Computing

Policy

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Written By	Miss J Johndrow, Mrs E Wanglin,
Ratified by Governing Board	
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Signed – Headteacher/ Chair of Governors	

Introduction

The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Beacon Academy, we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive, approach to: the learning how computer systems work; the use of IT and the skills necessary to become digitally literate and participate fully in the modern world. The purpose of this policy is to state how the academy intends to make this provision.

Legislation

This policy has been written in response to National Curriculum in England: framework for Key Stage 1 to 4 (2014). A copy of this document can be accessed by following the link below:

PRIMARY_national_curriculum_-_Computing

Aims

The academy's aims are to:

- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils.
- Develop pupil's computational thinking skills that will benefit them throughout their lives.
- Meet the requirements of the national curriculum programmes of study for computing in Early Years, KS1 & KS2.
- To respond to new developments in technology.
- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- To enhance and enrich learning in other areas of the curriculum using IT and computing.
- To develop an understanding of how to use computers and digital tools safely and responsibly.

Rationale

Beacon believes that IT, computer science and digital literacy:

- Are essential life skills necessary to fully participate in the modern digital world.
- Allows children to become creators of digital content rather than simply consumers of it.
- Provides access to a rich and varied source of information and content.
- Communicates and presents information in new ways, which helps pupils understand, access and use it more readily.
- Can motivate and enthuse pupils.
- Offers opportunities for communication and collaboration through group working both inside and outside of the academy.
- Has the flexibility to meet the individual needs and abilities of each pupil (SEN, Pupil Premium and more able pupils).

The Curriculum

Early Years

The Early Years Curriculum for Computing aims to ensure that all pupils:

- Acquire skills in operating some digital equipment.
- Operate mechanical toys, equipment and recognise their cause and effect.
- Use simple programs and interact with software.

Early Years use the September 2021 revised Development matters/ Birth to 5 document to plan adult led lessons and independent activities for the children to access through continuous provision. The different aspects of Computing are encompassed within Understanding of the World in the Foundation Stage Curriculum; however elements can also be found in other areas of learning (Physical development, Expressive arts and design and Literacy).

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play, helping to develop small motor skills. They will safely explore how things work and remember to recall rules (and the importance of them) without an adult helping as Computing is not just about computers; a sensible amount of screen time should be considered. Our Early years learning environments feature IT based resources such as telephones and walkie talkies in the role play areas for children to experience the real world. Children also use remote control cars, Beebots, microphones, cameras, VR units, torches, I-Pads and the Interactive Whiteboard. Children gain confidence, control and language skills through opportunities such as 'programming' toys/object to develop their positional language, and create pieces of artwork using drawing tools on the IWB to express feelings and ideas by experimenting with texture, colour, design and function.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language (EAL). We encourage our children to be resilient learners.

National Curriculum

The national curriculum for computing aims ensure that all children: can understand and apply the principles and concepts of computer science, including abstraction, logic, algorithms and data representation.

Key Stage 1

By the end of key stage 1 pupils should be taught to:

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Write and test simple programs.
- Use logical reasoning to predict and computing the behaviour of simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond the academy.

Key Stage 2

By the end of key stage 2 pupils should be taught to:

- Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs.
- Use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs.
- Understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration.

- Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Resources and access

The academy acknowledges the need to continually maintain, update and develop its resources and to make progress towards consistent, compatible computer systems by investing in resources that will effectively deliver the objectives of the National Curriculum and support the use of IT, computer science and digital literacy across the academy. Teachers are required to inform the ICT co-ordinator of any faults as soon as they are noticed.

Schemes of work:	**Resources:**
• Mini Mash (KS1) • Project Evolve • Teach Computing	• 30 Chrome books per Year group • 15 I-Pad for child use • Teacher I-Pad • Visualizer • 32 VR Headsets • 15 Beebots

VR Headsets

What are VR headsets?

A virtual reality headset (or VR headset) is a head-mounted device that provides virtual reality for the wearer.

What do VR Headsets do?

VR headsets replace the user's natural environment with virtual reality content, such as a movie, a game or a pre-recorded 360-degree VR environment that allows the user to turn and look around, just as in the physical world.

Please see Appendix 1 for User Guide

What are the benefits of VR Headsets?

VR can be beneficial for pupils in several ways. For example, they can access real-world experiences in a variety of contexts. VR is inherently safe, as pupils can carry out dangerous experiments or explore challenging environments from the safety of the classroom.

