**Home Learning Links from Science Planning Resource**

**Early Level**

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| Experience and Outcome | Home Learning Link(s) or ideas |
| SCN 0-01a**I have observed living things over time and am becoming aware of how they depend on each other** | * Seasonal or nature Walks
* Planting and growing
* Photos of what we can see in nature
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| SCN 0-03a**I have helped to grow plants and can name their basic parts. I can talk about how they grow and what I need to do to look after them.**  | Grow a plant at home and monitor it as it develops |
| SCN 0-04a**I have experienced, used and described a wide range of toys and common appliances. I can say what makes it go and say what they do when they work** | * What uses energy at home? Keep a diary/create a poster of a hunt around the house for appliances and toys that use energy.
* Show and tell about toys that do/do not use energy
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| SCN 0-05a**By investigating how water can change from one form to another, I can relate my findings to every day experiences** | * Seasonal or nature Walks
* Photos of what we can see in nature
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| SCN 0-06a**I have experienced the wonder of looking at the vastness of the sky, and can recognise the sun, moon and stars and link them to daily patterns of life.** | * Create pictures of the sun, moon, earth and stars for a bedroom wall display.
* Observe the sunrise and sunset and notice how the times of these change over time. (Do in a very simple way)
* Bake moon/star shaped biscuits.
* Talk about your bedtime routine
* Read some space themed books
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| SCN 0-07a**Through everyday experiences and play with a variety of toys and other objects, I can recognise simple types of forces and describe their effects** | * Forces search at home
* Playing with toys – thinking about push, pull and twist forces used
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| SCN 0-09a**I know how to stay safe when using electricity. I have helped to make a display to show the importance of electricity in our daily lives.** | * Survey of electrical use at home
* Observing smart meters and how they work
* Safe disposal of batteries – examine what you need to do
* Families could encourage safe practice when using electrical appliances in the home.
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| SCN 0-11a**Through play, I have explored a variety of ways of making sounds** | Make a musical instrument |
| SCN 0-12a**I can identify my senses and use them to explore the world around me** | Exploring different tastes/sounds/textures etc at their houses/gardens compared to school/ exploring with levels of sound |
| SCN 0-15a**Through creative play, I explore different materials and can share my reasoning for selecting materials for different purposes** | Watch Bitz and Bob and Do You Know?[www.bbc.co.uk/programmes/b09w6m2v/episodes/guide](http://www.bbc.co.uk/programmes/b09w6m2v/episodes/guide)<https://www.bbc.co.uk/cbeebies/shows/do-you-know>  |
| SCN 0-20a**I can talk about science stories to develop my understanding of science and the world around me**.  | Encourage children to talk about science at home. Get children to hunt round their homes for evidence of science in action.Use this website for further ideas or discussion areas<https://www.reachoutreporter.com/>  |

**First Level**

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| Experience and Outcome | Home Learning Link(s) or ideas |
| SCN 1-01a**I can distinguish between living and non-living things. I can sort living things into groups and explain my decisions.**  | * House plants – what keeps them alive?
* Gardening – grow own vegetables
* Make instructions for looking after pet/plant when we go on holiday
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| SCN 1-02a**I can explore examples of food chains and show an appreciation of how animals and plants depend on each other for food** | Keep a diary of what you have eaten and trace it back  |
| SCN 1-03a**I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school.** | * Grow plants from seeds and alter the conditions the seeds are placed in eg with/without water, with/without light, warm and cold places
* Look at country of origins of fruit and vegetable labels
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| SCN 1-04a**I am aware of different types of energy around me and can show their importance to everyday life and my survival.** | * Investigate energy in your home, find and list appliances, toys, and devices that use mains electricity and battery power.
* Discuss with family if they could do their job without power?
* Discuss with family how the use of power and electricity has changed in their lives.
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| SCN 1-05a**By investigating how water can change from one form to another, I can relate my findings to everyday experiences** | * Seasonal or nature walks – looking for water in different states
* Planting and growing – how we use water
* Photos of what we can see in nature in relation to water
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| SCN 1-06a**By safely observing and recording the sun and moon at various times, I can describe their patterns of movement and changes over time. I can relate these to the length of a day, month and a year** | * How has space and the moon been represented in music? Gustav Holst – *The Planets*, *The Police – Walking on the Moon, David Bo*wie – *Space Oddity* etc.
* Find out the names given to the full moon through the year, e.g., Harvest Moon, Pink Moon, Snow Moon etc.
* Junk modelling - Create and build a re-entry capsule for your ‘eggnaut’ to safely return to earth.
* Find some non-fiction books about space.
* Look out for a space themed news item.
* Visit Tim Peake’s blog timpeake.esa.int
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| SCN 1-07a**By investigating forces on toys and other objects, I can predict the effect on the shape or motions of objects** | * Design a roller coaster with your parent/carer. <https://www.learner.org/exhibits/parkphysics/coaster/>
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| SCN 1-08a**By exploring the forces exerted by magnets on other magnets and magnetic materials, I can contribute to the design of a game** | * What objects in your house use magnets?
* How many times a day do you come into contact with magnets?
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| SCN 1-09a**I can describe and electrical circuit as a continuous loop of conducting materials. I can combine simple components in a series circuit to make a game or model.** | Carry out a home electricity audit. - This can be measured through smart meters or online calculators. |
| SCN 1-11a**By collaborating in experiments on different ways of producing sound from vibrations, I can demonstrate how to change the pitch of the sound.** | * <https://www.wikihow.com/Make-Musical-Instruments-with-Recycled-Materials> Try out some of the activities on this website for making instruments.
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| SCN 1-12a**By researching, I can describe the position and function of the skeleton and major organs of the human body and discuss what I need to do to keep them healthy.** | Food/ activity/sleep diaries/charts – healthy life style monitoring |
| SCN 1-12b**I have explored my senses and can discuss their reliability and limitations in responding to the environment** | * Taste foods not tasted before – expand food choice
* Protecting senses – sound level, sunglasses, exposure to devices
* Look at how friendly is your house/neighbourhood is for people with impairments – map log
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| SCN 1-13a**I know the symptoms of some common diseases caused by germs. I can explain how they are spread and discuss how some methods of preventing and treating disease benefit society.** | * Encourage daily hygiene practices in the home
* Design a poster which highlights the main symptoms and ways to prevent the spread of some diseases.
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| SCN 1-14a**By comparing generations of humans, plants and animals, I can begin to understand how characteristics are inherited** | * <http://www.saps.org.uk/primary/beyond-the-classroom> Go outdoors to a place near your home to observe animal parents and their young.
* Look through photos at home of parents when they were young and how they are similar to the children today. This can be extended to other family members, Grandparents, aunties etc.
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| SCN 1-15a**Through exploring properties and sources of materials, I can choose appropriate materials to solve practical challenges** | Classify everyday objects in the home as synthetic or natural materialsDesign a new shopping bag thinking about what material(s) could be used in the bag |
| SCN 1-16a**I can make and test predictions about solids dissolving in water and can relate my findings to the world around me.** | Dissolving Experiment <https://www.youtube.com/watch?v=r0nNvsB_fOw> |
| SCN 1-20a**I have contributed to discussions of current scientific news items to help develop my awareness of science.** | * Children can research a scientist at home and deliver a solo talk or presentation on them.
* Children can discuss what scientists do with someone at home, or create a drawing of a scientist.
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**Second Level**

