University of Hertfordshire UH

Preparation for beginning the BEd (Hons) Primary with QTS programme

Welcome to the BEd Degree Programme at the University of Hertfordshire.
We are looking forward to working with you next year on your journey to becoming a primary school teacher. This booklet is to help you prepare for the BEd programme.

A key aspect of being an effective teacher is having good subject knowledge and we will support you through the programme to develop your knowledge, skills and understanding in each area of the curriculum.

To begin this process, this booklet sets out some initial tasks related to English, mathematics and science for you to complete before you start the course in September. There is also a task for you to begin thinking about how you will develop your professional practice.

Contents

University of Hertfordshire UH

Section 1: English course preparation

Task 1: Children's literature

A key factor in successful English and literacy teaching is good knowledge of children's literature, and the best teachers of English and literacy are those who have a good knowledge of children's books. With a great knowledge of children's books, teachers can plan exciting and engaging English lessons as well as effectively promote reading for pleasure.

During the programme you will compile a log of children's books. In order to start you off on this we suggest that you choose from the list below (you don't have to complete the list – unless, of course, you want to!) This will enable you to revisit texts from your childhood and also introduce you to some new ones! Come ready to talk about the books and other texts you have read, why you chose them and what you like or don't like about them in your first English session.

- 5 award winning picture books eg from http://www.carnegiegreenaway.org.uk/greenaway/recent_winners.php
- 3 'classic' children's books
- 2 novels written for 'young adults'
- 1 non-fiction text aimed at young children and one on the same subject aimed at older children.
- 1 recent children's film and the book on which it is based
- 1 comic or magazine aimed at primary-aged school children
- A graphic novel for children
- 10 poems by 10 different poets from http://childrenspoetryarchive.org/

Here are some suggested author websites for you to browse (and you might like to look at other authors' websites):

https://www.christopheredge.co.uk/

https://www.thepoetryofjosephcoelho.com/

http://www.emilygravett.com

http://www.michaelmorpurgo.com/

http://www.juliadonaldson.co.uk/

University of Hertfordshire UH

Task 2: English Subject Knowledge Audit

Successful teachers of literacy and English have good knowledge of this curriculum subject, plus a good understanding of how to teach it and also of children's development and progress. There is a current focus on grammar, spelling and systematic synthetic phonics in the English primary curriculum. In order to understand the expectations for primary aged children in English please complete the three activities below:

1. **Please complete the 2019 KS2 Grammar, punctuation and spelling test, accessed from the webpage below:**
   https://www.gov.uk/government/publications/key-stage-2-tests-2019-english-grammar-punctuation-and-spelling-test-materials

2. **Please read through the 2014 National Curriculum vocabulary, grammar and punctuation glossary and highlight the terminology that you are unsure of or unfamiliar with:**
   https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244218/English_Appendix_2_-_Vocabulary_grammar_and_punctuation.pdf

Once you have completed the GPS test and read through the 2014 National Curriculum vocabulary, grammar and punctuation glossary please reflect on your own knowledge of spelling and grammar. Perhaps note down some specific areas that you wish to explore further. You will be working on your English subject knowledge throughout your time studying with us so you do not have to feel confident with everything now.

Please keep notes from these activities so that you can begin to construct an English subject knowledge action plan when you start on the course. This action plan will be completed with support from the English team.

University of Hertfordshire UH

Section 2: Mathematics course preparation

Task 1: Scavenger Hunt

We believe that mathematical activities should be both interesting and engaging.

We would like you to visit the National Centre for Excellence in the Teaching of Maths (NCETM) website, and look at the article in Issue 34 of their primary magazine entitled '***Digital cameras and mathematics outside the classroom'***. (Direct link below). We would then like you to undertake the mathematical scavenger hunt yourself: Take photos of the ten items and bring them to the first maths session, ready to discuss the activity.

https://www.ncetm.org.uk/resources/30914

Task 2: Maths puzzles

We learn mathematics not for its own sake but in order to solve problems in our everyday lives. We therefore want to plan activities into lessons that will challenge learners to think for themselves and to make decisions. We want children to have fun with maths while broadening and deepening their mathematical understanding.