Please see Appendix 2 for Letter sent to Parents regarding VR Headsets

Computing network infrastructure and equipment has been sited so that:

- Every classroom from nursery to Y6 has a computer connected to the academy network and an interactive whiteboard with sound and video facilities.
- Every classroom from YR-Y6 has a visualizer so that pupils work can be shared to all using the IWB.
- Internet access is available in all classrooms.
- Laptops, Chrome books and I-Pads are available for use throughout the academy day as part of computing lessons and for cross-curricular use.
- Year 1-Year 6 have access to 30 Chrome books per year group. These are stored in a trolley in the stock cupboards.

- Year 1-Year 6 have access to 32 VR headsets which can be used 15 minutes per week to enhance the curriculum
- Pupils may use IT and computing independently, in pairs, alongside a TA or in a group with a teacher.
- The academy has a link governor that has a particular interest and understanding of computing and IT and may partake in lesson.

Health and Safety

The academy is aware of the health and safety issues involved in children's use of IT and computing. All fixed electrical appliances in the academy are tested by a Local Authority contractor every five years and all portable electrical equipment in the academy is tested by an external contractor every twelve months.

It is advised that staff should not bring their own electrical equipment in to the academy but, if this is necessary, equipment must be PAT tested before being used in the academy. This also applies to any equipment brought in to the academy by, for example, visitors running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. to advise those people.

All staff should visually check electrical equipment before they use it and take any damaged equipment out of use. Damaged equipment should then be reported to the computer technician, subject coordinator or head teacher who will arrange for repair or disposal.

Planning

Computing is taught discreetly and weekly in Years 1-6. Where possible across the curriculum other subjects should involve ICT and take into account Online Safety.

The academy uses several resources to Teach Computing- our specially designed MTP and Big Picture sheets meet the objectives of the National Curriculum for Computing and show clear progression across the year groups. The children also have a username and password to use Google Classroom inside and outside the classroom. Furthermore, all children have a login for TT Rockstars to develop their knowledge of times tables, which is accessed during lessons and at home.

When teaching, teachers must take into account all children's learning needs including SEND, EAL and more able pupils to ensure all lessons are inclusive. Teachers will plan where necessary, how to support individuals or groups of pupils to enable them to participate effectively in the curriculum and assessment activities. During any teaching activities, teachers should consider any special arrangements which could be made available to support individual pupils. This is in accordance with the academy inclusion policy. These children should be identified and discussed at pupil progress meetings to ensure that appropriate provisions and/or interventions are effective.

Assessment and record keeping

Teachers regularly assess progress through observations and evidence that can be stored online or be printed out for the class book. The key objectives for Computing are taken from the National Curriculum to assess computing each term.

Records of progress in Computing;

- Children in Early Years have photographs and evidence in individual Learning Journeys using digital equipment and completing independent computing activities.

- For Year 1-6 work is stored on the T-Drive or Google Classroom with screen shots and explanations of what has been taught.
- Each class from Year 1-6 has a Computing folder for evidence of children's work.
- At the start of each unit is a big picture sheet with the Learning objectives- these are shared with the children.
- At the end of each topic the children complete a short quiz to show their knowledge and understanding of what has been taught during the computing unit.
- Examples of children's work, parent workshops, pupil voice/ evaluations, photographs are celebrated in the Year group book.

Inclusion

Teachers set high expectations for all pupils. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils
-Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with SEN
- Pupils with English as an additional language (EAL).

At Beacon Academy, we believe that all children have the right to access IT and computing. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the computing curriculum for some pupils.

We teach IT and computing to all children, whatever their ability. Computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of computing we provide opportunities that enable all pupils to make progress. We do this by setting suitable challenges and responding to each child's individual needs. Where appropriate IT can be used to support SEN children on a one-to-one basis where children receive additional support.

(This policy should be read in conjunction with the SEN policy.)

Roles and Responsibilities

The role of the Head Teacher

The Head teacher is responsible for ensuring that this policy is adhered to, and that:

- All required elements of the Computing Curriculum, and additional provision which the academy chooses to offer, have aims and objectives which reflect the aims of the academy and indicate how the needs of individual pupils will be met.
- The amount of time provided for teaching the required elements of the curriculum is adequate and is reviewed by the Governing Board.
- The academy's procedures for assessment meet all legal requirements.
- The Governing Board is fully involved in decision-making processes that relate to the breadth and balance of the curriculum.
- The Governing Board is advised on targets within the Academy Development Plan (SDP) in order to make informed decisions.
- The curriculum caters for all pupils with different abilities and needs