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| Experience and Outcome | Home Learning Link(s) or ideas |
| SCN 2-01a**I can identify and classify examples of living things, past and****present, to help me appreciate their diversity. I can relate physical and behavioural characteristics to their survival or extinction.** | * Sampling in a tidal pool, river or stream for the animals that live there (supervision may be required)
* Looking at the RSPB Bird watch and doing a follow up activity <https://www.rspb.org.uk/get-involved/activities/birdwatch/>
* Going on a woodland walk and taking pictures of plants, trees or animals and using books and online sources to identify them <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/>
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| SCN 2-02a**I can use my knowledge of the interactions and energy flow****between plants and animals in ecosystems, food chains and****webs. I have contributed to the design or conservation of a****wildlife area.**  | * Explore the ecosystems in your garden or on a local walk
* Think about the food you eat in a day – what are the food chains involved? Can you trace it back?
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| SCN 2-02b**Through carrying out practical activities and investigations, I can show how plants have benefited society** | What is a medicine? <https://www.youtube.com/watch?v=9OK6_OdWxTA>  |
| SCN 2-03a**I have collaborated in the design of an investigation into the effects of fertilisers on the growth of plants. I can express an informed view of the risks and benefits of their use.**  | * Do some gardening at home – this can be outside or inside, even using window baskets
* Look at plant labels to find out more about where plants prefer to grow
* Design your ideal garden and carefully consider which plants would grow where – using gardening websites to help you think about which plants would be most suitable
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| SCN 2-04a**By considering examples where energy is conserved, I can identify the energy source, how it is transferred and ways of reducing wasted energy.** | Discuss with those in your home how energy use has changed in their lifetime. Do some research into solar power or another form of renewable energy <https://www.nationalgeographic.com/environment/energy/reference/renewable-energy/>  |
| SCN 2-04b**Through exploring non-renewable energy sources, I can describe how they are used in Scotland today and express an informed view on the implications for their future use.** | Find out how much energy is used in your home. Monitor how energy is used in your home and suggest ways that you could reduce the amount of money spent on energy (for example looking at light switches being turned off) |
| SCN 2-05a**I can apply my knowledge of how water changes state to help me understand the processes involved in the water cycle in nature over time** | Look at where and how water is used on your daily walk/exercise |
| SCN 2-06a**By observing and researching features of our Solar System, I can use simple models to communicate my understanding of size, scale, time and relative motion within it.** | * Create a space themed board or card game and teach friends and family members how to play.
* Visit your local library and find some non-fiction books about space.
* Look out for a space themed news item.
* Find out which countries have put astronauts into space. Mark them on a map.
* Find out about how to become an astronaut.
* YouTube Scientist – Mark Rober talks about scale in space!
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| SCN 2-07a**By investigating how friction, including air resistance, affects motion, I can suggest ways to improve efficiency in moving objects.**  | Watch an episode of Science Max with siblings/guardians about friction and discuss.<https://www.youtube.com/channel/UCbprhISv-0ReKPPyhf7-Dtw>  |
| SCN 2-08a**I have collaborated in investigations to compare magnetic, electrostatic and gravitational forces and have explored their practical applications.** | How could magnets make home life easier? Design a solution for an everyday problem which uses magnets |
| SCN 2-08b**By investigating floating and sinking of objects in water, I can apply my understanding of buoyancy to solve a practical challenge.** | Design a model for a boat. Can you build a prototype and test it? |
| SCN 2-09a**I have used a range of electrical components to help to make****a variety of circuits for differing purposes. I can represent my****circuit using symbols and describe the transfer of energy around the circuit.** | Watch the BBC Bitesize video on electrical symbols and create a poster to display this. <http://www.bbc.co.uk/guides/zs7g4j6#zc9sv4j>  |
| SCN 2-10a**To begin to understand how batteries work, I can help to build simple chemical cells using readily-available****materials which can be used to make an appliance work.** | Do a hunt around the house to find household items which may use a chemical cell. |