With this in mind have a go at these puzzles and problems from the NRICH website.

MAGIC Vs	http://nrich.maths.org/6274/note
BUZZY BEE	http://nrich.maths.org/194/note
NATIONAL FLAGS	http://nrich.maths.org/7749/note

Make notes on your own response to the problems and consider the following questions:

1) To what extent did you enjoy these activities? Can you say why?

2) What different areas of maths were involved in carrying out these activities?

3) How do your own experiences of learning maths compare with these types of problem solving activities?

University of Hertfordshire UH

Section 3: Science course preparation

As a primary school teacher, you will teach elements of biology, chemistry and physics and you will need to develop your knowledge, skills and understanding in all three areas so that you can teach this exciting and dynamic subject with confidence and competence.

There are three tasks to undertake:

Preparatory Task 1 – Personal Reflection

- Reflect on your experience as a learner of science in primary and secondary school. When reflecting we would like you to focus on 2 events; 1 which you view as being a positive experience and another which you view as being less positive. When making notes on these two experiences consider the following:

- How did you feel about science as a learner at that time? Was science a subject that interested/excited you? Do you feel that influenced your experiences at that time?

- Why do you feel each experience was either positive/negative? What was it the teacher was doing? What were you doing?

- What do these reflections tell you about quality learning and teaching in science?

Preparatory Task 2 – Virtual Learning/Online supportive material

There is a wealth of supportive websites available to support science learning and teaching within the primary classroom. For the purpose of this task we would like you to focus on one; Explorify.

1) Create an account with Explorify, it is free to use. Follow the following link to their website: https://explorify.wellcome.ac.uk/
2) Explore the website and its functionality. When doing so identify what you like about the site. Equally, which aspects of the site could be improved? As a teacher you have a professional voice to be able to critique resources and select those that will be of benefit to you and your class of individual learners.
3) Select a lesson to engage with more fully. Begin to unpick how the lesson is develops learning. What structures/mechanisms are there in the lesson to support knowledge and/or skills acquisition?

University of Hertfordshire UH

Preparatory Task 3 – Science, what is the Big Idea?

This task is asking you to read through the 'National Curriculum' and 'The Working with Big Ideas' documents and reflect upon how these two documents support a teacher in ensuring subject coverage.
The science National Curriculum sets out the statutory subject coverage requirements for all state funded primary schools in England, available at https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study.

The 'Working with Big Ideas' document. Please follow the link to obtain a copy of this document
https://www.ase.org.uk/download/file/fid/6740

The full document is quite weighty, so we have also included a summary of the 'Big Ideas' as a word document below to use when engaging with the task.

- How has the National Curriculum for primary science separated learning out? How does it support progression?
- How does the 'Working with Big Ideas' material support and strengthen the National Curriculum and help show progression in conceptual understanding?
- Within the 'Big Ideas' supporting word document add your thoughts about the National Curriculum themes that may be appropriate to link to each 'Big Idea' from 1 – 10