The role of the Subject Coordinator

There is a computing subject coordinator who is responsible for the implementation of computing policy across the academy. Their role is to:

- Offer help and support to all members of staff (including teaching assistants) in their teaching, planning and assessment of computing.
- Provide colleagues opportunities to observe good practice in the teaching of computing.
- Maintain resources and advise staff on the use of digital tools, technologies and resources.
- Monitor classroom teaching or planning following the academys monitoring programme.
- Monitor the children's progression in computing, looking at examples of work of different abilities.
- Manage the computing budget.
- Keep up-to-date with new technological developments and communicate information and developments with colleagues.
- Lead staff training on new initiatives.
- Attend appropriate in-service training.
- Have enthusiasm for computing and encourage staff to share this enthusiasm.
- Keep parents and governors informed on the implementation of computing in the academy.
- Liaise with all members of staff on how to reach and improve on agreed targets.
- Help staff to use assessment to inform future planning.

The role of the class teacher

Individual teachers will be responsible for ensuring that pupils in their classes have opportunities for learning computing and use their knowledge, skills and understanding of computing across the curriculum. They will plan and deliver the requirements of the National Curriculum for Computing to the best of their ability. We set high expectations for our pupils and provide opportunities for all to achieve, including girls and boys, pupils with special educational needs, pupils with disabilities, pupils from all social and cultural backgrounds, and those from diverse linguistic backgrounds.
The class teacher's role is a vital role in the development of computing throughout the academy and will ensure continued progression in learning and understanding, and create effective learning environments.

The class teacher will also:

- Use a variation of technology throughout the curriculum.
- Secure pupil motivation and engagement.
- Provide equality of opportunity using a range of teaching approaches and techniques.
- Use appropriate assessment techniques and approaches.
- Set suitable targets for learning as outlined in the inclusion policy.

Security

We take security very seriously. As such:

- The computing technician will be responsible for regularly updating anti-virus software.
- The use of IT and computing will be in line with the academy's 'acceptable use policy'. All staff, volunteers and children must sign a copy of the academy's AUP.
- Parents, staff and pupils will be made aware of the 'acceptable use policy' at academy entry and KS2.
- All pupils and parents will be aware of the academy rules for responsible use of IT and computing and the internet and will understand the consequence of any misuse.

(This policy should be read in conjunction with the Online policy.)

Safeguarding

Online Safety

At Beacon Academy, we believe that the use of technology in the academy brings great benefits. To live, learn and work successfully in an increasingly complex and information-rich society, our children must be able to use technology effectively. The use of these exciting and innovative technology tools in the academy and at home has been shown to raise educational standards and promote pupil achievement. Yet at the same time we recognise that the use of these technologies can put young people at risk within and outside the academy.

We have developed a separate policy which details our approach to online safety and safeguarding children and staff when using technology both within and beyond the academy. This policy has been developed according to local authority guidance.

Filtering and Monitoring

Filtering and monitoring systems are used to keep pupils safe when using the academy IT system.
Filtering systems: block access to harmful sites and content.
Monitoring systems: identify when a user accesses or searches for certain types of harmful content on the academy and college devices (it doesn't stop someone accessing it). The academy is then alerted to any concerning content so you can intervene and respond.

Cyber Security

Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks. These cyberattacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users via ransomware; or interrupting normal business processes.

Artificial Intelligence

As educators, we know that our job is to ensure children are ready to participate in a workforce that will undoubtedly include AI tools. Integrating technology into daily practice within the classroom is no longer a choice but a prerequisite for preparing children for a tech-infused future.

(This policy should be read in conjunction with the Online Safety policy, Artificial Intelligence Policy, Digital Leadership Policy, Child Protection and Safeguarding Policy.)

Cross curricular links

As a staff, we are all aware that IT and computing skills should be developed through core and foundation subjects. Where appropriate, IT and computing should be incorporated into all subjects and topics. IT and computing should be used to support learning in other subjects as well as developing computing knowledge, skills and understanding. Our academy provides pupils with opportunities to enrich and deepen learning using cross-curricular approaches.

English

IT is a major contributor to the teaching of English. Through the development of keyboard skills and the use of computers, children learn how to edit and revise text. They learn how to improve the presentation of their work by using desk-top publishing software.

Mathematics

Many IT activities build upon the mathematical skills of the children. Children use computing in mathematics to collect data, make predictions, analyse results, and present information graphically. They also acquire measuring techniques involving positive and negative numbers, and including decimal places.

