**Newquay Junior Academy - Autumn Sequence - Year 5**

**‘SPACE LAB – ONE GIANT STEP’**

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| **SCIENCE****Prior knowledge...** We have four seasons (autumn, winter, spring and summer). The Sun is a source of light, but the Moon is not. Know that a shadow is caused when an object blocks light from passing through it. The properties of a sphere. |  | **COMPUTING – FIRST HALF TERM****Prior knowledge…** Learners apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They learn that the World Wide Web is part of the internet and are given opportunities to explore the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally, they evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.   |  | **COMPUTING – SECOND HALF TERM****Prior knowledge…** Programming A—This unit looks at repetition and loops within programming. Pupils create programs by planning, modifying, and testing commands to create shapes and patterns. They use Logo, a text-based programming language.   |  |
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| **INTENT**Earth and SpacePupils will understand the main bodies that make up our known Solar system and explain that the planets orbit around the Sun.They will be able to explain how day and night using the idea of the Earth’s rotation.ForcesPupils will understand a range of forces including gravity, air and water resistance. They will also investigate levers, gears and pulleys and work scientifically, testing water resistance and the effect of levers. |  | **INTENT**Pupils will develop their **understanding of computer systems** and **how information is transferred between systems and devices**. Learners consider **small-scale systems** as well as **large-scale systems**. They **explain the input, output, and process aspects of a variety of different real-world systems**.   |  | **INTENT**Pupils will use **physical computing** to explore the concept of selection in programming using the **Crumble** programming environment. Pupils are introduced to a **microcontroller** (Crumble controller) and learn how to **connect and program components**. Pupils are introduced to **conditions as a means of controlling the flow of actions**and explore how these can be used in **algorithms and programs with an input device** (push switch). Pupils make use of their knowledge **of repetition and conditions** when **introduced to the concept of selection**(through the ‘if... then...’ structure) and **write algorithms and programs**that utilise this concept.  |  |
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| **VOCABULARY/STICKY KNOWLEDGE**Earth & SpaceEarth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation, waxing, waning, crescent, gibbous. Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, planets, solar system, day, night, rotate, orbit, axis, spherical, geocentric, heliocentric.Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance. Objects with larger masses exert bigger gravitational forces. Objects like planets, moons and stars spin/rotate.ForcesForce, gravity, attraction, orbit, trajectory, resistance, friction, particles, variables. Constant, up thrust, buoyancy, displace, levers, decrease, effort, fulcrum, simple machine.That gravity acts to pull objects down to the centre of Earth. The Sun’s gravity attracts the planets and keeps them in their orbits in the Solar System. Friction will cause an object to heat up and slow down. An object displaces the water, the more it displaces, the more buoyant it is. Levers, pulleys and gears are all examples of simple machines. They all act to decrease the effort it takes to move an object. |  | **VOCABULARY/STICKY KNOWLEDGE**Computer system, information transfer, small-scale systems, large-scale systems, input, output, real-world systems, online collaboration  |  | **VOCABULARY/STICKY KNOWLEDGE**Crumble, micro-controller, components, conditions, algorithm, selection, programs  |  |
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| **SEQUENCE OF LESSONS:**Earth and SpaceSpace planetarium visit 1 - To identify different planets which make up our solar system.2 - To describe the sun, Earth and moon as approximately spherical bodies.3 - To describe the movement of the Earth and other planets relative to the sun in the solar system.4 - Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. Visit to the SpaceportForces1 – To learn about gravity.2 – To investigate air resistance.3 – To learn about floating and sinking with reference to water resistance.4 – To investigate water resistance, keeping mass constant.5 – To investigate up thrust, changing the shape and size of the object. |  | **SEQUENCE OF LESSONS:**1.To explain what is meant by ‘being sceptical’; I can give examples of when and why it is important to be ‘sceptical’.2.To explain that computers can be connected together to form systems 3. To recognise the role of computer systems in our lives 4. To recognise how information is transferred over the internet 5 .To explain how sharing information online lets people in different places work together6 .To contribute to a shared project online7. To evaluate different ways of working together online |  | **SEQUENCE OF LESSONS:**1.To identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads.2.To control a simple circuit connected to a computer 3. To write a program that includes count-controlled loops4. To explain that a loop can stop when a condition is met5. To explain that a loop can be used to repeatedly check whether a condition has been met6. To design a physical project that includes selection7.To create a program that controls a physical computing project |  |
