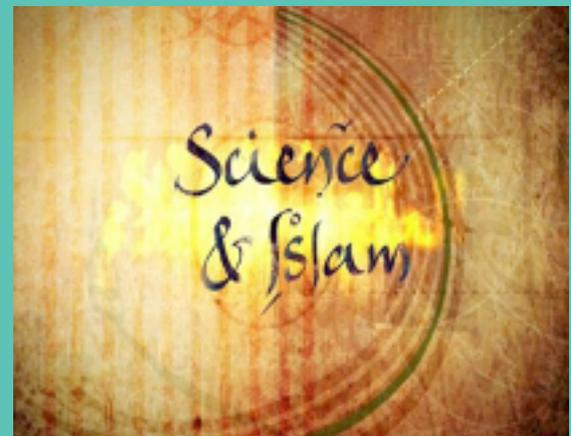
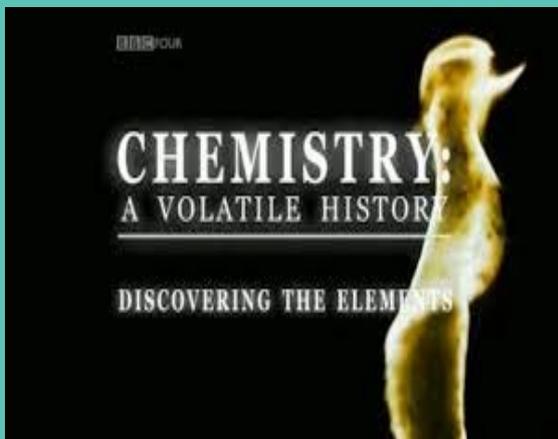
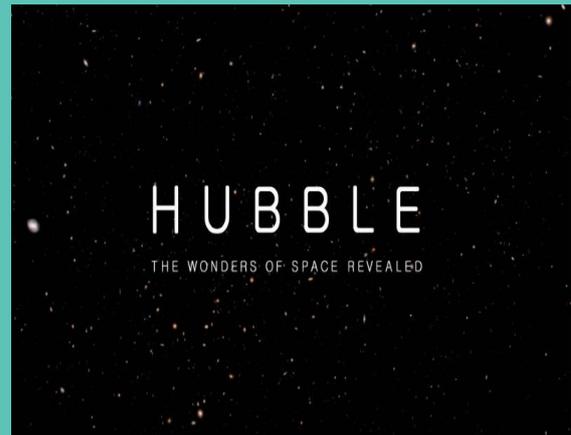
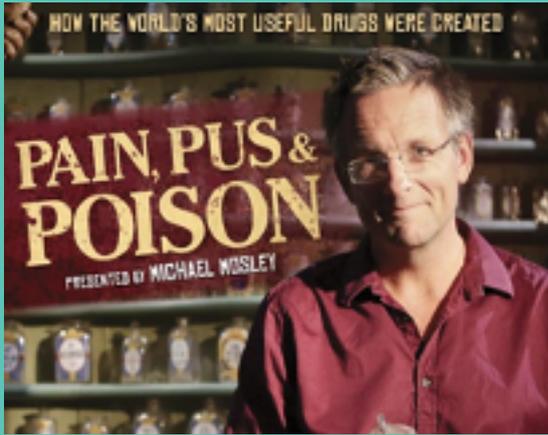
The course also includes five compulsory study skills units in: Finding and Reading Information, Note Taking and Note Making, Report Writing, Examinations Skills and Writing and Delivering Seminar Papers. These will help to build your confidence up initially. Study skills units are ungraded so they do not affect your overall grade.

There are no official textbooks for the course. But it is would always be useful to get hold of an AS or A level text book in Biology, Chemistry, Physics and Maths as these will act as a great resource for all the units you will take. There are lots of different ones out there and which ones are best for you will be down to personal preference. Do not pay too much – a good website for second textbooks is www.abebooks.co.uk , eBay or amazon etc. There are also hundreds of popular science books available. Here are three favourites to grace you bookshelf.