Spiritual, moral, social and cultural development

Computing makes a contribution to the teaching of SMSC and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and

email. Through the discussion of moral issues related to electronic communication, children develop a view about the use and misuse, and they also gain a knowledge and understanding of the interdependence of people around the world

Parental involvement

Parents are encouraged to support the implementation of IT and computing where possible by encouraging use of IT and computing skills at home for pleasure, through home-learning tasks and use of the academy website. Parents will be made aware of issues surrounding e-safety and encouraged to promote this at home.

Staff Training

The computing coordinator will assess and address staff training needs as part of the annual development plan process or in response to individual needs and requests throughout the year so that they can best teach the Computing curriculum planning in place.

Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the subject coordinator.

Teachers will be encouraged to use IT and computing to produce plans, reports, and communications and teaching resources.

Homework Projects

Every year group from Year 1- 6 will have a Computing project linked to their current computing unit to develop curiosity for a particular area of IT. These homework projects are celebrated in the academy and photographs are recorded in the class books. Some of these tasks will involve research or using a specific game which is specified by the class teacher. These homework projects are uploaded onto the website on each year group's class page.

Links with other policies

This policy links to the following policies and procedures:

- Artificial Intelligence Policy
- Anti-bullying Policy
- Child Protection and Safeguarding Policy
- Digital Leadership Policy
- Early Years Policy
- Equality Information and Objectives
- English as and Additional Language (EAL) Policy
- Online Safety Policy
- More Able, gifted and talented Policy (MAGT)
- Mobile Phone Policy
- SEND Policy, SEND Information Report, SEND Offer

Policy monitoring

The Computing Co-ordinator at Beacon Academy is responsible for the monitoring and implementation of this policy. The computing coordinator works closely with the digital leader, Miss Johndrow and Curriculum leader, Mrs Wanglin to implement the policy. The subject coordinator reports to the Head teacher on the effectiveness of the policy and to the Governing Body, upon its review.

Appendix 1
VR Headset User Guide





VH Headsets

Expectations:

VR Headsets to be used a minimum of once per week.

A playlist will be created per subject a minimum of twice per year group.

VR Headsets information:

In the bottom right corner of each track it specifies the category using an image.

Video	Picture	3d model	Scene & Interactive

Children should:

- ✓ Remain seated at ALL times when wearing the VR Headsets.
- ✓ Wear them for no longer than 15 minutes.
- ✓ Remove the VR headset when the screen goes black as the teacher has added them into the waiting room.
- ✓ Handle the VR headsets with care.

If the rules are not followed you may be at risk of being banned using the VR headsets.

Instructions for staff:

VR headsets can only be used **once a day** and no more than **twice a week**.

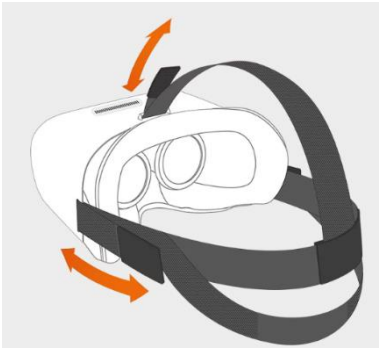
An adult must clean every VR headset after every use before they are added back into the charging unit.

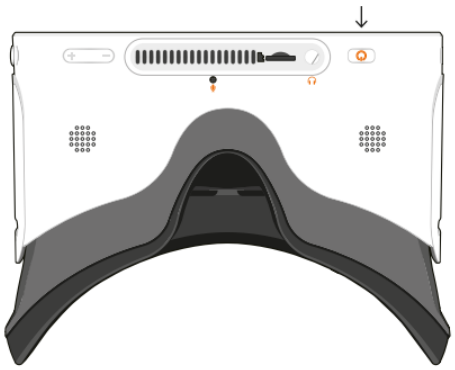
- Clean the headset and hand controller with a skin friendly non-alcoholic-antibacterial wipe
- Clean the lenses with a dry microfiber cloth

The VR headsets face padding will be washed at the end of every month (once every 4 weeks)

Step by step Guide:

1. First you need to readjust the straps so the VR headset fits securely.





2. Take the VR headset off and press and hold the power button which is on the bottom of the headset while looking through the lens to turn the VR headset on. *(The screen will go orange after about 3 seconds)*



3. *Attach your hand controller using the USB-A port to the left side of the VR headset.*

4. *Now you can put on your VR headset*

Appendix 2
Letter to Parents

Dear Parents and Carers,

We are excited to share some wonderful news with you regarding a recent addition to our academy's resources. At Beacon Academy, we are committed to providing an enriching educational experience for our children, and to further this goal, we have acquired 32 virtual reality headsets (VR) designed specifically for use in our primary classroom environment.