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| **OUTCOME/COMPOSITE**Earth and SpacePupils will have practically investigated the structure of the known solar system and carried out a series of investigations to enable them to explain how night and day occur. They will complete a practical investigation exploring the surface of the moon and how craters are formed, this will result in them making their own lunar landers.ForcesPupils will complete a series of investigations to learn about forces within the context of space. |  | **OUTCOME/COMPOSITE**Pupils will take part in a collaborative online project with other class members and develop their skills in working together online.   |  | **OUTCOME/COMPOSITE**Pupils will design and **make a working model of a Mars Rover** that incorporates their understanding of how the microcontroller and its components are connected, and how selection can be used to control the operation of the model.  |  |

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| **RELIGIOUS EDUCATION – FIRST HALF TERM****Prior knowledge...** This half term of RE will draw on children’s understanding of **Christianity** from **KS1, Y3** and **Y4****Y3** (Units L2.1, L2.2 & L2.5)**Y4** (Units L2.3, L2.4, & L2.6)  |  | **RELIGIOUS EDUCATION – SECOND HALF TERM****Prior knowledge...** This half term of RE will draw on children’s understanding of **Christianity** from **KS1, Y3, Y4** and **Y5.****Y3** (Units L2.1, L2.2 & L2.5) **Y4** (Units L2.3, L2.4 & L2.6) **Y5** (Unit U2.2).  |  | **PHYSICAL EDUCATION – FIRST HALF TERM**Prior knowledge… To apply and develop fundamental skills learnt in Years 3 and 4 in a hockey specific context. To understand the rules and be able to co-operate in a team situation. Some students will be able to develop tactics and strategies. |  |
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| **INTENT****Christianity (Unit U2.2)****Key Question: Creation and Science: conflicting or complementing? (Creation)** |  | **INTENT****Christianity (Unit U2.3)****Key Question: Why do Christians believe that Jesus was the Messiah? (Incarnation)** |  | **INTENT**In HOCKEY, pupils will apply and develop fundamental skills learnt in Years 3 and 4 in a hockey specific context. They will understand the rules and be able to co-operate in a team situation. Some students will be able to develop tactics and strategies. |  |
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| **VOCABULARY/STICKY KNOWLEDGE****Christian:** Someone who follows the Christian religion.**God:** the all-powerful and all-loving being that Christians believe created the world and everything in it**Jesus:** the son of God, a person who was both God and man, the Messiah sent by God to save the human race.**Genesis 1:** A poem found the Old Testament of the Bible explaining the creation of the universe.Creation: The second key concept in the big frieze – it describes how the world was created.**Big Bang theory:** A scientific explanation of how the universe was created (cosmologists). |  | **VOCABULARY/STICKY KNOWLEDGE****Messiah:** The figure promised by God to the Jews for the salvation of the world (the Anointed One).**Saviour:** Christians refer to Jesus as the Saviour, they are referring to the belief that he gave up his own life to save humans from their sins.**Incarnation:** The believe that God took human form by becoming Jesus. It literally means ‘to take on flesh’. For Christians, the incarnation shows that Jesus was fully God and fully human.**Exile:** A punishment that God has used from the very beginning (Adam and Eve). It means being forced to live away from one's native country or home, especially as a punishment.**Anointed:** A person made holy in a religious ceremony that involves putting holy water or oil on them.**Eternal:** God created time and is not limited by it – God does not get old like human beings.**Prophet**: One who speaks on behalf of a God or who is divinely inspired to reveal the will of a God.**Prophecy:** A statement about what will happen in the future. Only God knows for sure what the future will be like. |  | **VOCABULARY/STICKY KNOWLEDGE** Invasion game, dribble, push pass, tackle, space, position |  |
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| **SEQUENCE OF LESSONS:**1. To understand the Christian view of how the universe was created, according to Genesis.2. To understand the scientific belief of how the universe was created.3. To recognise and compare the religious and scientific views, including the concept of Christian scientists.4. To identify who is right, Religion or Science.5. To consider how to make the world a better place. |  | **SEQUENCE OF LESSONS:**1. To understand what incarnation means.2. To identify the qualities of a ‘Messiah’.3. To investigate whether Jesus the hoped-for Messiah.4. To recognise how Jesus is shown to be the saviour.5. To identify why Christians believe Jesus to be the Messiah. |  | **SEQUENCE OF LESSONS:**1. To acquire skills to dribble with the correct technique.