University of Hertfordshire UH

Big Ideas	5-7	7-11	NC Topics
1 All matter in the Universe is made of very small particles *Atoms are the building blocks of all matter, living and non-living. The behaviour and arrangement of the atoms explains the properties of different materials. In chemical reactions, atoms are rearranged to form new substances.* *Each atom has a nucleus containing neutrons and protons, surrounded by electrons. The opposite electric charges of protons and electrons attract each other, keeping atoms together and accounting for the formation of some compounds.*	All the 'stuff' encountered in everyday life, including air, water and different kinds of solid substances, is called matter because it has mass, and therefore weight on Earth, and takes up space. Different materials are recognisable by their properties, some of which are used to classify them as being in the solid, liquid or gas state.	When some substances are combined they form a new substance (or substances) with properties that are different from the original ones. Other substance simply mix without changing permanently and can often be separated again. At room temperature, some substances are in the solid state, some in the liquid state and some in the gas state. The state of many substances can be changed by heating or cooling them. The amount of matter does not change when a solid melts or a liquid evaporates.	
2 Objects can affect other objects at a distance *All objects have an effect on other objects without being in contact with them. In some cases the effect travels out from the source to the receiver in the form of radiation (e.g. visible light). In other cases action at a distance is explained in terms of the existence of a field of influence, such as a magnetic, electric or gravitational field. Gravity is a universal attraction between all objects however large or small, keeping the planets in orbit round the Sun and causing terrestrial objects to fall towards the centre of the Earth.*		Objects can have an effect on other objects even when they are not in contact with them. For instance, light, both from close sources such as light bulbs or flames and from the Sun and other stars very long distances away, is seen because it affects the objects it reaches, including our eyes. These sources give out light, which travels from them in various directions and is detected when it reaches and enters our eyes. Objects that are seen either give out or reflect light that human eyes can detect. Sound comes from things that vibrate and can be detected at a distance from the source because the air or other material around is made to vibrate. Sounds are heard when the vibrations in the air enter our ears. Other examples of objects affecting other objects without touching them are the interactions between magnets or electric charges and the effect of gravity that makes things falls to the Earth.	
3 Changing the movement of an object requires a net force to be acting on it *A force acting on an object is not perceived directly but is detected by its effect on the object's motion or shape. If an object is not moving the forces acting on it are equal in size and opposite in direction, balancing each other. Since gravity affects all objects on Earth there is always another force opposing gravity when an object is at rest. Unbalanced forces cause change in movement in the direction of the net force. When opposing forces acting on an object are not in the same line*	Forces can push, pull or twist objects, making them change their motion or shape. Forces act in particular directions. Equal forces acting in opposite directions in the same line cancel each other and are described as being in balance. The movement of objects is changed if the forces acting on them are not in balance.	The speed of a moving object is a measure of how far it would travel in a certain time. How quickly an object's motion is changed depends on the force acting and the object's mass. The greater the mass of an object, the longer it takes to speed it up or slow it down, a property of mass described as inertia.	

they cause the object to turn or twist. This effect is used in some simple machines.			
4 The total amount of energy in the Universe is always the same but can transferred from one energy store to another during an event *Many processes or events involve changes and require an energy source to make them happen.* *Energy can be transferred from one body or group of bodies to another in various ways. In these processes some energy becomes less easy to use. Energy cannot be created or destroyed. Once energy has been released by burning a fossil fuel with oxygen, some of it is no longer in a form that is as convenient to use.*	There are various ways of causing an event or bringing about change in objects or materials. Objects can be made to change their movement by pushing or pulling. Heating can cause change, as in cooking, melting solids or changing water to vapour. Electricity can make light bulbs glow. Wind can rotate the blades of wind turbines.	In all these changes, energy is transferred from one object, which is an energy source or resource, to another. Fuels such as oil, gas, coal and wood are energy resources. Some energy resources are renewable, such as those produced by wind, waves, sunlight and tides, others are non-renewable such as from burning fossil fuels with oxygen.	
5 The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth's surface and its climate *Radiation from the Sun heats the Earth's surface and causes convection currents in the air and oceans, creating climates. Below the surface heat from the Earth's interior causes movement in the molten rock. This in turn leads to movement in the plates which form the Earth's crust, creating volcanoes and earthquakes. The solid surface is constantly changing through the formation and weathering of rock.*	There is air all around the Earth's surface but there is less and less further away from the surface (higher in the sky). Weather is determined by the conditions and movement of the air. The temperature, pressure, direction, speed of movement and the amount of water vapour in the air combine to create the weather.	Measuring these properties over time enables patterns to be found that can be used to predict the weather a short time ahead. Long-term patterns in the weather are referred to as the climate of different parts of the world. Much of the solid surface of the Earth is covered by soil, which is a mixture of pieces of rock of various sizes and the remains of organisms. Fertile soil also contains air, water, some chemicals from the decay of living things, particularly plants, and various living things such as insects, worms and bacteria. The solid material beneath the soil is rock. There are many different kinds of rock with different compositions and properties. The action of wind and water wears down rock gradually into smaller pieces – sand is made of small pieces of rock and silt of still smaller pieces. About two-thirds of the surface of the Earth is covered by liquid water, which is essential to life. Water is constantly recycled through processes involving evaporation from oceans and other surfaces, such as soil and plants, condensation in clouds and precipitation as rain, snow or hail.	
6 Our solar system is a very small part of one of billions of galaxies in the Universe *Our Sun and eight planets and other smaller objects orbiting it comprise the solar system. Day and night and the seasons are explained by the orientation and rotation of the Earth as it moves round the Sun. The solar system is part of a galaxy of stars, gas and*	There are patterns in the position of the Sun seen at different times of the day and in the shape of the Moon from one night to another.	The Earth moves round the Sun taking about a year for one orbit. The Moon orbits the Earth taking about four weeks to complete an orbit. The Sun, at the centre of the solar system, is the only object in the solar system that is a source of visible light. The Moon reflects light from the	