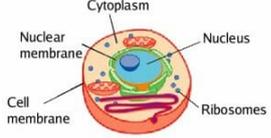
There are also hundreds of films and documentaries about science. Many science fiction films actually contain a lot of good science. There are also wonderful biographies telling the story of scientific discoveries and the effect they have had on our lives. Here's just a few you can get on Netflix, Google Play, Amazon Prime, BBC Iplayer etc.





GLOSSARY

Task: Some words you will use in Science have meanings slightly different from the way we use them in everyday language. Also words used in Biology may have a different meaning when they are used in Physics. Research and define the following words which you will be using on your Access Course

Term	Definition	Symbol
Cell (Biology)	The basic membrane-bound unit that contains the fundamental molecules of life and of which all living things are composed.	
Cell (Physics)		
Period (Chemistry)		
Period (Physics)		
Power (Maths)		
Power (Physics)		
Tissue (Biology)		
Compound (Chemistry)		
Force (Physics)		
Translation (Maths)		



GLOSSARY

Term	Definition	Symbol
Respiration (Biology)		
Base (Chemistry)		
Stress (Physics)		
Error (Maths)		
Membrane (Biology)		
Buffer (Chemistry)		
Normal (Physics)		
Normal (Maths)		
Organic (Chemistry)		
Light (Physics)		



There are a huge range of jobs that require a science degree. Some of them you may not have heard of or thought about. Use the info-graphic above to get started and see if you can find one for every letter of the alphabet.

A

I

S

B

K

T

C

L

U

D

M

V

E

N

W

F

O

X

G

P

Y

H

Q

Z

J

R

Making a Difference

Have a look at the unusual job roles listed below and find out the effect they have on peoples lives, communities and environment.

Job Role	The Difference They Make
arborist	
cartographer	
dietician	
haematologist	
hydrologist	
mudlogger	
orthoptist	
sonographer	
zoologist	

Practical Science Project:

An important part of the Access to HE (Science) course is a practical science project. It's worth six credits, twice as much as most other units. To get yourself into the swing of things, do some simple investigations at home over the summer.

A science investigation looks at how something (the dependent variable) changes when you deliberately change something else (the independent variable). You'll need to be able to control everything else that might affect what you are doing (the control variables) to get reliable results. You also need to produce numbers and even graphs (quantitative data). Here are some ideas:

The perfect... cup of tea (how long should you leave the tea bag in?), piece of toast, boiled egg, spaghetti etc.

How does the length of a pendulum (piece of cotton with something heavy at one end) determine the time of each swing?

How does my heart rate change when I lie down, sit stand walk, jog, run? How does my breathing rate change when I do these things?

What's the pattern of hair colour and eye colour in all the people I know? What about shoe size and height?

Plant some seeds and put them in places which receive different amounts of sunlight. Check how quickly they germinate and how quickly they grow.

Find out how quickly a spoonful of icing sugar, castor sugar and granulated sugar dissolve in a cup of water. What difference does changing the temperature make. What happens if you add some lemon juice?

Measure the temperature of a cup of hot water every minute. What happens to the rate of cooling if the cup is metal, glass, plastic, china or polystyrene?

If you have a slow motion camera on your phone, time how long it takes for a ball to reach the ground when dropped at different heights. What's the relationship? Could you use your results to make predictions?

Any questions regarding the course contact –
Steve.Richardson@kendal.ac.uk

Course Tutor for Access to HE (Science).



And Finally.. The Not So Trivia Quiz.

What is a(n):

Organelle

Active Transport

Meiosis

Monomer

Lipid

pH

Enzyme

DNA

Photosynthesis

ATP

Epithelial Tissue

Homeostasis

Isotope

Ionic Bond

Catalyst

Alcohol

Latent heat.

Archimedes' Principle

Ideal gas

Simple Harmonic Motion.

Kinetic Energy

Doppler shift

Photon

AC and DC current

Planck constant

Histograms

Ogive

Stem & Leaf Diagram

Normal Distribution

Calculus



THE **#1** RANKED COLLEGE IN THE COUNTRY *

*FE week

We will send you a Welcome Guide in July with more information about student life.
In the meantime, if you have any questions, please get in touch.