2. To understand when to use each type of pass.
3. To understand where to shoot from and the type of shot you should make.
4. To be able to effectively protect the ball when it is in your possession.
5. To apply all skills learnt with the ability to reflect on individual and team performance.

To apply all skills in games with rules. |  |
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| **OUTCOME/COMPOSITE**Pupils to produce a poster/booklet to summarise how Christians believe the universe was created compared to what Scientists believe – including similarities and differences. |  | **OUTCOME/COMPOSITE**Pupils to use your knowledge of the qualities of a Messiah, to produce a ‘Wanted Poser’ to find a new Messiah. |  | **OUTCOME/COMPOSITE**Pupils will be able to apply skills in High 5 netball games in line with the rules of the game.  |  |

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| **PHYSICAL EDUCATION – SECOND HALF TERM**Prior knowledge – To be able to identify sports that are invasion games. Know it is important to work as a team to achieve the desired outcome. Be able to pass using a solid technique. Understand the concept of ‘attack’ and ‘defence’. Be able to evaluate team performance and suggest ways to improve. Understand the concept of spatial awareness.  |  | **PSHE – FIRST HALF TERM**Prior knowledge...• Know their attitudes and actions make a difference to the class team. |  | **PSHE – SECOND HALF TERM**Prior knowledge... know about judging people by their appearance, first impressions and what influences their thinking on what is normal. |  |
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| **INTENT**In NETBALL, pupils will apply and develop fundamental skills they learnt in Years 3 and 4 in a netball specific context. They will understand the rules and be able to co-operate in a team situation. Some students will be able to develop tactics. |  | **INTENT****Pupils will learn and t**alk about their rights and responsibilities as a member of their class, school, wider community and the country they live in. |  | **INTENT**Pupils will know:• Know what culture means • Know that differences in culture can sometimes be a source of conflict • Know what racism is and why it is unacceptable |  |
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| **VOCABULARY/STICKY KNOWLEDGE**Agility. Chest Pass. Bounce Pass. Shoulder Pass. Obstruction. Footwork. Contact. Centre Pass |  | **VOCABULARY/STICKY KNOWLEDGE**Opportunities, Education, Empathise, Learning Charter, Obstacles, Cooperation, Collaboration, Legal, Illegal, Lawful, Laws, Participation, Motivation, Democracy, Decision, Proud. • Know their place in the school community•Know what democracy is (applied to pupil voice in school) |  | **VOCABULARY/STICKY KNOWLEDGE**Culture, Conflict, Difference, Similarity, Belong, Culture Wheel, Racism, Colour, Race, Discrimination, Ribbon, Bullying, Rumour, Name-calling, Racist, Homophobic, Cyber bullying, Texting, · Know external forms of support in regard to bullying e.g. Childline· Know what racism is and why it is unacceptable |  |