dust, one of many billions in the Universe, enormous distances apart. Many stars appear to have planets.		Sun and as it moves round the Earth only those parts illuminated by the Sun are seen. The Earth rotates about an axis lying north to south and this motion makes it appear that the Sun, Moon and stars are moving round the Earth. This rotation causes day and night as parts of the Earth's surface turn to face towards or away from the Sun. It takes a year for the Earth to pass round the Sun. The Earth's axis is tilted relative to the plane of its orbit round the Sun so that the length of day varies with position on the Earth's surface and time of the year, giving rise to the seasons.	
7 Organisms are organised on a cellular basis and have a finite life span *All organisms are constituted of one or more cells. Multi-cellular organisms have cells that are differentiated according to their function. All the basic functions of life are the result of what happens inside the cells which make up an organism. Growth is the result of multiple cell divisions.*	There is a wide variety of living things (organisms), including plants and animals. They are distinguished from non-living things by their ability to move, reproduce and react to certain stimuli.	To survive they need water, air, food, a way of getting rid of waste and an environment which stays within a particular range of temperature. Although some do not appear to be active, all will at some stage carry out the life processes of respiration, reproduction, feeding, excretion, growth and developments and all will eventually die.	
8 Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms *Food provides materials and energy for organisms to carry out the basic functions of life and to grow. Green plants and some bacteria are able to use energy from the Sun to generate complex food molecules. Animals obtain energy by breaking down complex food molecules and are ultimately dependent on green plants as their source of energy. In any ecosystem there is competition among species for the energy resources and the materials they need to live and reproduce.*	All living things need food as their source of energy as well as air, water and certain temperature conditions.	Plants containing chlorophyll can use sunlight to make the food they need and can store food that they do not immediately use. Animals need food that they can break down, which comes either directly by eating plants (herbivores) or by eating animals (carnivores) which have eaten plants or other animals. Animals are ultimately dependent on plants for their survival. The relationships among organisms can be represented as food chains and food webs. Some animals are dependent on plants in other ways as well as for food, for example for shelter and, in the case of human beings, for clothing and fuel. Plants also depend on animals in various ways. For example, many flowering plants depend on insects for pollination and on other animals for dispersing their seeds.	
9 Genetic information is passed down from one generation of organisms to another *Genetic information in a cell is held in the chemical DNA. Genes determine the development and structure of organisms. In asexual reproduction all the genes in the offspring come from one parent. In sexual reproduction half of the genes come from each parent.*	Living things produce offspring of the same kind, but offspring are not identical with each other or with their parents.	Plants and animals, including humans, resemble their parents in many features because information is passed from one generation to the next. Other features, such as skills and behaviour, are not passed on in the same way and have to be learned.	
10 The diversity of organisms, living and extinct, is the result of evolution	There are many different kinds of plants and animals in	We know about these from fossils. Animals and plants are classified into groups and subgroups	