| SCN 2-11a**Through research on how animals communicate, I can explain how sound vibrations are carried by waves through air, water and other media.**  | Hearing test - test your relatives! Investigate online hearing tests. Do you think these are reliable? Has anyone in your family had a hearing test or require a hearing aid?<https://www.youtube.com/watch?v=_SHFwmPQ_rQ>  |
| SCN 2-11b**By exploring reflections, the formation of shadows and the light of mixing of coloured lights, I can use my knowledge of the properties of light to show how it can be used in a creative way.** | Research how the first televisions worked |
| SCN 2-12a**By investigating some body systems and potential problems which they may develop, I can make informed decisions to help me to maintain my health and wellbeing.** | * Look at the ways you could improve your fitness outside of school.
* Create a model of the digestive system using junk modelling
* Interview – pupils could talk to a family member who has suffered a fracture; a bone disease such as arthritis; or, a soft tissue injury (to muscle, tendon, or ligament). What caused it? How was/is it treated? What impact did/does it have on their day to day life?
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| SCN 2-12b**I have explored the structure and function of sensory organs to develop my understanding of body actions in response to outside conditions.** | Create a poster/fact file/booklet on how an inventor/scientist has made a development in relation to one of the senses. |
| SCN 2-13a**I have contributed to investigations into the role of microorganisms in producing and breaking down some****materials.** | * Try to make bread or pizza at home
* Set up a composting bin
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| SCN 2-14a**By investigating the lifecycles of plants and animals, I can recognise the different stages of their development.** | In a garden or on a windowsill, build an invertebrate hotel <https://www.rspb.org.uk/getinvolved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/>or natural pond <https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/createaminipond/><http://www.saps.org.uk/primary/beyond-the-classroom>  |
| SCN 2-14b**By exploring the characteristics offspring inherit when living things reproduce, I can distinguish between inherited and non-inherited characteristics.** | Look at your own family tree or that of a pet and consider how characteristics have been inherited.Activity: construct sweetie DNA, create your own genetic code. <http://edincell.bio.ed.ac.uk/content/dna-structure-primary-school-children>  |
| SCN 2-15a**By contributing to investigations into familiar changes in substances to produce other substances, I can describe how their characteristics have changed.**  | Try some of these experiments<https://www.kiwico.com/blog/2016/10/14/10-simple-chemistry-experiments-for-kids/>  |
| SCN 2-16a**I have participated in practical activities to separate simple mixtures of substances and can relate my findings to my everyday experience.** | Try this chromatography experiment<https://www.youtube.com/watch?v=8uFLOQ18Mt8>  |
| SCN 2-16b**By investigating common conditions that increase the amount of substance that will dissolve or the speed of dissolving, I can relate my findings to the world around me.** | Try this filtration experiment<https://www.youtube.com/watch?v=RqWV7ozfFNQ&feature=youtu.be>  |
| SCN 2-17a**Having explored the substances that make up Earth’s surface, I can compare some of their characteristics and uses.** | Create a poster, sway or other presentation on the different types of rocks. This website may help <https://www.rocksforkids.com/>  |
| SCN 2-18a**I have investigated different water samples from the environment and explored methods that can be used to clean and conserve water and I am aware of the properties and uses of water.** | Complete the practical action ‘Ditch the dirt’ activity <https://practicalaction.org/schools/ditch-the-dirt/#resources>  |
| SCN 2-19a**I have collaborated in activities which safely demonstrate simple chemical reactions using everyday chemicals. I can show an appreciation of a chemical reaction as being a change in which different materials are made.** | Try some of these experiments<https://www.kiwico.com/blog/2016/10/14/10-simple-chemistry-experiments-for-kids/> |
| SCN 2-20a and 2-20b**Through research and discussion I have an appreciation of the contribution that individuals are making to scientific discovery and invention and the impact this has made on society.** **I can report and comment on current scientific news items to develop my knowledge and understanding of topical science.**  | Read some of the current news on this website – create a summary of some of the articles <https://www.dogonews.com/>  |