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| **SEQUENCE OF LESSONS:**1. To acquire skills to perform the three different types of passes.2.To be able to catch and pass whilst using the correct footwork.3. To acquire skills to shoot using the correct technique.4.To be able to explain what ‘getting free’ means. 5.To understand how to defend in line with the rules. 6. To apply all skills in games with rules. |  | **SEQUENCE OF LESSONS:**1. To think about our year ahead 2. To understand being a citizen of my country 3. To understand the concept of personal responsibilities 4. To discuss and understand rewards and consequences 5. To discuss and develop our class ’Learning Charter’ |  | **SEQUENCE OF LESSONS:**1. To develop an understanding of different cultures  2. To know what racism is  3. To understand how rumours and name-calling can lead to bullying  4. To identify different types of bullying  5. To consider the question: Does money matter? |  |
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| **OUTCOME/COMPOSITE**Pupils will be able to apply skills in High 5 netball games in line with the rules of the game.  |  | **OUTCOME/COMPOSITE**Pupils will understand how democracy and having a voice benefits the school community and know how to participate in this. |  | **OUTCOME/COMPOSITE** Pupils will explore culture and cultural differences; link this to racism; talk about what it is and how to be aware of their own feelings towards people from different cultures. |  |

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| **DESIGN TECHNOLOGY****Prior knowledge...** Pupils can:Work independently to produce an accurate, functioning car chassis.Design a shape that is suitable for the project.Attempt to reduce air resistance through the design of the shape.Produce panels that will fit the chassis and can be assembled effectively using the tabs they have designed.Construct car bodies effectively.Conduct a trial accurately and draw conclusions and improvements from the results. |  | **MUSIC****Prior knowledge…*** The group of pitches in a song is called its ‘key’ and that a key decides whether a song sounds happy or sad.
* Different notes have different durations, and that crotchets are worth one whole beat.
* ‘Reading’ music means using how the written note symbols look and their position to know what notes to play.
* Written music tells you how long to play a note for.
 |  | **TRIPS & VISITORS:*** **Visit to Spaceport, Cornwall**
* **Guest speaker - Head of Spaceport, Cornwall**
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| **INTENT****Electrical systems: Electronic pop-up card**To design and make a electrical Christmas card with a pop-up element. |  | **INTENT**To immerse in, understand a play Blues music.  |  |  |
|  |  | VOCABULARY/STICKY KNOWLEDGE |  |  |  |
| **VOCABULARY/STICKY KNOWLEDGE**Aesthetic, design, design brief, target audience electricity, buzzer, battery, cell, component, conductor, LED, switch, series circuit, pop-up |  |  **VOCABULARY/STICKY KNOWLEDGE** Blues, chord, 12-bar Blues, bar, scale, Blues scale, bent notes, ascending scale, descending scale, improvisation* A chord is the layering of several pitches played at the same time.
* 12-bar Blues is a sequence of 12 bars of music, made up of three different chords.
* ‘Blues’ music aims to share feelings and blues songs tend to be about sadness or worry.
* A ‘bent note’ is a note that varies in its pitch, e.g. the pitch may slide up or down.