All life today is directly descended from a universal common ancestor that was a simple one-celled organism. Over countless generations changes resulting from natural diversity within a species lead to the selection of those individuals best suited to survive under certain conditions. Species not able to respond sufficiently to changes in their environment become extinct.	the world today and many kinds that once lived but are now extinct.	according to their similarities. For example within the group of animals called birds, there are families of birds such as sparrow, and different kinds (species) within a family such as house sparrows, tree sparrows, and great sparrows. Organisms of the same species breed more of the same. Different species cannot interbreed to produce offspring that can reproduce. Although organisms of the same species are very similar they vary a little from each other. One of the results of sexual reproduction is that offspring are never exactly like their parents.	
11 Science is about finding the cause or causes of phenomena in the natural world *Science is a search to explain and understand phenomena in the natural world. There is no single scientific method for doing this; the diversity of natural phenomena requires a diversity of methods and instruments to generate and test scientific explanations. Often an explanation is in terms of the factors that have to be present for an event to take place as shown by evidence from observations and experiments. In other cases supporting evidence is based on correlations revealed by patterns in systematic observation.*		Science is about finding explanations for why things happen as they do or why they take a particular form, assuming that every event or phenomenon has a cause or causes and that there is a reason for the form things take. An explanation is not a guess; there has to be some basis for it. There are various ways of finding out what makes things work or why they happen. Careful observation, including measurement where possible, can suggest what may be happening. In other cases it is possible to do something to make a change and observe what happens. When this is done it is important to see that other things stay the same so that the result can only be the effect of changing one thing.	
12 Scientific explanations, theories and models are those that best fit the evidence available at a particular time *A scientific theory or model representing relationships between variables of a natural phenomenon must fit the observations available at the time and lead to predictions that can be tested. Any theory or model is provisional and subject to revision in the light of new data even though it may have led to predictions in accord with data in the past.*	Everyone can ask questions about things in the natural world and can do something to find answers that help explain what is happening.	In science explanations are sought through some kind of systematic inquiry that involves collecting data by observing or measuring features of the objects being studied or using data from other sources. Whether or not an effective explanation can be obtained depends on what data are collected and this is usually guided by having some theory or hypothesis about what might be happening.	
13 The knowledge produced by science is used in engineering and technologies to create products *The use of scientific ideas in technologies has made considerable changes in many aspects of human activity. Advances in technologies enable further scientific activity; in turn this increases understanding of the natural world. In some*	Technologies have been created by people to provide the things they need or can use, such as food, tools, clothes, somewhere to live and ways of communicating. All around us are examples	Technologies are developed using engineering, which involves identifying problems and using ideas of science and other ideas to design and develop the best possible solution. There are always different ways of approaching problems, so various possibilities need to be tried out. In	

areas of human activity technology is ahead of scientific ideas, but in others scientific ideas precede technology.	of how materials have been changed so that they can be used for certain purposes.	order to decide which is the best solution it is necessary to be clear about what the result is intended to be and so how success is to be judged. For instance, a solution to the problem of being able to see the back of your head would be different if a criterion for success is to leave your hands free.	
14 Applications of science often have ethical, social, economic and political implications *The use of scientific knowledge in technologies makes many innovations possible. Whether or not particular applications of science are desirable is a matter that cannot be addressed using scientific knowledge alone. Ethical and moral judgments may be needed, based on such considerations as justice or equity, human safety and impacts on people and the environment.*		The understanding of the natural world that is developed through science enables us to explain how some things work or phenomena occur. This understanding can often be applied to change or make things to help solve human problems. Whilst such technological solutions have improved the lives and health of many people in countries across the world, it has to be recognised that they may use materials from the natural world which may be in short supply or may be detrimental to the environment.	