These virtual reality headsets will offer numerous benefits to your child's learning journey:

1. Immersive Learning: Virtual reality enables children to immerse themselves in subjects, bringing lessons to life in an engaging and memorable way. Children will be able to sit next to dinosaurs, have great white sharks swim over their heads, explore ancient civilisations, hold ancient artefacts or even a heart in their hands and experience impossible adventures.

2. Enhanced Understanding: Complex concepts become more accessible as children can visualise abstract ideas in 3D, fostering a deeper understanding of the curriculum.

3. Cultural Exploration: VR allows children to explore different cultures, places, and historical events, broadening their horizons and promoting cultural awareness.

4. Increased Engagement: Learning through VR is interactive and fun, encouraging active participation and curiosity in our young learners.

All of these will benefit and enhance your child's learning in the safety of the classrooms at Beacon Academy.

However, we understand the importance of ensuring the safety and well-being of our children when using these headsets. Here is how we will ensure safe and responsible use:

1. Time Limit: Children will be limited to a maximum of 15 minutes per session when using the virtual reality headsets. Typically, this will occur once a week as part of our curriculum.

2. Health Monitoring: It is crucial that parents and carers inform academy staff if their child is tired, under emotional stress or anxiety, or suffering from flu, headaches, earaches, or migraines. In such cases, we will recommend that the child does not use the headsets to prevent any discomfort.

3. Medical Conditions: Children who have a history of seizures, loss of awareness, or symptoms linked to an epileptic condition will not be permitted to use the headsets due to potential health risks.

To reduce the risk of injury or discomfort teaching staff will always follow these instructions and observe these precautions while using the headset:

If any pupil complains of the following symptoms:

1 Loss of awareness; eye strain; eye or muscle twitching; involuntary movements; altered, blurred, or double vision or other visual abnormalities; dizziness; disorientation; impaired balance; impaired hand-eye coordination; excessive sweating; increased salivation; nausea; light-headedness; discomfort or pain in the head or eyes; drowsiness; fatigue; or any symptoms similar to motion sickness, users will be discontinued from using the headset for that session.

2 Use the headsets only in the safe environment of the classroom: the headset produces an immersive virtual reality experience that distracts the user from and completely blocks the view of their actual surroundings.

3 Ensure that users are always aware of their surroundings before beginning use and while using the headset.

4 Users must only place the headsets on when seated. Standing whilst wearing the headsets is not permitted as use of the headset may cause loss of balance.

5 Remind pupils that the objects that they see in the virtual environment do not exist in the real environment, so children must not sit or stand on them or use them for support.

6 Ensure that users are not near other people, objects, stairs, open doorways, windows, furniture, light fixtures or other items that they can bump into or knock down when using—or immediately after using—the headset.

7 Remind pupils that while using the headset users may be unaware that people may enter their immediate area.

8 Make sure the headset is level and secured comfortably to the user's head,

9 For first time use, users will be eased into the use of the headset experience to allow their bodies to adjust. They will use them for only a few minutes at a time at first, and only increase the amount of time using the headset gradually as they grow accustomed to virtual reality. Looking around when first entering virtual reality can help users adjust to any small differences between their real-world movements and the resulting virtual reality experience.

10 If using headphones, listening to sound at high volumes can cause irreparable damage to a user's hearing. Background noise, as well as continued exposure to high volume levels, can make sounds seem quieter than they actually are. Due to the immersive nature of the virtual reality experience, users will not use the headset with the sound at a high volume so that pupils can maintain an awareness of their surroundings and reduce the risk of hearing damage.

11 Teachers will check each time they use the headsets to ensure that cables are not damaged or any wires are exposed.

12 In the case that a device is broken or damaged, pupils will not be permitted to use that device.

13 To avoid transferring contagious conditions like conjunctivitis (pink eye), the teacher will be responsible for cleaning the headset at the end of each session with skin-friendly non-alcoholic antibacterial wipes and use a dry microfiber cloth for the lenses.

We believe that these virtual reality headsets will greatly enhance the educational experiences of our pupils here at Beacon Academy, making learning more engaging and effective. If you have any concerns or questions about your child's use of the headsets, please do not hesitate to reach out to us.

Thank you for your continued support in providing the best possible education for your child. We look forward to embarking on this exciting virtual journey of learning together.
If you do not wish for your child to use the VR headsets within the curriculum, we are offering an opt out system-please contact the academy office via phone or email to do so.

Warm regards,

Claire Chandler
Headteacher