 |  | **READING OPPORTUNITIES ACROSS THE CURRICULUM:** Hidden figures Counting on Katherine |  |
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| **SEQUENCE OF LESSONS:****Lesson 1: Design brief** To identify a target audience for a greetings card and write a short specification. To research a range of cards to inform design ideas.**Lesson 2: Design**To design an electrical greetings card with a pop-up element**Lesson 3: Making the circuit**To build an LED series circuit**Lesson 4: Making the card**To make a card design which includes an inside pop-up element. |  | **SEQUENCE OF LESSONS:****Lesson 1: History of the Blues**To know the key features of Blues music. **Lesson 2: Playing a chord**To play the first line of the 12-bar Blues. **Lesson 3: The 12-bar Blues**To be able to play the 12-bar Blues.**Lesson 4: Blues scale**To be able to play the Blues scale. **Lesson 5: Improvisation and the Blues.** To be able to improvise with notes from the Blues scale. |  |  |
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| **OUTCOME/COMPOSITE**Pupils will have designed and made an electrical pop-up greetings card to sell at the Christmas fayre |  | **OUTCOME/COMPOSITE**Play a selection of Blues scale notes out of order in their own improvisation and perform to their class. |  |  |

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| **HISTORY**Prior knowledge… Children will have learnt of other invaders and settlers and why people relocate The Space Race |  | **SPANISH**Prior knowledge… remember and use simple nouns, adjectives, and verbs with simple conversations from the Year 3 and 4 sections from the Spanish VLE. |  | **ART**Prior knowledge… Children know that a 3d effect can be achieved by blending light into dark colours. They know the difference between expressive and literal language; this can be applied to expressionism vs realism in art.  |  |
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| **INTENT**Pupils will understand the need for space exploration and the skills required to do so. |  | **INTENT**Pupils will talk about feelings in Spanish; be able to talk about themselves; discuss school subjects with opinion on them and learn directions.Pupils will understand and respond to at least four questions about personal information. Can write more than one descriptive sentence about an imaginary planet. |  | **INTENT**Pupils will develop their drawing skills; shading with a variety of media: spheres and planets. They will learn about abstract artists from history, know about Peter Thorpe, a current artist and will use inspiration from these artists to create a piece of space themed artwork. |  |
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| **VOCABULARY/STICKY KNOWLEDGE**Satellite, telescope, USSR, Space Race, Sputnik, observatories |  | **VOCABULARY/STICKY KNOWLEDGE****Como estas hoy? Porque? Porque. Estoy feliz/ triste/ confundido/ gracioso, cansado** **Y, Pero,** **Tego sed, hambre, calor, frio****Me gusta, no me gusta…****En mi cuidad hay…****Tienes…en el cuidad?****Quisiera… Te puedo ayuda?** |  | **VOCABULARY/STICKY KNOWLEDGE**Expressionism, abstract, depth, shade, highlight, foreground, background.That pencil, charcoal, chalk, and pastels are examples of dry media for drawingThat shading and highlighting can be applied to a drawing, showing light from different directions, giving form to shaded objectsPeter Thorpe is a current artist.Kandinsky and Pollock are examples of famous 20th C. abstract expressionist painters. |  |
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| **SEQUENCE OF LESSONS:**1. How did the invention of the telescope change the exploration of Space?
2. Who was involved in the early years of space exploration from 1940 to 1970?
3. What was the impact of the first moon landing?
4. How is space explored these days?
 |  | **SEQUENCE OF LESSONS:**1. To introduce myself with simple sentences
2. To explain in more detail how I am feeling
3. To say some important things about myself and somebody else
4. To name some school subjects in Spanish and give my opinion.

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2. To ask and answer questions about someone’s identity
3. To read simple information about planets
4. To read and understand simple information about planets
5. To create simple sentences about an imaginary planet
6. To make a poster about my planet creation
 |  | **SEQUENCE OF LESSONS:**1. To shade using 3d objects 2B pencils, then the solar system/planets with pastel or cray pas, focusing on 3-D sphere. 2. To introduce Artist Peter Thorpe and other abstract artists from Kandinsky to de Kooning3. After inspiration form artists, to experiment with texture and background ideas in sketchbook using paint, pastel, craypas, collage.4. To design a foreground - space rocket planets.5. To choose background design and create on A3 paper.6. To combine bot background and foreground elements to complete A3 piece. Evaluate own work and each other’s work. |  |
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| **OUTCOME/COMPOSITE**Pupils will experience the Space Dome and have a visitor in from the Space Hub near Newquay. Also, they will watch Hidden Figures to celebrate BAME influences  |  | **OUTCOME/COMPOSITE**Pupils will… **Create own planet with name and description of what is on their planet in Spanish.** |  | **OUTCOME/COMPOSITE**Pupils will paint a space themed picture in the style of Peter Thorpe and other abstract expressionists, using an abstract art background and a space feature in the foreground. |  |
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