University of Hertfordshire UH

Key text

Please purchase the book below, which will help you with your science subject knowledge and is an excellent text for you to use when preparing to teach each subject area. It will also help you to identify the links between different areas in the curriculum:

Peacock, G. A., Sharp, J., Johnsey, R. and Wright, D. (2017) Primary Science: Knowledge and Understanding. United Kingdom: Learning Matters

Peacock, G. Sharp, J. Johnsey, R., Sewell K., Wright, D. (2017) *Primary science : knowledge and understanding*. London: Leaning Matters, SAGE.
https://www.amazon.co.uk/Primary-Science-Knowledge-Understanding-Achieving/dp/1526410923/ref=dp_ob_image_bkIt
It can also be purchased as an e-book from Google books:
https://books.google.co.uk/books?id=DWoCDgAAQBAJ&printsec=frontcover&dq=peacock+primary+science+2017&hl=en&sa=X&ved=0ahUKEwil1NTU0fPbAhXKDsAKHQMZAHAQ6AEIJzAA#v=onepage&q=peacock%20primary%20science%202017&f=false

University of Hertfordshire UH

Section 4: Preparation for Developing Professional Practice

Task 1: Skills and qualities

The first module on the BEd programme is about encouraging you/students to become reflective practitioners. Through your/their reflections you/students will identify aspects for personal and professional development. Listed below are numerous skills and qualities which are essential for those beginning a career in teaching. Choose 2 attributes from the list and write a paragraph on each explaining why you feel confident in these and another 2 which you know are areas which you can work on. Each paragraph should include an example(s) from your experience/practice and a reference to related reading.

University of Hertfordshire UH

Skills and qualities

Patient	Like young people/children
Well organised	Fair
Able to establish discipline	Sense of humour
Persuasive	Sensitive
Assertive	Energetic
Team player	Flexible
Enthusiastic	Able to think on your feet
Creative	Good with time management
Imaginative	Committed to equal opportunities
Reliable	Good at listening
Resilient	Leadership qualities

Task 2: Statement of achievement for trainees with substantial classroom experience

If you have been employed as a classroom assistant or unqualified teacher, you will already have considerable knowledge and understanding of teaching and learning. This should be reflected in your record of observation/experience in school. The statement of achievement summarises your successes in the classroom.

Who should write it?
It should be written by a class teacher with whom you have worked, a member of the senior management team or the Head. A proforma is provided on the next page.

When should it be written?
It can be done at any time but it would be most appropriate towards the end of the summer term before you start your training course. This ensures that the comments are as up to date as possible.

What do I do with it?
You will need to keep a copy of this in your file to share with your University tutor and school mentor as you start your first school placement. It will enable appropriate targets to be set for your development which take account of your previous experience.

University of Hertfordshire UH

STATEMENT OF ACHIEVEMENT/REPORT FOR ENTRANTS WITH SUBSTANTIAL PRIOR EXPERIENCE IN THE PRIMARY CLASSROOM

Please could you provide a brief report about the entrant's achievements while employed in your school. This information enables the University to take account of relevant previous experience when the first school-based training is undertaken.

Entrant's name
Role in school (e.g. classroom assistant)
School
1. **Professional Values and Practice** (e.g. relationships with pupils and other adults; contribution to the life of the school etc.)
2. **Knowledge and ability to plan for learning** (Please indicate subject areas, whether this was for a whole class or group and whether planning was independent or within a team)
3. **Knowledge and ability to assess pupils' learning**
4. **Teaching and class management including behaviour management.** (Please indicate whether this is usually with the whole class or groups)
Signature and position in school. **Date**